Panasonic
INDUSTRY

PhotoMOS®

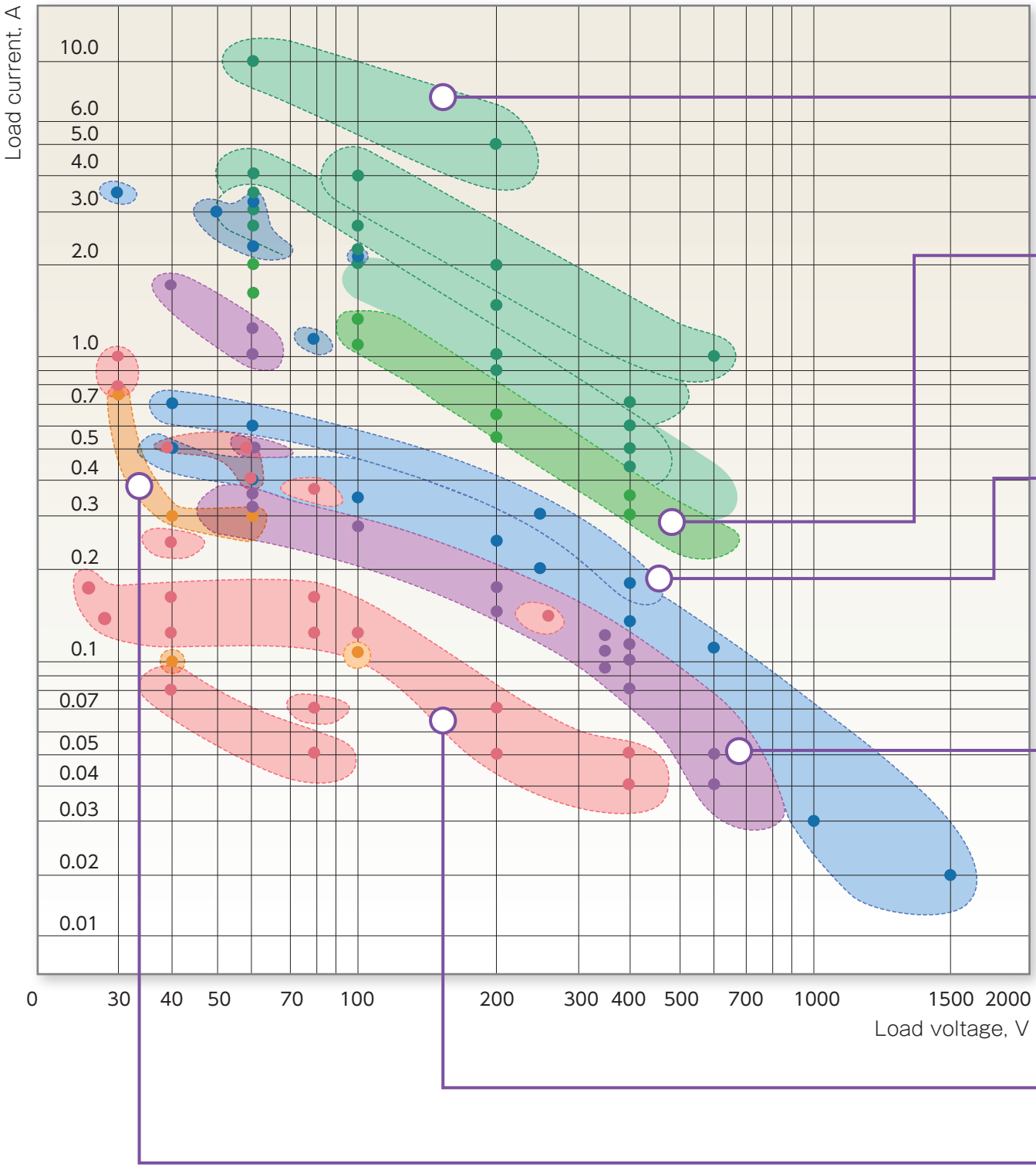
Phototriac Coupler
Solid State Relays

Catalogue
2020

INDEX

PhotoMOS®

Panasonic's world's leading by offering a great lineup.



***About automotive applications**

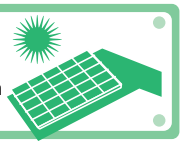
If you are considering to use PhotoMOS® for automotive applications, please contact your local Panasonic Corporation technical representive.

PhotoMOS® support various core industries

Slim & Power
- Power High Capacity type
- Power DC only type
- Power AC/DC dual use type

Flat & Power
- PD type

- •Energy management
- •Photovoltaic power generation
- •Storage battery



- •Robots
- •Machine tools
- •Industrial machines

Low on-resistance
- HF DC only type
- HF AC/DC dual use type

Low on-resistance & Economical
- HE type

- •Office equipment
- •Industrial machines
- •Measuring instruments

General use
- GU type

Economical & General
- GE type

High sensitivity
- HS type

- •Game machines
- •Security systems
- •Data communications

Low on-resistance & Low output capacitance
- RF type

- •Data communications
- •Measuring instruments
- •Medical equipment

Low current consumption & Guaranteed performance at high temperature
- CC type

- •Probe cards
- •Measuring instruments

- **PD:** Power DIP
- **HF:** High Functioned
- **HE:** High functioned and Economical
- **RF:** Radio Frequency
- **GU:** General Use
- **GE:** General use and Economical
- **HS:** High Sensitivity
- **CC:** Capacitor Coupled

PhotoMOS® Part No. System

Channel configuration

- S : 4 channels (16-pin)
- Y : 1 channels (4-pin)
- V : 1 channels (6-pin)
- Z : 1 channels (SIL4-pin)
- W : 2 channels (8-pin)

Type

- 0 : HF type Low on-resistance / Power type Slim and power
- 1 : GU type Wide variation / GE type General use and Economical
- 2 : RF type Low on-resistance and low output capacitance
- 3 : HS type High sensitivity
- 5 : HE type Low on-resistance & Economical
- 6 9 : Power High Capacity type Slim and power
- 7 : PD type Flat and power
- C : CC type Capacitor coupled isolation type NEW

Output configuration

- 1 : 1 Form A (DC)
- 2 : 1 Form A (AC/DC) 2 Form A (AC/DC)
- 4 : 1 Form B (AC/DC) 2 Form B (AC/DC)
- 6 : 1 Form A & 1 Form B (AC/DC)

A = Normally open B = Normally closed

Load voltage

- 0 : 350V
- 1 : to 40V
- 2 : 50V to 60V
- 3 : 250V
- 4 : 400V
- 5 : 80V to 100V
- 6 : 600V
- 7 : 200V
- 8 : 1500V
- 9 : 1000V

AQ Y 2 2 1 F E H L V Y

Driving method

- Nil : Current-sensitive
- D : Power type voltage-sensitive
- F : Small size type voltage-sensitive (Recommend input voltage: 5V)

Current limit function

- Nil : Non
- K : With short circuit protection (latching)
- KL : With short circuit protection (non-latching)
- L : With current limiting

Feature

- Nil : Standard
- E : Economical
- G : High capacity
- N : Low C × R
- R : Low C × R

Package

- Nil : DIP (through hole terminal)
- A : DIP (surface mount terminal)
- M : SON
- S : SOP
- T : VSSOP
- V : SSOP
- P : TSON NEW

I/O isolation voltage

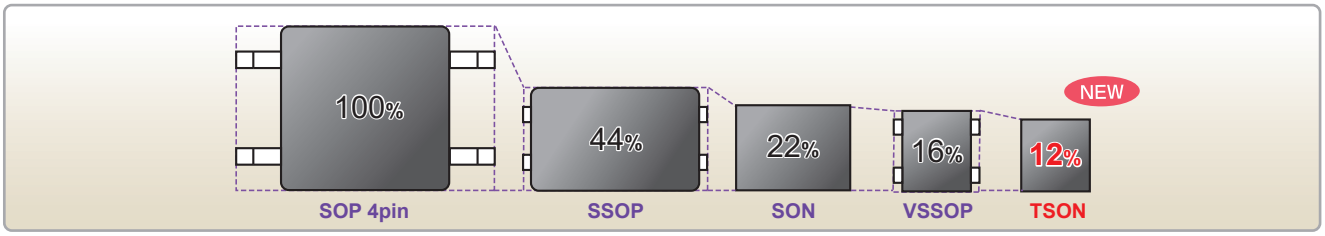
- Nil : Basic insulation (200V, 500V, 1500V, 2500V, 3000V)
- H : Reinforced insulation (5000V)

Packing style

- Nil : Tube
- X : Tape and reel (DIP/SOP)
- Z : Tape and reel (DIP/SOP)
- Y : Tape and reel (SSOP/SON/VSSOP)
- W : Tape and reel (SSOP/SON/VSSOP)

Valid only for combinations of products listed in the catalog (see "TYPES" in this catalog).
Please inquire regarding combinations with products not listed in this catalog.

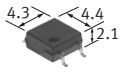
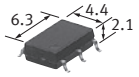
Package size



PhotoMOS® Selector Chart

GU General use & wide variation

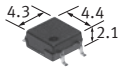
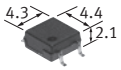
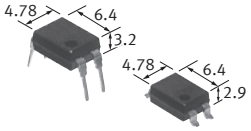
GU GE CC RF HE HF HS PD Power

Product name			GU SOP								
Contact configuration			1 Form A			1 Form A					
Number of terminals			4pin			6pin					
Appearance configuration *Standoff height included mm											
Features			Miniature SOP4-pin type of 60V/350V/400V load voltage			Miniature SOP6-pin type of 60 to 600V load voltage					
Part No.			**AQY212S**	**AQY210S**	**AQY214S**	**AQV212S**	**AQV215S**	**AQV217S**	**AQV210S**	**AQV214S**	**AQV216S**
Output	Load voltage		AC/DC			AC/DC					
		Peak AC	60V	350V	400V	60V	100V	200V	350V	400V	600V
		DC	60V	350V	400V	60V	100V	200V	350V	400V	600V
	Continuous load current *6-pin type: in case of A connection		1A 0.5A 0.5A	0.12A	0.1A	0.5A	0.3A	0.16A	0.12A	0.1A	0.04A
	Peak load current		1.5A	0.3A	0.24A	1.5A	0.9A	0.48A	0.3A	0.3A	0.12A
	Power dissipation		300mW			450mW					
	On resistance *6-pin type: in case of A connection	Typ.	0.83Ω	17Ω	25Ω	0.83Ω	2.3Ω	11Ω	23Ω	30Ω	70Ω
		Max.	2.5 Ω	25Ω	35Ω	2.5 Ω	4.0Ω	15Ω	35Ω	50Ω	120Ω
	Output capacitance (Typ.)		80pF	45pF		80pF	110pF	70pF	45pF		
	Off state leakage current (Max.)		1μA			1μA					
Input	LED forward current		50mA			50mA					
	LED reverse voltage		5V			5V					
	Peak forward current		1A			1A					
	Power dissipation		75mW			75mW					
	LED operate current	Typ.	0.9 mA			0.7 mA					
		Max.	3 mA			3 mA					
	LED turn off current	Min.	0.4 mA			0.4 mA					
		Typ.	0.85mA			0.65mA					
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)			1.25V (1.14V at IF = 5mA)					
		Max.	1.5V			1.5V					
Turn on time		Typ.	0.65ms	0.23ms	0.21ms	0.65ms	0.60ms	0.25ms	0.25ms		0.28ms
		Max.	2 ms	0.5 ms	0.5 ms	2 ms	2 ms	1 ms	0.5 ms		0.5 ms
Turn off time		Typ.	0.08ms	0.04ms		0.08ms	0.06ms	0.05ms			0.04ms
		Max.	0.2 ms	0.2 ms		0.2 ms	0.2 ms	0.2 ms			0.2 ms
Total power dissipation			350mW			500mW					
I/O isolation voltage			1,500Vrms			1,500Vrms					
I/O capacitance		Typ.	—			0.8pF					
		Max.	1.5pF			1.5pF					
Initial I/O isolation resistance (Min.)			1,000MΩ			1,000MΩ					
Safety standards			UL/C-UL, BSI			UL/C-UL					
Mass (weight) (approx.)			0.084g			0.125g					

PhotoMOS® Selector Chart

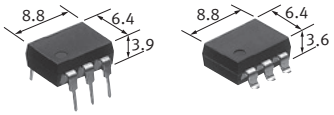
GU General use & wide variation

GU GE CC RF HE HF HS PD Power

Product name			GU SOP High Capacity				GU SOP High Capacity Voltage-sensitive	GU High Capacity
Contact configuration			1 Form A				1 Form A	1 Form A
Number of terminals			4pin				4pin	4pin
Appearance configuration *Standoff height included mm								
Features			Miniature SOP4-pin type with high capacity up to 1.6A				Space-saving SOP4-pin high capacity type with built-in input registor	4-pin high capacity of 1.1A, I/O isolation voltage of 5,000V
Part No.			AQY211G2S	AQY212G2S	AQY212GS	NEW AQY217GS	AQY212FG2S	AQY212GH
Output	Load voltage		AC/DC				AC/DC	AC/DC
		Peak AC	40V	60V		200V	60V	60V
		DC	40V	60V		200V	60V	60V
	Continuous load current							
	Peak load current		4.0A	3.0A		1.2A	3.0A	3.0A
	Power dissipation		400mW				400mW	500mW
	On resistance	Typ.	0.1 Ω	0.2Ω	0.34Ω	1.8Ω	0.2Ω	0.34Ω
		Max.	0.15Ω	0.5Ω	0.7 Ω	2.5Ω	0.5Ω	0.7 Ω
	Output capacitance (Typ.)		180pF	150pF	220pF	85pF	150pF	220pF
	Off state leakage current (Max.)		1μA				1μA	1μA
Input	LED forward current		50mA				Input voltage: 6V	50mA
	LED reverse voltage		5V				Input reverse voltage: 5V	5V
	Peak forward current		1A				—	1A
	Power dissipation		75mW				65mW	75mW
	LED operate current	Typ.	0.9mA	1.1mA		0.75mA	Operate voltage: 1.4V	1.1mA
		Max.	3 mA	3 mA		3 mA	Operate voltage: 4 V	3 mA
	LED turn off current	Min.	0.2mA	0.3mA		0.2 mA	Turn off voltage: 0.8V	0.3mA
		Typ.	0.8mA	1 mA		0.7 mA	Turn off voltage: 1.4V	1 mA
	LED dropout voltage	Typ.	1.32V (1.14V at I_F = 5mA)				Input current: 8.5mA	1.32V (1.14V at I_F = 5mA)
		Max.	1.5V				(V_{IN} = 5V)	1.5V
Turn on time		Typ.	1 ms	1.3ms		1.2 ms	0.7ms	1.3ms
		Max.	3 ms	5 ms		5 ms	5 ms	5 ms
Turn off time		Typ.	0.12ms	0.1ms		0.03ms	0.1ms	0.1ms
		Max.	0.5 ms	0.5ms		0.2 ms	0.5ms	0.5ms
Total power dissipation			450mW				450mW	550mW
I/O isolation voltage			1,500Vrms				500Vrms	5,000Vrms
I/O capacitance		Typ.	0.8pF				0.8pF	0.8pF
		Max.	1.5pF				1.5pF	1.5pF
Initial I/O isolation resistance (Min.)			1,000MΩ				1,000MΩ	1,000MΩ
Safety standards			UL/C-UL, VDE			UL/C-UL	UL/C-UL, VDE	UL/C-UL, VDE
Mass (weight) (approx.)			0.084g				0.084g	0.19g

GU General use & wide variation

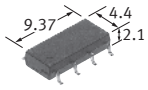
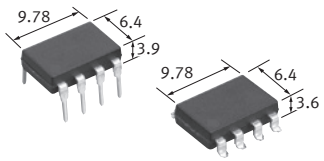
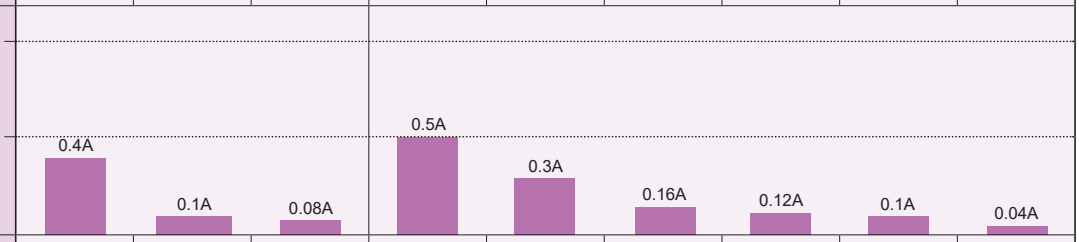
GU GE CC RF HE HF HS PD Power

Product name			GU						
Contact configuration			1 Form A						
Number of terminals			6pin						
Appearance configuration *Standoff height included mm									
Features			6-pin type for switching low-level analog signal						
Part No.			AQV212	AQV215	AQV217	AQV210	AQV214	AQV216	AQV214H
Output	Load voltage		AC/DC						
		Peak AC	60V	100V	200V	350V	400V	600V	400V
		DC	60V	100V	200V	350V	400V	600V	400V
	Continuous load current *6-pin type: in case of A connection		1A 0.5A 0.55A	0.32A	0.18A	0.13A	0.12A	0.05A	0.12A
	Peak load current		1.5A	0.96A	0.54A	0.4A	0.3A	0.15A	0.3A
	Power dissipation		500mW						
	On resistance *6-pin type: in case of A connection	Typ.	0.83Ω	2.3Ω	11Ω	23Ω	30Ω	70Ω	30Ω
		Max.	2.5 Ω	4 Ω	15Ω	35Ω	50Ω	120Ω	50Ω
	Output capacitance (Typ.)		80pF	110pF	70pF	45pF			
	Off state leakage current (Max.)		1μA						
Input	LED forward current		50mA						
	LED reverse voltage		5V						
	Peak forward current		1A						
	Power dissipation		75mW						
	LED operate current	Typ.	1 mA						1.3mA
		Max.	3 mA						3 mA
	LED turn off current	Min.	0.4 mA						0.4mA
		Typ.	0.79mA						1.2mA
	LED dropout voltage	Typ.	1.25V (1.14V at I_F = 5mA)						
		Max.	1.5V						
Turn on time		Typ.	0.65ms	0.60ms	0.25ms	0.25ms	0.21ms	0.28ms	0.6 ms
		Max.	2 ms	2 ms	1 ms	0.5 ms	0.5 ms	0.5 ms	0.8 ms
Turn off time		Typ.	0.08ms	0.06ms	0.05ms	0.05ms	0.05ms	0.04ms	0.05ms
		Max.	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms
Total power dissipation			550mW						
I/O isolation voltage			1,500Vrms						5,000Vrms
I/O capacitance		Typ.	0.8pF						
		Max.	1.5pF						
Initial I/O isolation resistance (Min.)			1,000MΩ						
Safety standards			UL/C-UL						UL/C-UL, BSI
Mass (weight) (approx.)			0.453g						

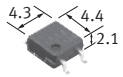
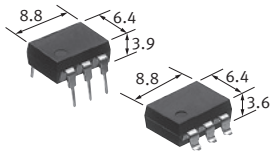
PhotoMOS® Selector Chart

GU General use & wide variation

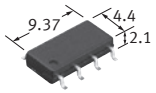
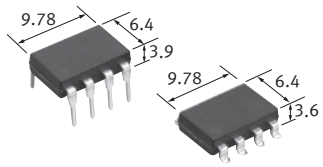
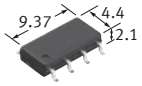
GU GE CC RF HE HF HS PD Power

Product name			GU SOP			GU					
Contact configuration			2 Form A			2 Form A					
Number of terminals			8pin			8pin					
Appearance configuration *Standoff height included mm											
Features			Miniature SOP8-pin type of 60V/350V/400V load voltage			Compact DIP8-pin type of 60V to 600V load voltage					
Part No.			**AQW212S**	**AQW210S**	**AQW214S**	**AQW212**	**AQW215**	**AQW217**	**AQW210**	**AQW214**	**AQW216**
Output	Load voltage		AC/DC			AC/DC					
		Peak AC	60V	350V	400V	60V	100V	200V	350V	400V	600V
		DC	60V	350V	400V	60V	100V	200V	350V	400V	600V
	Continuous load current										
	Peak load current		1.5A	0.3A	0.24A	1.5Ω	0.9A	0.48A	0.36A	0.3A	0.12A
	Power dissipation		600mW			800mW					
	On resistance	Typ.	0.83Ω	16Ω	30Ω	0.83Ω	2.3Ω	11Ω	23Ω	30Ω	70Ω
		Max.	2.5 Ω	35Ω	50Ω	2.5 Ω	4 Ω	15Ω	35Ω	50Ω	120Ω
	Output capacitance (Typ.)		80pF	45pF		80pF	110pF	70pF	45pF		
	Off state leakage current (Max.)		1μA			1μA					
Input	LED forward current		50mA			50mA					
	LED reverse voltage		5V			5V					
	Peak forward current		1A			1A					
	Power dissipation		75mW			75mW					
	LED operate current	Typ.	0.9mA			0.9mA					
		Max.	3 mA			3 mA					
	LED turn off current	Min.	0.4mA			0.4mA					
		Typ.	0.8mA			0.8mA					
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)			1.25V (1.14V at IF = 5mA)					
		Max.	1.5V			1.5V					
Turn on time		Typ.	0.65ms	0.23ms	0.21ms	0.65ms	0.60ms	0.25ms	0.25ms	0.31ms	0.28ms
		Max.	2 ms	0.5 ms	0.5 ms	2 ms	2 ms	1.0 ms	0.5 ms	0.5 ms	0.5 ms
Turn off time		Typ.	0.08ms	0.04ms		0.08ms	0.06ms	0.05ms			0.04ms
		Max.	0.2 ms	0.2 ms		0.2 ms	0.2 ms	0.2 ms			0.2 ms
Total power dissipation			650mW			850mW					
I/O isolation voltage			1,500Vrms			1,500Vrms					
I/O capacitance		Typ.	0.8pF			0.8pF					
		Max.	1.5pF			1.5pF					
Initial I/O isolation resistance (Min.)			1,000MΩ			1,000MΩ					
Safety standards			UL/C-UL, BSI			UL/C-UL					
Mass (weight) (approx.)			0.195g			0.5g					

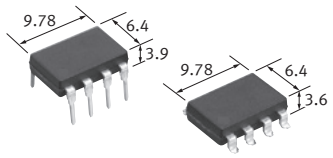
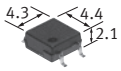
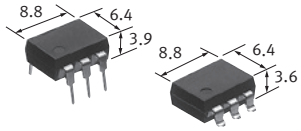
GU General use & wide variation

Product name			GU SOP				GU
Contact configuration			1 Form B			1 Form B	1 Form B
Number of terminals			4pin			6pin	6pin
Appearance configuration *Standoff height included mm							
Features			Normally closed SOP4-pin type of 60V/350V/400V load voltage			Normally closed SOP6-pin type of 400V load voltage	Normally closed 6-pin type of 400V load voltage
Part No.			AQY412S	AQY410S	AQY414S	AQV414S	AQV414
Output	Load voltage		AC/DC			AC/DC	AC/DC
		Peak AC	60V	350V	400V	400V	400V
		DC	60V	350V	400V	400V	400V
	Continuous load current *6-pin type: in case of A connection		1A / 0.5A — 0.5A	0.12A	0.1A	0.1A	0.12A
	Peak load current		1.5A	0.3A	0.24A	0.3A	0.3A
	Power dissipation		300mW			450mW	500mW
	On resistance *6-pin type: in case of A connection	Typ.	1Ω	18Ω	26Ω	26Ω	26Ω
		Max.	2.5Ω	25Ω	35Ω	50Ω	50Ω
	Output capacitance (Typ.)		500pF	110pF	100pF	100pF	100pF
	Off state leakage current (Max.)		1μA			1μA	1μA
Input	LED forward current		50mA			50mA	50mA
	LED reverse voltage		5V			5V	5V
	Peak forward current		1A			1A	1A
	Power dissipation		75mW			75mW	75mW
	LED operate current	Typ.	0.9 mA			0.6 mA	1 mA
		Max.	3 mA			3 mA	3 mA
	LED turn off current	Min.	0.4 mA			0.4 mA	0.4 mA
		Typ.	0.85mA			0.55mA	0.95mA
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)			1.25V (1.14V at IF = 5mA)	1.25V (1.14V at IF = 5mA)
		Max.	1.5V			1.5V	1.5V
Turn on time		Typ.	0.9 ms	0.52ms	0.47ms	0.47ms	0.47ms
		Max.	3 ms	1 ms	1 ms	1 ms	1 ms
Turn off time		Typ.	0.21ms	0.23ms	0.28ms	0.28ms	0.28ms
		Max.	1 ms	1 ms	1 ms	1 ms	1 ms
Total power dissipation			350mW			500mW	550mW
I/O isolation voltage			1,500Vrms			1,500Vrms	1,500Vrms
I/O capacitance		Typ.	0.8pF			0.8pF	0.8pF
		Max.	1.5pF			1.5pF	1.5pF
Initial I/O isolation resistance (Min.)			1,000MΩ			1,000MΩ	1,000MΩ
Safety standards			UL/C-UL, VDE	UL/C-UL, BSI		UL/C-UL	UL/C-UL
Mass (weight) (approx.)			0.084g			0.125g	0.453g

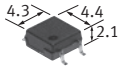
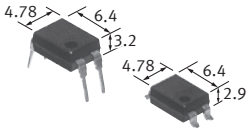
GU General use & wide variation

Product name			GU SOP	GU	GU SOP	
Contact configuration			2 Form B	2 Form B	1 Form A & 1 Form B	
Number of terminals			8pin	8pin	8pin	
Appearance configuration *Standoff height included mm						
Features			Normally closed SOP8-pin type of 400V load voltage	Normally closed DIP8-pin type of 400V load voltage	Both N.O. and N.C. contacts incorporated in a small SOP8-pin package	
Part No.			**AQW414S**	**AQW414**	**AQW612S**	**AQW610S**
Output	Load voltage		AC/DC	AC/DC	AC/DC	
		Peak AC	400V	400V	60V	350V
		DC	400V	400V	60V	350V
	Continuous load current		1A / 0.5A 0.08A	0.1A	0.45A 	0.1A
	Peak load current		0.24A	0.3A	1.5A	0.3A
	Power dissipation		600mW	800mW	600mW	
	On resistance	Typ.	26Ω	26Ω	1 Ω	18Ω
		Max.	50Ω	50Ω	2.5Ω	25Ω
	Output capacitance (Typ.)		100pF	100pF	80pF (N.O.) , 500pF (N.C.)	45pF (N.O.) , 100pF (N.C.)
	Off state leakage current (Max.)		1μA	1μA	1μA	
Input	LED forward current		50mA	50mA	50mA	
	LED reverse voltage		5V	5V	5V	
	Peak forward current		1A	1A	1A	
	Power dissipation		75mW	75mW	75mW	
	LED operate current	Typ.	0.9mA	0.7 mA	0.9mA	
		Max.	3 mA	3 mA	3 mA	
	LED turn off current	Min.	0.4mA	0.4 mA	0.4mA	
		Typ.	0.8mA	0.64mA	0.8mA	
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)	1.25V (1.14V at IF = 5mA)	1.25V (1.14V at IF = 5mA)	
		Max.	1.5V	1.5V	1.5V	
Turn on time		Typ.	0.43ms	0.46ms	0.65ms (N.O.) , 0.9ms (N.C.)	0.28ms (N.O.) , 0.52ms (N.C.)
		Max.	1 ms	1 ms	3ms	1ms
Turn off time		Typ.	0.3 ms	0.40ms	0.08ms (N.O.) , 0.2ms (N.C.)	0.04ms (N.O.) , 0.23ms (N.C.)
		Max.	1 ms	1 ms	1ms	1ms
Total power dissipation			650mW	850mW	650mW	
I/O isolation voltage			1,500Vrms	1,500Vrms	1,500Vrms	
I/O capacitance		Typ.	0.8pF	0.8pF	0.8pF	
		Max.	1.5pF	1.5pF	1.5pF	
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ	1,000MΩ	
Safety standards			UL/C-UL, BSI	UL/C-UL	UL/C-UL, VDE	UL/C-UL, BSI
Mass (weight) (approx.)			0.195g	0.5g	0.195g	

GU General use & wide variation

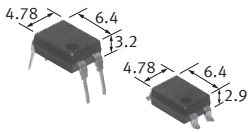
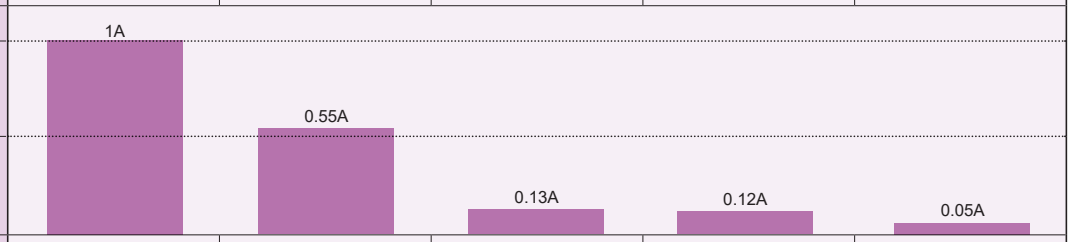
Product name			GU	GU SOP Short Circuit Protection (Latch type)	GU Short Circuit Protection (Non-latch type)
Contact configuration			1 Form A & 1 Form B	1 Form A	1 Form A
Number of terminals			8pin	4pin	6pin
Appearance configuration *Standoff height included mm					
Features			Both N.O. and N.C. contacts incorporated in a DIP8-pin package	Small SOP4-pin type with short circuit protecting (Latch type)	Short circuit protection (Non-latch type) only for DC load
Part No.			**AQW614**	**AQY210KS**	**AQV112KL**
Output	Load voltage		AC/DC	AC/DC	DC
		Peak AC	400V	350V	—
		DC	400V	350V	60V
	Continuous load current *6-pin type: in case of A connection		1A / 0.5A  0.1A	 0.12A	0.5A 
	Peak load current		0.3A	0.2A (Cut off current [Typ.])	—
	Power dissipation		800mW	400mW	500mW
	On resistance *6-pin type: in case of A connection	Typ.	27Ω	23.5Ω	0.55Ω
		Max.	50Ω	35 Ω	2 Ω
	Output capacitance (Typ.)		45pF (N.O.) , 100pF (N.C.)	42pF	300pF
	Off state leakage current (Max.)		1μA	1μA	1μA
Input	LED forward current		50mA	50mA	50mA
	LED reverse voltage		5V	5V	5V
	Peak forward current		1A	1A	1A
	Power dissipation		75mW	75mW	75mW
	LED operate current	Typ.	0.9mA	1.1mA	0.8mA
		Max.	3 mA	3 mA	10 mA
	LED turn off current	Min.	0.4mA	0.3mA	0.3mA
		Typ.	0.8mA	1 mA	0.7mA
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)	1.13V (1.32V at IF = 50mA)	1.17V (1.35V at IF = 50mA)
		Max.	1.5V	1.5V	1.5V
Turn on time		Typ.	0.28ms (N.O.) , 0.43ms (N.C.)	0.7 ms	2.0ms
		Max.	1ms	2.0 ms	5.0ms
Turn off time		Typ.	0.04ms (N.O.) , 0.3ms (N.C.)	0.07ms	0.1ms
		Max.	1ms	1 ms	1 ms
Total power dissipation			850mW	450mW	550mW
I/O isolation voltage			1,500Vrms	1,500Vrms	1,500Vrms
I/O capacitance		Typ.	0.8pF	0.8pF	0.8pF
		Max.	1.5pF	1.5pF	1.5pF
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ	1,000MΩ
Safety standards			UL/C-UL	UL/C-UL, BSI	UL/C-UL, VDE
Mass (weight) (approx.)			0.5g	0.084g	0.453g

GU General use & wide variation

Product name			GU SOP Current Limiting	GU Current Limiting
Contact configuration			1 Form A	1 Form A
Number of terminals			4pin	4pin
Appearance configuration *Standoff height included mm				
Features			Miniature SOP4-pin type with current limiting	DIP4-pin type with current limiting and reinforced insulation
Part No.			**AQY210LS**	**AQY210HL**
Output	Load voltage		AC/DC	AC/DC
		Peak AC	350V	350V
		DC	350V	350V
	Continuous load current	1A		
		0.5A	0.12A	0.12A
	Peak load current		0.18A (Output Limit Current [Typ.])	0.18A (Output Limit Current [Typ.])
	Power dissipation		400mW	500mW
	On resistance	Typ.	20Ω	20Ω
		Max.	25Ω	25Ω
	Output capacitance (Typ.)		45pF	45pF
	Off state leakage current (Max.)		1μA	1μA
Input	LED forward current		50mA	50mA
	LED reverse voltage		5V	5V
	Peak forward current		1A	1A
	Power dissipation		75mW	75mW
	LED operate current	Typ.	1.2mA	1.2mA
		Max.	3 mA	3 mA
	LED turn off current	Min.	0.4mA	0.4mA
		Typ.	1.1mA	1.1mA
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)	1.25V (1.14V at IF = 5mA)
		Max.	1.5V	1.5V
Turn on time		Typ.	0.5 ms	0.5 ms
		Max.	2 ms	2 ms
Turn off time		Typ.	0.08ms	0.08ms
		Max.	1 ms	1 ms
Total power dissipation			450mW	550mW
I/O isolation voltage			1,500Vrms	5,000Vrms
I/O capacitance		Typ.	0.8pF	0.8pF
		Max.	1.5pF	1.5pF
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ
Safety standards			UL/C-UL, BSI	
Mass (weight) (approx.)			0.084g	0.19g

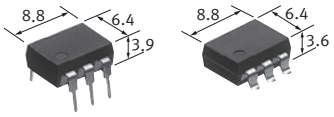
GE General use and Economical

GU GE CC RF HE HF HS PD Power

Product name			GE				
Contact configuration			1 Form A				
Number of terminals			4pin				
Appearance configuration *Standoff height included mm							
Features			DIP4-pin type with reinforced insulation				
Part No.			**AQY211EH**	**AQY212EH**	**AQY210EH**	**AQY214EH**	**AQY216EH**
Output	Load voltage		AC/DC				
		Peak AC	30V	60V	350V	400V	600V
		DC	30V	60V	350V	400V	600V
	Continuous load current						
	Peak load current		3A	1.5A	0.4A	0.3A	0.15A
	Power dissipation		500mW				
	On resistance	Typ.	0.25Ω	0.85Ω	18Ω	26Ω	52Ω
		Max.	0.5 Ω	2.5 Ω	25Ω	35Ω	120Ω
	Output capacitance (Typ.)		240pF	80pF	45pF		35pF
	Off state leakage current (Max.)		1μA				
Input	LED forward current		50mA				
	LED reverse voltage		5V				
	Peak forward current		1A				
	Power dissipation		75mW				
	LED operate current	Typ.	1.2mA				
		Max.	3 mA				
	LED turn off current	Min.	0.4mA				
		Typ.	1.1mA				
	LED dropout voltage	Typ.	1.25V (1.14V at I_F = 5mA)				
		Max.	1.5V				
Turn on time		Typ.	1.5ms	1 ms	0.5ms		
		Max.	5 ms	4 ms	2 ms		
Turn off time		Typ.	0.1ms	0.05ms	0.08ms		0.04ms
		Max.	1 ms	1 ms	1 ms		1 ms
Total power dissipation			550mW				
I/O isolation voltage			5,000Vrms				
I/O capacitance		Typ.	0.8pF				
		Max.	1.5pF				
Initial I/O isolation resistance (Min.)			1,000MΩ				
Safety standards			UL/C-UL	UL/C-UL, BSI			
Mass (weight) (approx.)			0.19g				

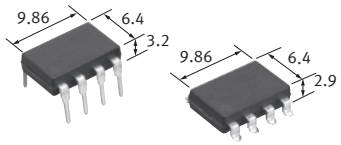
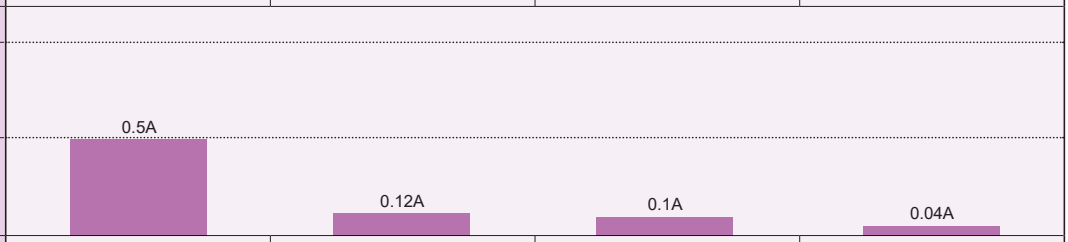
GE General use and Economical

GU GE CC RF HE HF HS PD Power

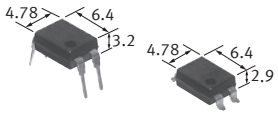
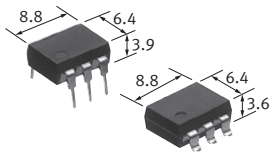
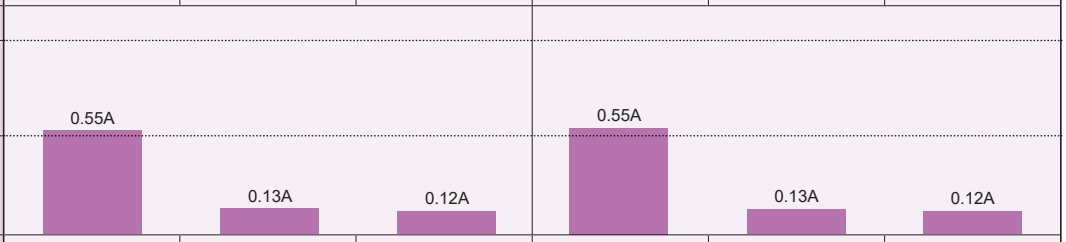
Product name			GE	
Contact configuration			1 Form A	
Number of terminals			6pin	
Appearance configuration *Standoff height included mm				
Features			DIP6-pin type, reinforced insulation available	
Part No.			**AQV210EH**	**AQV214EH**
Output	Load voltage		AC/DC	
		Peak AC	350V	400V
		DC	350V	400V
	Continuous load current *6-pin type: in case of A connection	1A		
		0.5A	0.13A	0.12A
	Peak load current		0.4A	0.3A
	Power dissipation		500mW	
	On resistance *6-pin type: in case of A connection	Typ.	23Ω	30Ω
		Max.	35Ω	50Ω
	Output capacitance (Typ.)		45pF	
	Off state leakage current (Max.)		1μA	
Input	LED forward current		50mA	
	LED reverse voltage		5V	
	Peak forward current		1A	
	Power dissipation		75mW	
	LED operate current	Typ.	1.6mA	
		Max.	3 mA	
	LED turn off current	Min.	0.4mA	
		Typ.	1.5mA	
	LED dropout voltage	Typ.	1.25V (1.14V at I_F = 5mA)	
		Max.	1.5V	
Turn on time		Typ.	0.7 ms	
		Max.	2 ms	
Turn off time		Typ.	0.05ms	
		Max.	1 ms	
Total power dissipation			550mW	
I/O isolation voltage			5,000Vrms	
I/O capacitance		Typ.	0.8pF	
		Max.	1.5pF	
Initial I/O isolation resistance (Min.)			1,000MΩ	
Safety standards			UL/C-UL, BSI	
Mass (weight) (approx.)			0.453g	

GE General use and Economical

GU GE CC RF HE HF HS PD Power

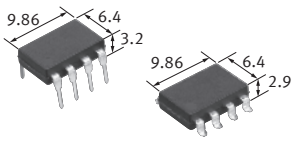
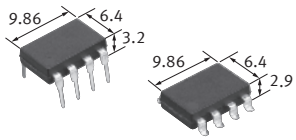
Product name			GE			
Contact configuration			2 Form A			
Number of terminals			8pin			
Appearance configuration *Standoff height included mm						
Features			DIP8-pin type with reinforced insulation			
Part No.			**AQW212EH**	**AQW210EH**	**AQW214EH**	**AQW216EH**
Output	Load voltage		AC/DC			
		Peak AC	60V	350V	400V	600V
		DC	60V	350V	400V	600V
	Continuous load current					
	Peak load current		1.5A	0.36A	0.3A	0.12A
	Power dissipation		800mW			
	On resistance	Typ.	0.83Ω	18Ω	26Ω	52Ω
		Max.	2.5 Ω	25Ω	35Ω	120Ω
	Output capacitance (Typ.)		80pF	45pF		35pF
	Off state leakage current (Max.)		1μA			
Input	LED forward current		50mA			
	LED reverse voltage		5V			
	Peak forward current		1A			
	Power dissipation		75mW			
	LED operate current	Typ.	1.2mA			
		Max.	3 mA			
	LED turn off current	Min.	0.4mA			
		Typ.	1.1mA			
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)			
		Max.	1.5V			
Turn on time		Typ.	1.0ms	0.5ms		
		Max.	4.0ms	2 ms		
Turn off time		Typ.	0.08ms			0.04ms
		Max.	1 ms			1 ms
Total power dissipation			850mW			
I/O isolation voltage			5,000Vrms			
I/O capacitance		Typ.	0.8pF			
		Max.	1.5pF			
Initial I/O isolation resistance (Min.)			1,000MΩ			
Safety standards			UL/C-UL, BSI			
Mass (weight) (approx.)			0.4g			

GE General use and Economical

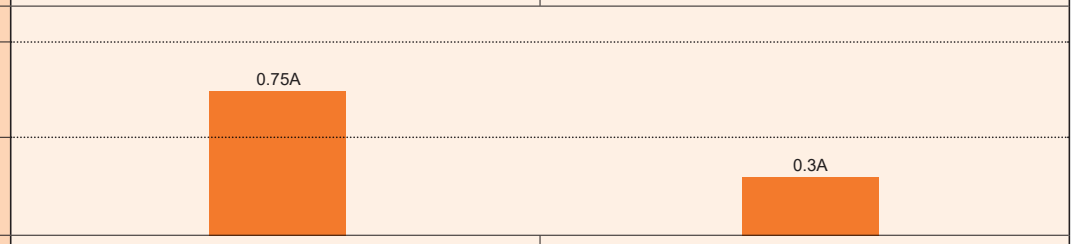
Product name			GE					
Contact configuration			1 Form B			1 Form B		
Number of terminals			4pin			6pin		
Appearance configuration *Standoff height included mm								
Features			Normally closed type with reinforced insulation			Normally closed type with reinforced insulation		
Part No.			AQY412EH	AQY410EH	AQY414EH	AQV412EH	AQV410EH	AQV414EH
Output	Load voltage		AC/DC			AC/DC		
		Peak AC	60V	350V	400V	60V	350V	400V
		DC	60V	350V	400V	60V	350V	400V
	Continuous load current *6-pin type: in case of A connection							
	Peak load current		1.5A	0.4A	0.3A	1.5A	0.4A	0.3A
	Power dissipation		500mW			500mW		
	On resistance *6-pin type: in case of A connection	Typ.	1 Ω	18Ω	26Ω	1 Ω	18Ω	25.2Ω
		Max.	2.5Ω	25Ω	35Ω	2.5Ω	35Ω	50 Ω
	Output capacitance (Typ.)		500pF	110pF	100pF	500pF	110pF	100pF
	Off state leakage current (Max.)		10μA			10μA		
Input	LED forward current		50mA			50mA		
	LED reverse voltage		5V			5V		
	Peak forward current		1A			1A		
	Power dissipation		75mW			75mW		
	LED operate current	Typ.	1.4mA			1.9mA		
		Max.	3 mA			3 mA		
	LED turn off current	Min.	0.4mA			0.4mA		
		Typ.	1.3mA			1.8mA		
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)			1.25V (1.14V at IF = 5mA)		
		Max.	1.5V			1.5V		
Turn on time		Typ.	3 ms	1 ms	0.8ms	3ms	1.5ms	1.3ms
		Max.	10 ms	3 ms	3 ms	8ms	3 ms	3 ms
Turn off time		Typ.	0.2ms	0.3ms	0.2ms	0.3ms		
		Max.	1 ms	1 ms	1 ms	1.5ms		
Total power dissipation			550mW			550mW		
I/O isolation voltage			5,000Vrms			5,000Vrms		
I/O capacitance		Typ.	0.8pF			0.8pF		
		Max.	1.5pF			1.5pF		
Initial I/O isolation resistance (Min.)			1,000MΩ			1,000MΩ		
Safety standards			UL/C-UL, VDE	UL/C-UL, BSI		UL/C-UL, VDE	UL/C-UL, BSI	
Mass (weight) (approx.)			0.19g			0.453g		

GE General use and Economical

GU GE CC RF HE HF HS PD Power

Product name			GE			
Contact configuration			2 Form B	1 Form A & 1 Form B		
Number of terminals			8pin	8pin		
Appearance configuration *Standoff height included mm						
Features			Normally closed type with reinforced insulation	Both N.O. and N.C. contacts incorporated in a compact DIP8-pin Reinforced insulation		
Part No.			**AQW414EH**	**AQW612EH**	**AQW610EH**	**AQW614EH**
Output	Load voltage		AC/DC	AC/DC		
		Peak AC	400V	60V	350V	400V
		DC	400V	60V	350V	400V
	Continuous load current		1A 0.5A 0.1A	0.5A	0.12A	0.1A
	Peak load current		0.3A	1.5A	0.36A	0.3A
	Power dissipation		800mW	800mW		
	On resistance	Typ.	26Ω	1 Ω	18Ω	26Ω
		Max.	35Ω	2.5Ω	25Ω	35Ω
	Output capacitance (Typ.)		100pF	80pF (N.O.) , 500pF (N.C.)	45pF (N.O.) , 100pF (N.C.)	
	Off state leakage current (Max.)		10μA	1μA (N.O.) , 10μA (N.C.)		
Input	LED forward current		50mA	50mA		
	LED reverse voltage		5V	5V		
	Peak forward current		1A	1A		
	Power dissipation		75mW	75mW		
	LED operate current	Typ.	1.3mA	1.4mA		
		Max.	3 mA	3 mA		
	LED turn off current	Min.	0.4mA	0.4mA		
		Typ.	1.2mA	1.3mA		
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)	1.25V (1.14V at IF = 5mA)		
		Max.	1.5V	1.5V		
Turn on time		Typ.	0.8ms	1ms (N.O.) , 3ms (N.C.)	0.5ms (N.O.) , 1ms (N.C.)	0.5ms (N.O.) , 0.8ms (N.C.)
		Max.	3 ms	4ms (N.O.) , 10ms (N.C.)	3ms	3ms
Turn off time		Typ.	0.2ms	0.05ms (N.O.) , 0.2ms (N.C.)	0.08ms (N.O.) , 0.3ms (N.C.)	0.08ms (N.O.) , 0.2ms (N.C.)
		Max.	1 ms	1ms	1ms	1ms
Total power dissipation			850mW	850mW		
I/O isolation voltage			5,000Vrms	5,000Vrms		
I/O capacitance		Typ.	0.8pF	0.8pF		
		Max.	1.5pF	1.5pF		
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ		
Safety standards			UL/C-UL, BSI	UL/C-UL, VDE	UL/C-UL, BSI	
Mass (weight) (approx.)			0.4g	0.4g		

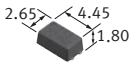
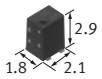
CC Capacitor Coupled isolation

Product name			CC TSON C × R	
Contact configuration			1 Form A	
Number of terminals			4pin	
Appearance configuration *Standoff height included mm				
Features			Super miniature TSON package, Capacitor Coupled isolation type	
Part No.			**AQY2C1R6P**	**AQY2C1R2P**
Output	Load voltage		AC/DC	
		Peak AC	30V	40V
		DC	30V	40V
	Continuous load current			
	Peak load current		1.5A	0.75A
	Power dissipation		250mW	
	On resistance	Typ.	0.2Ω (V_{IN} = 5V)	0.8Ω (V_{IN} = 5V)
		Max.	0.4Ω (V_{IN} = 5V)	1.5Ω (V_{IN} = 5V)
	Output capacitance (Typ.)		40pF	14.5pF
	Off state leakage current (Max.)		10nA	
Input	Input voltage		5.5V	
	Input reverse voltage		0.2V	
	Power dissipation		1.2mW	
	Operate voltage	Typ.	1.7V	1.8V
		Max.	2.5V	2.5V
	Turn off voltag	Min.	0.5V	0.5V
		Typ.	1.5V	1.4V
	Input current	Typ.	0.09mA (V_{IN} = 5V)	
		Max.	0.2 mA (V_{IN} = 5V)	
Turn on time		Typ.	0.12ms (V_{IN} = 5V)	0.06ms (V_{IN} = 5V)
		Max.	0.5 ms (V_{IN} = 5V)	0.5 ms (V_{IN} = 5V)
Turn off time		Typ.	0.1 ms (V_{IN} = 5V)	0.06ms (V_{IN} = 5V)
		Max.	0.5 ms (V_{IN} = 5V)	0.5 ms (V_{IN} = 5V)
Total power dissipation			250mW	
I/O isolation voltage			200Vrms	
I/O capacitance		Typ.	1.2pF	
		Max.	3 pF	
Initial I/O isolation resistance (Min.)			—	
Safety standards			—	
Mass (weight) (approx.)			0.007g	

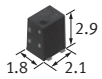
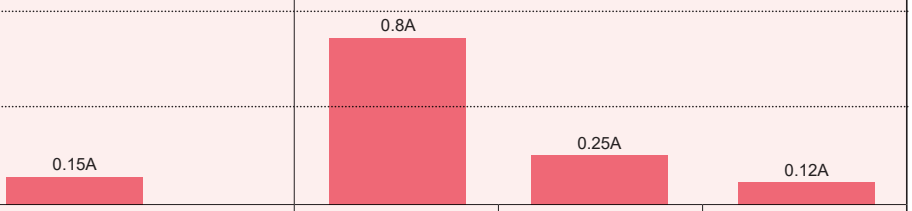
CC Capacitor Coupled isolation

Product name			CC TSON C × R		
Contact configuration			1 Form A		
Number of terminals			4pin		
Appearance configuration *Standoff height included mm					
Features			Super miniature TSON package, Capacitor Coupled isolation type		
Part No.			NEW AQY2C2R2P	NEW AQY2C1R3P	NEW AQY2C5R3P
Output	Load voltage		AC/DC		
		Peak AC	60V	40V	100V
		DC	60V	40V	100V
	Continuous load current		1A 0.5A 0.3A	0.1A	0.12A
	Peak load current		0.9A	0.3A	0.3A
	Power dissipation		250mW		
	On resistance	Typ.	0.9Ω (VIN = 5V)	10.5Ω (VIN = 5V)	9Ω (VIN = 5V)
		Max.	1.5Ω (VIN = 5V)	15 Ω (VIN = 5V)	14Ω (VIN = 5V)
	Output capacitance (Typ.)		27pF	1.2pF	5.8pF
	Off state leakage current (Max.)		10nA		
Input	Input voltage		5.5V		
	Input reverse voltage		0.2V		
	Power dissipation		1.2mW		
	Operate voltage	Typ.	1.7V	2.2V	2.0V
		Max.	2.5V	2.5V	2.5V
	Turn off voltag	Min.	0.5V	0.5V	0.5V
		Typ.	1.4V	1.5V	1.5V
	Input current	Typ.	0.09mA (VIN = 5V)		
		Max.	0.2 ms (VIN = 5V)		
Turn on time		Typ.	0.08ms (VIN = 5V)	0.01ms (VIN = 5V)	0.03ms (VIN = 5V)
		Max.	0.5 ms (VIN = 5V)	0.1 ms (VIN = 5V)	0.2 ms (VIN = 5V)
Turn off time		Typ.	0.1 ms (VIN = 5V)	0.02ms (VIN = 5V)	0.04ms (VIN = 5V)
		Max.	0.5 ms (VIN = 5V)	0.2 ms (VIN = 5V)	0.5 ms (VIN = 5V)
Total power dissipation			250mW		
I/O isolation voltage			200Vrms		
I/O capacitance		Typ.	1.2pF		
		Max.	3 pF		
Initial I/O isolation resistance (Min.)			—		
Safety standards			—		
Mass (weight) (approx.)			0.007g		

RF Low on-resistance & low output capacitance

Product name			RF SSOP C × R3	RF VSSOP C × R3
Contact configuration			1 Form A	1 Form A
Number of terminals			4pin	4pin
Appearance configuration *Standoff height included mm				
Features			C×R3 type, SSOP package, 20 V load voltage	C×R3 type, VSSOP package, 20 V load voltage
Part No.			**AQY221N5V**	**AQY221N5T**
Output	Load voltage		AC/DC	AC/DC
		Peak AC	20V	20V
		DC	20V	20V
	Continuous load current	1A		
		0.5A	0.18A	0.18A
	Peak load current		0.3A	—
	Power dissipation		250mW	250mW
	On resistance	Typ.	2.8Ω	2.8Ω
		Max.	4.5Ω	4.5Ω
	Output capacitance (Typ.)		1.1pF	1.1pF
	Off state leakage current (Max.)		10nA	10nA
Input	LED forward current		50mA	50mA
	LED reverse voltage		5V	5V
	Peak forward current		1A	1A
	Power dissipation		75mW	75mW
	LED operate current	Typ.	0.8mA	0.7mA
		Max.	3 mA	3 mA
	LED turn off current	Min.	0.2mA	0.2mA
		Typ.	0.7mA	0.6mA
	LED dropout voltage	Typ.	1.35V (1.14V at IF = 5mA)	1.14V (1.35V at IF = 50mA)
		Max.	1.5V	1.5V
Turn on time		Typ.	0.02ms	0.02ms
		Max.	0.2 ms	0.2 ms
Turn off time		Typ.	0.01ms	0.01ms
		Max.	0.2 ms	0.2 ms
Total power dissipation			300mW	300mW
I/O isolation voltage			1,500Vrms	200Vrms
I/O capacitance		Typ.	0.8pF	0.4pF
		Max.	1.5pF	1.5pF
Initial I/O isolation resistance (Min.)			1,000MΩ	—
Safety standards			—	—
Mass (weight) (approx.)			0.064g	0.026g

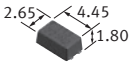
RF Low on-resistance & low output capacitance

Product name			RF VSSOP C × R5	RF VSSOP C × R10		
Contact configuration			1 Form A	1 Form A		
Number of terminals			4pin	4pin		
Appearance configuration *Standoff height included mm						
Features			4.6 mm2 mounting area C×R 10: 30 V/40 V load voltage C×R 5: 25 V load voltage			
Part No.			**AQY221N3T**	**AQY221R6T**	**AQY221R2T**	**AQY221N2T**
Output	Load voltage		AC/DC	AC/DC		
		Peak AC	25V	30V	40V	
		DC	25V	30V	40V	
	Continuous load current		1A 0.5A 			
	Peak load current		—	1.5A	0.75A	—
	Power dissipation		250mW	250mW		
	On resistance	Typ.	5.5Ω	0.18Ω	0.8 Ω	9.5Ω
		Max.	7.5Ω	0.35Ω	1.25Ω	12.5Ω
	Output capacitance (Typ.)		1.1pF	37.5pF	14pF	1.1pF
	Off state leakage current (Max.)		10nA	10nA		
Input	LED forward current		50mA	50mA		
	LED reverse voltage		5V	5V		
	Peak forward current		1A	1A		
	Power dissipation		75mW	75mW		
	LED operate current	Typ.	0.7mA	0.5mA	0.5mA	0.7mA
		Max.	3 mA	3 mA	3 mA	3 mA
	LED turn off current	Min.	0.2mA	0.1mA	0.1mA	0.2mA
		Typ.	0.6mA	0.4mA	0.4mA	0.6mA
	LED dropout voltage	Typ.	1.14V	1.14V		
		Max.	1.5 V	1.5 V		
Turn on time		Typ.	0.01ms	0.1 ms	0.1 ms	0.01ms
		Max.	0.2 ms	0.5 ms	0.5 ms	0.2 ms
Turn off time		Typ.	0.03ms	0.06ms	0.06ms	0.03ms
		Max.	0.2 ms	0.2 ms	0.2 ms	0.2 ms
Total power dissipation			300mW	300mW		
I/O isolation voltage			200Vrms	200Vrms		
I/O capacitance		Typ.	0.4pF	0.4pF		
		Max.	1.5pF	1.5pF		
Initial I/O isolation resistance (Min.)			—	—		
Safety standards			—	—		
Mass (weight) (approx.)			0.026g	0.026g		

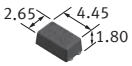
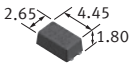
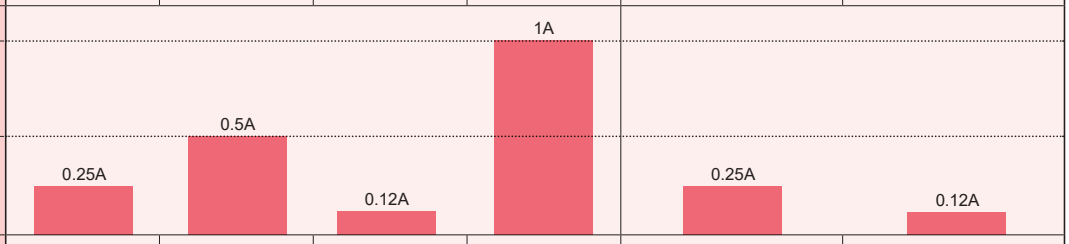
PhotoMOS® Selector Chart

RF Low on-resistance & low output capacitance

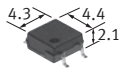
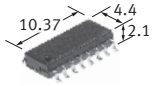
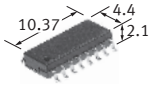
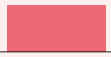
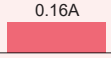
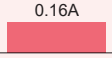
GU GE CC **RF** HE HF HS PD Power

Product name			RF SON C × R5	RF SON C × R10		RF SSOP C × R5
Contact configuration			1 Form A	1 Form A		1 Form A
Number of terminals			4pin	4pin		4pin
Appearance configuration *Standoff height included mm						
Features			Micro-miniature SON package C×R10: 40V load voltage C×R5: 25V load voltage			Miniature SSOP C×R10: 30 V/40 V load voltage C×R5: 25 V load voltage
Part No.			**AQY221N3M**	**AQY221R2M**	**AQY221N2M**	**AQY221N3V**
Output	Load voltage		AC/DC	AC/DC		AC/DC
		Peak AC	25V	40V	40V	25V
		DC	25V	40V	40V	25V
	Continuous load current		1A 0.5A 0.15A	0.25A 0.12A		0.15A
	Peak load current		—	0.75A	—	0.4A
	Power dissipation		250mW	250mW		250mW
	On resistance	Typ.	5.5Ω	0.8 Ω	9.5Ω	5.5Ω
		Max.	7.5Ω	1.25Ω	12.5Ω	7.5Ω
	Output capacitance (Typ.)		1.1pF	14pF	1.1pF	1pF
	Off state leakage current (Max.)		10nA	10nA		10nA
Input	LED forward current		50mA	50mA		50mA
	LED reverse voltage		5V	5V		5V
	Peak forward current		1A	1A		1A
	Power dissipation		75mW	75mW		75mW
	LED operate current	Typ.	1 mA	0.8mA	1 mA	1 mA
		Max.	3 mA	3 mA	3 mA	3 mA
	LED turn off current	Min.	0.2mA	0.1mA	0.2mA	0.2mA
		Typ.	0.9mA	0.7mA	0.9mA	0.9mA
	LED dropout voltage	Typ.	1.35V (1.14V at IF = 5mA)	1.35V (1.14V at IF = 5mA)		1.35V (1.14V at IF = 5mA)
		Max.	1.5V	1.5V		1.5V
Turn on time		Typ.	0.02ms	0.2 ms	0.02ms	0.02ms
		Max.	0.2 ms	0.5 ms	0.2 ms	0.2 ms
Turn off time		Typ.	0.02ms	0.04ms	0.02ms	0.02ms
		Max.	0.2 ms	0.2 ms	0.2 ms	0.2 ms
Total power dissipation			300mW	300mW		300mW
I/O isolation voltage			200Vrms	200Vrms		1,500Vrms
I/O capacitance		Typ.	0.8pF	0.8pF		0.8pF
		Max.	1.5pF	1.5pF		1.5pF
Initial I/O isolation resistance (Min.)			—	—		1,000MΩ
Safety standards			—	—		—
Mass (weight) (approx.)			0.024g	0.024g		0.064g

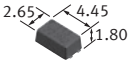
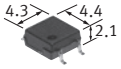
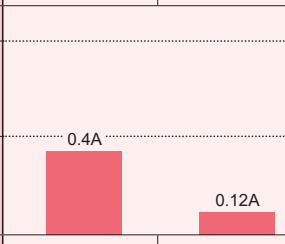
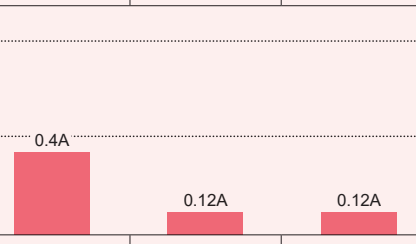
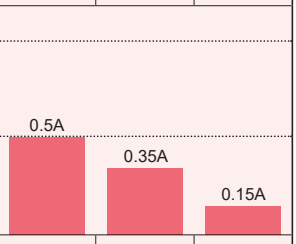
RF Low on-resistance & low output capacitance

Product name			RF SSOP C × R10				RF SSOP C × R10 Voltage-sensitive	
Contact configuration			1 Form A				1 Form A	
Number of terminals			4pin				4pin	
Appearance configuration *Standoff height included mm								
Features			Miniature SSOP C×R10: 30 V/40 V load voltage C×R5: 25 V load voltage				Space-saving SSOP 1 Form A type with built-in registor 40V load voltage	
Part No.			**AQY221R2V**	**AQY221R4V**	**AQY221N2V**	**AQY221R6V**	**AQY221FR2V**	**AQY221FN2V**
Output	Load voltage		AC/DC				AC/DC	
		Peak AC	40V	40V	40V	30V	40V	40V
		DC	40V	40V	40V	30V	40V	40V
	Continuous load current							
	Peak load current		0.75A	1A	0.3A	1.5A	0.75A	0.2A
	Power dissipation		250mW				250mW	
	On resistance	Typ.	0.75Ω	0.55Ω	9.5Ω	0.18Ω	0.75Ω	9.5Ω
		Max.	1.25Ω	1 Ω	12.5Ω	0.35Ω	1.25Ω	12.5Ω
	Output capacitance (Typ.)		12.5pF	24pF	1pF	37.5pF	12.5pF	1pF
	Off state leakage current (Max.)		10nA				10nA	
Input	LED forward current		50mA				Input voltage: 6V	
	LED reverse voltage		5V				Input reverse voltage: 5V	
	Peak forward current		1A				—	
	Power dissipation		75mW				65mW	
	LED operate current	Typ.	0.9mA		1 mA	0.7mA	Operate voltage: 1.3V	
		Max.	3 mA		3 mA	3 mA	Operate voltage: 4 V	
	LED turn off current	Min.	0.1mA		0.2mA	0.1mA	Turn off voltage: 0.8V	
		Typ.	0.8mA		0.9mA	0.6mA	Turn off voltage: 1.3V	
	LED dropout voltage	Typ.	1.35V (1.14V at IF = 5mA)				Input current (Typ.) : 8.5mA (VIN = 5V)	
		Max.	1.5V					
Turn on time		Typ.	0.1ms	0.25ms	0.02ms	0.2 ms	0.05ms	0.01ms
		Max.	0.5ms	0.75ms	0.5 ms	0.5 ms	0.5 ms	0.5 ms
Turn off time		Typ.	0.08ms		0.02ms	0.07ms	0.06ms	0.03ms
		Max.	0.2 ms		0.2 ms	0.2 ms	0.2 ms	0.2 ms
Total power dissipation			300mW				300mW	
I/O isolation voltage			1,500Vrms				500Vrms	
I/O capacitance		Typ.	0.8pF				0.8pF	
		Max.	1.5pF				1.5pF	
Initial I/O isolation resistance (Min.)			1,000MΩ				1,000MΩ	
Safety standards			—				—	
Mass (weight) (approx.)			0.064g				0.064g	

RF Low on-resistance & low output capacitance

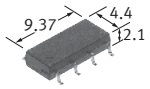
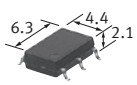
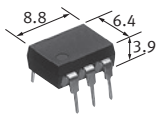
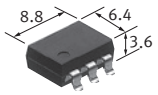
Product name			RF SOP C × R10		RF SOP C × R10		RF SOP C×R10 Voltage-sensitive	
Contact configuration			1 Form A		4 Form A		4 Form A	
Number of terminals			4pin		16pin		16pin	
Appearance configuration *Standoff height included mm								
Features			Miniature SOP4-pin C×R10 40V load voltage		Space-saving low C×R type 4 channels in a SOP16-pin package		Space-saving 4-channel type Built-in input resistor	
Part No.			AQY221R2S	AQY221N2S	AQS221R2S	AQS221N2S	AQS221FR2S	AQS221FN2S
Output	Load voltage		AC/DC		AC/DC		AC/DC	
		Peak AC	40V	40V	40V	40V	40V	40V
		DC	40V	40V	40V	40V	40V	40V
	Continuous load current	1A 0.5A						
	Peak load current		0.75A	0.3A	0.2A	0.12A	0.2A	0.12A
	Power dissipation		300mW		600mW		600mW	
	On resistance	Typ.	0.8 Ω	9.5Ω	0.8 Ω	9.5Ω	0.75Ω	9.5Ω
		Max.	1.25Ω	12.5Ω	1.25Ω	12.5Ω	1.25Ω	12.5Ω
	Output capacitance (Typ.)		13pF	1pF	13pF	1pF	12.5pF	1pF
	Off state leakage current (Max.)		10nA		10nA		10nA	
Input	LED forward current		50mA		50mA		Input voltage: 6V	
	LED reverse voltage		5V		5V		Input reverse voltage: 5V	
	Peak forward current		1A		1A		—	
	Power dissipation		75mW		75mW		260mW (65mW per channel)	
	LED operate current	Typ.	0.5mA	0.9 mA	0.5mA	0.9 mA	Operate voltage: 1.3V	
		Max.	3 mA	3 mA	3 mA	3 mA	Operate voltage: 4V	
	LED turn off current	Min.	0.1mA	0.2 mA	0.1mA	0.1 mA	Turn off voltage: 0.8V	
		Typ.	0.4mA	0.85mA	0.4mA	0.85mA	Turn off voltage: 1.3V	
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)		1.25V (1.14V at IF = 5mA)		Input current (Typ.) : 8.5mA (VIN = 5V)	
		Max.	1.5V		1.5V			
Turn on time		Typ.	0.1 ms	0.03ms	0.15ms	0.03vms	0.07ms	0.02ms
		Max.	0.5 ms	0.5 ms	0.5 ms	0.2 ms	0.5 ms	0.5 ms
Turn off time		Typ.	0.06ms	0.03ms	0.06ms	0.03ms	0.07ms	0.02ms
		Max.	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms
Total power dissipation			350mW		650mW		650mW	
I/O isolation voltage			500Vrms	1,500Vrms	500Vrms		500Vrms	
I/O capacitance		Typ.	0.8pF		0.8pF		0.8pF	
		Max.	1.5pF		1.5pF		1.5pF	
Initial I/O isolation resistance (Min.)			1,000MΩ		1,000MΩ		1,000MΩ	
Safety standards			—		—		—	
Mass (weight) (approx.)			0.084g		0.195g		0.195g	

RF Low on-resistance & low output capacitance

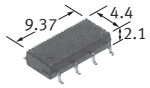
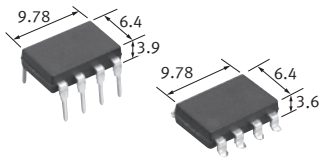
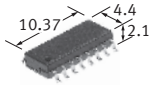
Product name			RF VSSOP C × R		RF SSOP C × R			RF SOP C × R		
Contact configuration			1 Form A		1 Form A			1 Form A		
Number of terminals			4pin		4pin			4pin		
Appearance configuration *Standoff height included mm										
Features			C×R type VSSOP package 60V and 100 V load voltage		C×R type SSOP package 60 V, 80 V and 100 V load voltage			Miniature SOP4-pin type Low C R 60V/80V load voltage		
Part No.			AQY222R2T	AQY225R3T	AQY222R2V	AQY225R2V	AQY225R3V	AQY222R1S	AQY225R1S	AQY225R2S
Output	Load voltage		AC/DC		AC/DC			AC/DC		
		Peak AC	60V	100V	60V	80V	100V	60V	80V	80V
		DC	60V	100V	60V	80V	100V	60V	80V	80V
	Continuous load current		1A 0.5A 		1A 0.5A 			1A 0.5A 		
	Peak load current		1.2A	0.3A	1.2A	0.3A	0.3A	1A	0.7A	0.45A
	Power dissipation		250mW		250mW			300mW		
	On resistance	Typ.	0.8 Ω	8.8Ω	0.8 Ω	10.5Ω	8.8Ω	0.8Ω	0.8Ω	10.5Ω
		Max.	1.25Ω	14 Ω	1.25Ω	15 Ω	14 Ω	1.2Ω	1.2Ω	15 Ω
	Output capacitance (Typ.)		27pF	5.8pF	27pF	4.5pF	5.8pF	24.5pF	37.5pF	4.5pF
	Off state leakage current (Max.)		10nA		10nA			10nA		
Input	LED forward current		50mA		50mA			50mA		
	LED reverse voltage		5V		5V			5V		
	Peak forward current		1A		1A			1A		
	Power dissipation		75mW		75mW			75mW		
	LED operate current	Typ.	0.4 mA		0.5 mA			0.5 mA		
		Max.	3 mA		3 mA			3 mA		
	LED turn off current	Min.	0.1 mA		0.1 mA			0.1 mA		
		Typ.	0.35mA		0.45mA			0.45mA		
	LED dropout voltage	Typ.	1.14V (1.35V at IF = 50mA)		1.32V (1.14V at IF = 5mA)			1.32V (1.14V at IF = 5mA)		
		Max.	1.5V		1.5V			1.5V		
Turn on time		Typ.	0.12ms	0.04ms	0.15ms	0.05ms		0.15ms	0.25ms	0.05ms
		Max.	0.5 ms	0.5 ms	0.5 ms	0.5 ms		0.5 ms	0.75ms	0.5 ms
Turn off time		Typ.	0.08ms	0.05ms	0.08ms	0.05ms		0.06ms	0.08ms	0.05ms
		Max.	0.2 ms	0.2 ms	0.2 ms	0.2 ms		0.2 ms	0.2 ms	0.2 ms
Total power dissipation			300mW		300mW			350mW		
I/O isolation voltage			200Vrms		1,500Vrms			1,500Vrms		
I/O capacitance		Typ.	0.8pF		0.8pF			0.8pF		
		Max.	1.5pF		1.5pF			1.5pF		
Initial I/O isolation resistance (Min.)			—		1,000MΩ			1,000MΩ		
Safety standards			—		—			—	UL/C-UL	—
Mass (weight) (approx.)			0.026g		0.064g			0.084g		

PhotoMOS® Selector Chart

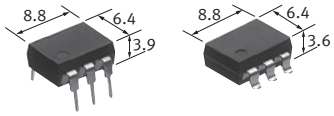
RF Low on-resistance & low output capacitance

Product name			RF SOP C × R	RF SOP Low on-resistance		RF Low on-resistance	
Contact configuration			2 Form A	1 Form A		1 Form A	
Number of terminals			8pin	6pin		6pin	
Appearance configuration *Standoff height included mm						 	
Features			Miniature SOP8-pin type Low C×R High load voltage of 250V	Miniature SOP6-pin type Low on-resistance 200V/400V load voltage		DIP6-pin type featuring low on-resistance 200V/400V load voltage	
Part No.			**AQW223R2S**	**AQV227NS**	**AQV224NS**	**AQV227N**	**AQV224N**
Output	Load voltage		AC/DC	AC/DC		AC/DC	
		Peak AC	250V	200V	400V	200V	400V
		DC	250V	200V	400V	200V	400V
	Continuous load current *6-pin type: in case of A connection	1A / 0.5A	0.14A	0.05A	0.04A	0.07A	0.05A
	Peak load current		0.42A	0.15A	0.12A	0.21A	0.15A
	Power dissipation		600mW	450mW		360mW	
	On resistance *6-pin type: in case of A connection	Typ.	11Ω	30Ω	70Ω	30Ω	70Ω
		Max.	15Ω	50Ω	100Ω	50Ω	100Ω
	Output capacitance (Typ.)		33pF	10pF		10pF	
	Off state leakage current (Max.)		10nA	10nA		10nA	
Input	LED forward current		50mA	50mA		50mA	
	LED reverse voltage		5V	5V		5V	
	Peak forward current		1A	1A		1A	
	Power dissipation		75mW	75mW		75mW	
	LED operate current	Typ.	0.5 mA	0.7 mA		0.9 mA	
		Max.	3 mA	3 mA		3 mA	
	LED turn off current	Min.	0.1 mA	0.4 mA		0.4 mA	
		Typ.	0.45mA	0.65mA		0.85mA	
	LED dropout voltage	Typ.	1.32V (1.14V at IF = 5mA)	1.25V (1.14V at IF = 5mA)		1.25V (1.14V at IF = 5mA)	
		Max.	1.5V	1.5V		1.5V	
Turn on time		Typ.	0.15ms	0.12ms	0.1ms	0.2 ms	
		Max.	0.5 ms	0.5 ms	0.5ms	0.5 ms	
Turn off time		Typ.	0.05ms	0.05ms		0.08ms	
		Max.	0.2 ms	0.2 ms		0.2 ms	
Total power dissipation			650mW	500mW		410mW	
I/O isolation voltage			1,500Vrms	1,500Vrms		1,500Vrms	
I/O capacitance		Typ.	0.8pF	0.8pF		0.8pF	
		Max.	1.5pF	1.5pF		1.5pF	
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ		1,000MΩ	
Safety standards			—	UL/C-UL		UL/C-UL	
Mass (weight) (approx.)			0.195g	0.125g		0.453g	

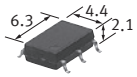
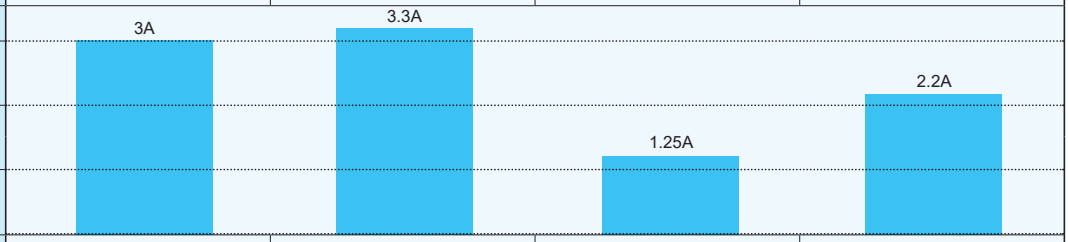
RF Low on-resistance & low output capacitance

Product name			RF SOP Low on-resistance	RF Low on-resistance		RF SOP C × R
Contact configuration			2 Form A	2 Form A		4 Form A
Number of terminals			8pin	8pin		16pin
Appearance configuration *Standoff height included mm						
Features			Miniature SOP8-pin type Low on-resistance 200V load voltage	DIP8-pin type featuring low on-resistance 200V/400V load voltage		Space-saving SOP16-pin type Low on-resistance 80V load voltage
Part No.			**AQW227NS**	**AQW227N**	**AQW224N**	**AQS225R2S**
Output	電源		AC/DC	AC/DC		AC/DC
	Load voltage	Peak AC	200V	200V	400V	80V
		DC	200V	200V	400V	80V
	Continuous load current		1A 0.5A 0.04A	0.05A	0.04A	0.07A
	Peak load current		0.15A	0.15A	0.12A	0.2A
	Power dissipation		600mW	800mW		600mW
	On resistance	Typ.	30Ω	30Ω	70 Ω	10.5Ω
		Max.	50Ω	50Ω	100Ω	15 Ω
	Output capacitance (Typ.)		10pF	10pF		4.5pF
	Off state leakage current (Max.)		10nA	10nA		10nA
Input	LED forward current		50mA	50mA		50mA
	LED reverse voltage		5V	5V		5V
	Peak forward current		1A	1A		1A
	Power dissipation		75mW	75mW		75mW
	LED operate current	Typ.	0.7 mA	0.9mA		0.9 mA
		Max.	3 mA	3 mA		3 mA
	LED turn off current	Min.	0.4 mA	0.4mA		0.3 mA
		Typ.	0.65mA	0.8mA		0.85mA
	LED dropout voltage	Typ.	1.25V (1.14V at I_F = 5mA)	1.25V (1.14V at I_F = 5mA)		1.25V (1.14V at I_F = 5mA)
		Max.	1.5V	1.5V		1.5V
Turn on time		Typ.	0.25ms	0.2 ms		0.04ms
		Max.	0.5 ms	0.5 ms		0.3 ms
Turn off time		Typ.	0.08ms	0.08ms		0.07ms
		Max.	0.2 ms	0.2 ms		0.2 ms
Total power dissipation			650mW	850mW		650mW
I/O isolation voltage			1,500Vrms	1,500Vrms		1,500Vrms
I/O capacitance		Typ.	0.8pF	0.8pF		0.8pF
		Max.	1.5pF	1.5pF		1.5pF
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ		1,000MΩ
Safety standards			UL/C-UL	UL/C-UL		—
Mass (weight) (approx.)			0.195g	0.5g		0.195g

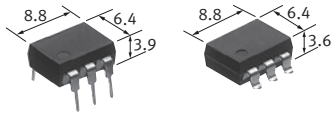
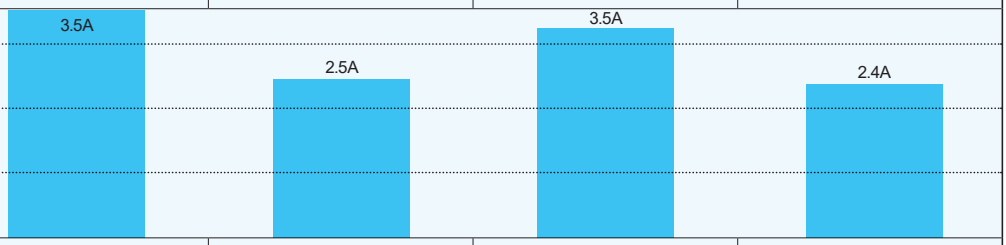
HE Low on-resistance & Economical

Product name			HE									
Contact configuration			1 Form A									
Number of terminals			6pin									
Appearance configuration *Standoff height included mm												
Features			DIP6-pin type with low on-resistance and reinforced insulation									
Part No.			AQV251	AQV252	AQV255	AQV257	AQV253	AQV254	AQV259	AQV258	AQV253H	AQV254H	AQV256H
Output	Load voltage		AC/DC									
		Peak AC	40V	60V	100V	200V	250V	400V	1,000V	1,500V	250V	400V	600V
		DC	40V	60V	100V	200V	250V	400V	1,000V	1,500V	250V	400V	600V
	Continuous load current *6-pin type: in case of A connection		1A 0.5A 0.5A	0.4A	0.35A	0.25A	0.2A	0.15A	0.03A	0.02A	0.2A	0.15A	0.13A
	Peak load current		1.8A	1.5A	1.0A	0.75A	0.6A	0.5A	0.09A	0.06A	0.6A	0.5A	0.4A
	Power dissipation		360mW									
	On resistance *6-pin type: in case of A connection	Typ.	0.6Ω	0.74Ω	1.8Ω	2.6Ω	5.5Ω	12.4Ω	85Ω	345Ω	5.5Ω	12.4Ω	20Ω
		Max.	1 Ω	1.4Ω	2.5Ω	4 Ω	8 Ω	16 Ω	200Ω	500Ω	8 Ω	16 Ω	30Ω
	Output capacitance (Typ.)		350pF			170pF			80pF		170pF		70pF
	Off state leakage current (Max.)		1μA						10μA		1μA		
Input	LED forward current		50mA									
	LED reverse voltage		5V									
	Peak forward current		1A									
	Power dissipation		75mW									
	LED operate current	Typ.	0.9mA								1.4mA		
		Max.	3 mA								3 mA		
	LED turn off current	Min.	0.4mA								0.4mA		
		Typ.	0.8mA								1.3mA		
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)										
		Max.	1.5V										
Turn on time		Typ.	1.7ms	1.4ms	0.9 ms	1.5ms	0.8ms		0.6 ms	0.35ms	2.4 ms	1.8 ms	1.2 ms
		Max.	3 ms	3 ms	2 ms	3 ms	2 ms		1 ms	1 ms	4 ms	3 ms	3 ms
Turn off time		Typ.	0.07ms		0.09ms	0.1ms	0.06ms	0.05ms	0.04ms	0.04ms	0.06ms	0.05ms	0.06ms
		Max.	0.2 ms		0.2 ms	0.2ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms
Total power dissipation			410mW										
I/O isolation voltage			1,500Vrms								5,000Vrms		
I/O capacitance		Typ.	1.3pF										
		Max.	3 pF										
Initial I/O isolation resistance (Min.)			1,000MΩ										
Safety standards			UL/C-UL							UL/C-UL, VDE	UL/C-UL, BSI		UL/C-UL, VDE
Mass (weight) (approx.)			0.453g										

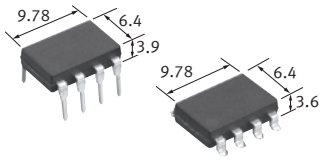
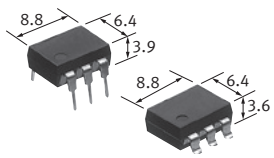
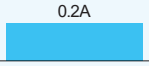
HE Low on-resistance & Economical

Product name			HE SOP High Capacity			
Contact configuration			1 Form A (6 pins)			
Number of terminals			6pin			
Appearance configuration *Standoff height included mm						
Features			Miniature SOP6-pin type with high capacity of 3A load current			
Part No.			**AQV252G2S**	**AQV252G3S**	**AQV255GS**	**AQV255G3S**
Output	Load voltage		AC/DC			
		Peak AC	50V	60V	80V	100V
		DC	50V	60V	80V	100V
	Continuous load current *6-pin type: in case of A connection					
	Peak load current		6A	10A	3A	6.6A
	Power dissipation		450mW			
	On resistance *6-pin type: in case of A connection	Typ.	0.04Ω	0.033Ω	0.09Ω	0.07Ω
		Max.	0.07Ω	0.06 Ω	0.15Ω	0.12Ω
	Output capacitance (Typ.)		360pF	510pF	300pF	430pF
	Off state leakage current (Max.)		1μA			
Input	LED forward current		50mA			
	LED reverse voltage		5V			
	Peak forward current		1A			
	Power dissipation		75mW			
	LED operate current	Typ.	0.6mA	0.5mA	0.5mA	0.5mA
		Max.	3 mA	3 mA	3 mA	3 mA
	LED turn off current	Min.	0.2mA	0.2mA	0.2mA	0.2mA
		Typ.	0.5mA	0.4mA	0.4mA	0.4mA
	LED dropout voltage	Typ.	1.32V (1.14V at I_F = 5mA)			
		Max.	1.5V			
Turn on time		Typ.	1.5 ms	1.8 ms	1.3ms	1.8 ms
		Max.	5.0 ms	5 ms	5.0ms	5 ms
Turn off time		Typ.	0.08ms	0.15ms	0.1ms	0.15ms
		Max.	0.5 ms	0.5 ms	0.5ms	0.5 ms
Total power dissipation			500mW			
I/O isolation voltage			1,500Vrms			
I/O capacitance		Typ.	0.8pF			
		Max.	1.5pF			
Initial I/O isolation resistance (Min.)			1,000MΩ			
Safety standards			UL/C-UL, VDE	UL/C-UL	UL/C-UL, VDE	UL/C-UL
Mass (weight) (approx.)			0.125g			

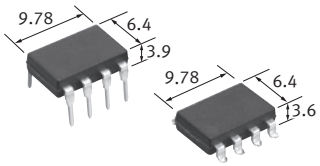
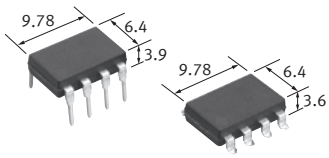
HE Low on-resistance & Economical

Product name			HE High Capacity			
Contact configuration			1 Form A			
Number of terminals			6pin			
Appearance configuration *Standoff height included mm						
Features			Capable of 2A to 3A high-frequency load			
Part No.			**AQV251G**	**AQV252G**	**AQV252G3**	**AQV255G3**
Output	Load voltage		AC/DC			
		Peak AC	30V	60V	60V	100V
		DC	30V	60V	60V	100V
	Continuous load current *6-pin type: in case of A connection					
	Peak load current		6.0A	6.0A	10A	7.0A
	Power dissipation		600mW			
	On resistance *6-pin type: in case of A connection	Typ.	0.035Ω	0.08Ω	0.033Ω	0.07Ω
		Max.	0.08 Ω	0.12Ω	0.06 Ω	0.12Ω
	Output capacitance (Typ.)		330pF	240pF	510pF	430pF
	Off state leakage current (Max.)		1μA			
Input	LED forward current		50mA			
	LED reverse voltage		5V			
	Peak forward current		1A			
	Power dissipation		75mW			
	LED operate current	Typ.	0.55mA	0.5mA	0.5mA	0.5mA
		Max.	3 mA	3 mA	3 mA	3 mA
	LED turn off current	Min.	0.2mA			
		Typ.	0.45mA		0.4mA	
	LED dropout voltage	Typ.	1.32V (1.14V at I_F = 5mA)			
		Max.	1.5V			
Turn on time		Typ.	1.1ms		1.8ms	
		Max.	5ms			
Turn off time		Typ.	0.1ms	0.25ms	0.15ms	0.15ms
		Max.	0.5ms	0.5 ms	0.5 ms	0.5 ms
Total power dissipation			650mW			
I/O isolation voltage			1,500Vrms			
I/O capacitance		Typ.	0.8pF			
		Max.	1.5pF			
Initial I/O isolation resistance (Min.)			1,000MΩ			
Safety standards			UL/C-UL, VDE		UL/C-UL	UL/C-UL, VDE
Mass (weight) (approx.)			0.453g			

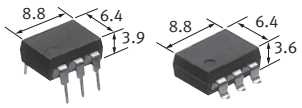
HE Low on-resistance & Economical

Product name			HE			
Contact configuration			2 Form A	1 Form B		
Number of terminals			8pin	6pin		
Appearance configuration *Standoff height included mm						
Features			DIP8-pin type featuring low on-resistance with 400V load voltage	Normally closed DIP6-pin type Low on-resistance with 250V/400V load voltage		
Part No.			**AQW254**	**AQV453**	**AQV454**	**AQV454H**
Output	Load voltage		AC/DC	AC/DC		
		Peak AC	400V	250V	400V	400V
		DC	400V	250V	400V	400V
	Continuous load current *6-pin type: in case of A connection	1A 0.5A				
	Peak load current		0.36A	0.6A	0.5A	
	Power dissipation		800mW	360mW		
	On resistance *6-pin type: in case of A connection	Typ.	10.2Ω	5.5Ω	11Ω	
		Max.	16 Ω	8 Ω	16Ω	
	Output capacitance (Typ.)		170pF	350pF	170pF	
	Off state leakage current (Max.)		1μA	1μA		10μA
Input	LED forward current		50mA	50mA		
	LED reverse voltage		5V	5V		
	Peak forward current		1A	1A		
	Power dissipation		75mW	75mW		
	LED operate current	Typ.	0.9mA	1 mA	0.9mA	1.4mA
		Max.	3 mA	3 mA	3 mA	3 mA
	LED turn off current	Min.	0.4mA	0.4mA	0.4mA	0.4mA
		Typ.	0.8mA	0.9mA	0.8mA	1.3mA
	LED dropout voltage	Typ.	1.25V (1.14V at IF = 5mA)	1.25V (1.14V at IF = 5mA)		
		Max.	1.5V	1.5V		
Turn on time		Typ.	0.8 ms	1.52ms	1.2 ms	1.8 ms
		Max.	2 ms	3 ms	2 ms	3 ms
Turn off time		Typ.	0.04ms	0.4 ms	0.36ms	0.4 ms
		Max.	0.2 ms	1 ms	1 ms	1 ms
Total power dissipation			850mW	410mW		
I/O isolation voltage			1,500Vrms	1,500Vrms		5,000Vrms
I/O capacitance		Typ.	0.8pF	1.3pF		
		Max.	1.5pF	3 pF		
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ		
Safety standards			UL/C-UL	UL/C-UL		UL/C-UL, BSI
Mass (weight) (approx.)			0.5g	0.453g		

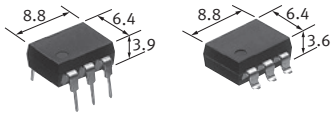
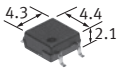
HE Low on-resistance & Economical

Product name			HE	
Contact configuration			2 Form B	1 Form A & 1 Form B
Number of terminals			8pin	8pin
Appearance configuration *Standoff height included mm				
Features			Normally closed (2 Form B) DIP6-pin type Low on-resistance with 400V load voltage	Both 1 Form A and 1 Form B contacts incorporated in a compact DIP8-pin with low on-resistance
Part No.			**AQW454**	**AQW654**
Output	Load voltage		AC/DC	AC/DC
		Peak AC	400V	400V
		DC	400V	400V
	Continuous load current	1A		
		0.5A		
			0.12A	0.12A
	Peak load current		0.36A	0.36A
	Power dissipation		800mW	800mW
	On resistance	Typ.	11Ω	11Ω
		Max.	16Ω	16Ω
	Output capacitance (Typ.)		170pF	170pF
	Off state leakage current (Max.)		1μA	1μA
Input	LED forward current		50mA	50mA
	LED reverse voltage		5V	5V
	Peak forward current		1A	1A
	Power dissipation		75mW	75mW
	LED operate current	Typ.	0.9mA	0.9mA
		Max.	3 mA	3 mA
	LED turn off current	Min.	0.4mA	0.4mA
		Typ.	0.8mA	0.8mA
	LED dropout voltage	Typ.	1.25V (1.14V at I_F = 5mA)	1.25V (1.14V at I_F = 5mA)
		Max.	1.5V	1.5V
Turn on time		Typ.	1.2 ms	0.8ms (N.O.) , 1.2ms (N.C.)
		Max.	2 ms	2ms
Turn off time		Typ.	0.36ms	0.04ms (N.O.) , 0.36ms (N.C.)
		Max.	1 ms	1ms
Total power dissipation			850mW	850mW
I/O isolation voltage			1,500Vrms	1,500Vrms
I/O capacitance		Typ.	0.8pF	0.8pF
		Max.	1.5pF	1.5pF
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ
Safety standards			UL/C-UL	UL/C-UL
Mass (weight) (approx.)			0.5g	0.5g

HF Low on-resistance

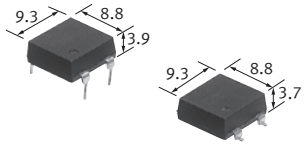
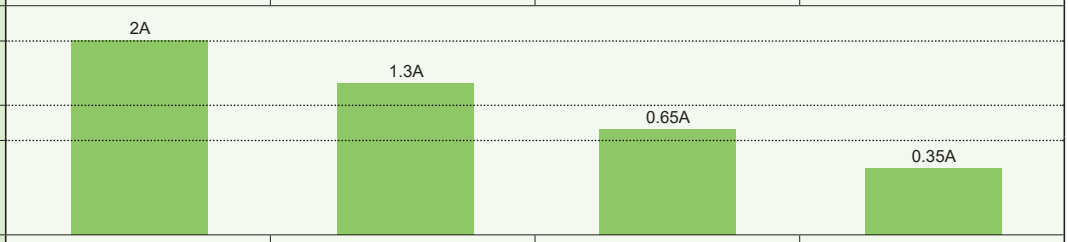
Product name			HF							
Contact configuration			1 Form A							
Number of terminals			6pin							
Appearance configuration *Standoff height included mm										
Features			DIP6-pin type with wide variation Low on-resistance							
Part No.			AQV101	AQV102	AQV103	AQV104	AQV201	AQV202	AQV203	AQV204
Output	Load voltage		DC				AC/DC			
		Peak AC	—				40V	60V	250V	400V
		DC	40V	60V	250V	400V	40V	60V	250V	400V
	Continuous load current *6-pin type: in case of A connection		1A 0.5A 							
	Peak load current		1.8A	1.5A	0.6A	0.5A	1.8A	1.5A	0.6A	0.5A
	Power dissipation		360mW				360mW			
	On resistance *6-pin type: in case of A connection	Typ.	0.3Ω	0.37Ω	2.7Ω	6.3Ω	0.6Ω	0.74Ω	5.5Ω	12.4Ω
		Max.	0.5Ω	0.7 Ω	4 Ω	8 Ω	1 Ω	1.4 Ω	8 Ω	16 Ω
	Output capacitance (Typ.)		600pF		300pF		350pF		170pF	
	Off state leakage current (Max.)		1μA							
Input	LED forward current		50mA							
	LED reverse voltage		10V							
	Peak forward current		1A							
	Power dissipation		150mW							
	LED operate current	Typ.	2.3mA				2.4mA			
		Max.	5 mA				5 mA			
	LED turn off current	Min.	0.8mA							
		Typ.	2.2mA							
	LED dropout voltage	Typ.	2.3V							
		Max.	3 V							
Turn on time		Typ.	0.23ms	0.22ms	0.13ms	0.09ms	0.38ms	0.41ms	0.21ms	0.18ms
		Max.	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms
Turn off time		Typ.	0.07ms			0.08ms			0.07ms	
		Max.	1 ms			1 ms			1 ms	
Total power dissipation			410mW							
I/O isolation voltage			1,500Vrms							
I/O capacitance		Typ.	1.3pF							
		Max.	3 pF							
Initial I/O isolation resistance (Min.)			1,000MΩ							
Safety standards			UL/C-UL							
Mass (weight) (approx.)			0.453g							

HS High sensitivity

Product name			HS	HS SOP		
Contact configuration			1 Form A	1 Form A		
Number of terminals			6pin	4pin		
Appearance configuration *Standoff height included mm						
Features			DIP6-pin type featuring high sensitivity	Recommended LED forward current 2 mA, High Sensitivity (Low current-consumption) Miniature SOP4-pin Type		
Part No.			**AQV234**	**AQY232S**	**AQY230S**	**AQY234S**
Output	Load voltage		AC/DC	AC/DC		
		Peak AC	400V	60V	350V	400V
		DC	400V	60V	350V	400V
	Continuous load current *6-pin type: in case of A connection		1A 0.5A 0.12A	0.5A	0.12A	0.1A
	Peak load current		0.3A	1.5A	0.3A	0.24A
	Power dissipation		500mW	300mW		
	On resistance *6-pin type: in case of A connection	Typ.	30Ω	0.85Ω	19Ω	27Ω
		Max.	50Ω	2.5 Ω	25Ω	35Ω
	Output capacitance (Typ.)		45pF	80pF	32pF	35pF
	Off state leakage current (Max.)		1μA	1μA		
Input	LED forward current		50mA	50mA		
	LED reverse voltage		5V	5V		
	Peak forward current		1A	1A		
	Power dissipation		75mW	75mW		
	LED operate current	Typ.	0.31mA	0.35mA		
		Max.	0.5 mA	0.5 mA		
	LED turn off current	Min.	0.1 mA	0.1 mA		
		Typ.	0.29mA	0.3 mA		
	LED dropout voltage	Typ.	1.25V (1.1V at IF = 2mA)	1.25V (1.1V at IF = 2mA)		
		Max.	1.5V	1.5V		
Turn on time		Typ.	0.89ms	1.5 ms	1.2 ms	0.8 ms
		Max.	2 ms	5 ms	5 ms	5 ms
Turn off time		Typ.	0.22ms	0.15ms	0.1 ms	0.1 ms
		Max.	1 ms	2 ms	2 ms	2 ms
Total power dissipation			550mW	350mW		
I/O isolation voltage			1,500Vrms	1,500Vrms		
I/O capacitance		Typ.	0.8pF	0.8pF		
		Max.	1.5pF	1.5pF		
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ		
Safety standards			UL/C-UL	UL/C-UL, VDE		
Mass (weight) (approx.)			0.453g	0.084g		

PD Flat & power

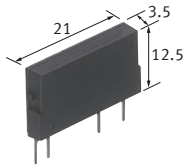
GU GE CC RF HE HF HS PD Power

Product name			PD			
Contact configuration			1 Form A			
Number of terminals			4pin			
Appearance configuration *Standoff height included mm						
Features			Flat Power-DIP4-pin type with high capacity up to 2A load current			
Part No.			**AQY272**	**AQY275**	**AQY277**	**AQY274**
Output	Load voltage		AC/DC			
		Peak AC	60V	100V	200V	400V
		DC	60V	100V	200V	400V
	Continuous load current					
	Peak load current		6A	4A	2A	1A
	Power dissipation		700mW			
	On resistance	Typ.	0.11Ω	0.23Ω	0.7Ω	2.1Ω
		Max.	0.18Ω	0.34Ω	1.1Ω	3.2Ω
	Output capacitance (Typ.)		1,400pF		600pF	
	Off state leakage current (Max.)		10μA			
Input	LED forward current		50mA			
	LED reverse voltage		5V			
	Peak forward current		1A			
	Power dissipation		75mW			
	LED operate current	Typ.	1 mA			
		Max.	3 mA			
	LED turn off current	Min.	0.4mA			
		Typ.	0.9mA			
	LED dropout voltage	Typ.	1.25V (1.16V at IF = 10mA)			
		Max.	1.5V			
Turn on time		Typ.	2.46ms	2.4 ms	1.12ms	1.65ms
		Max.	5 ms	5 ms	5 ms	5 ms
Turn off time		Typ.	0.22ms	0.21ms	0.1 ms	0.08ms
		Max.	3 ms	3 ms	3 ms	3 ms
Total power dissipation			750mW			
I/O isolation voltage			2,500Vrms			
I/O capacitance		Typ.	0.8pF			
		Max.	1.5pF			
Initial I/O isolation resistance (Min.)			1,000MΩ			
Safety standards			UL/C-UL, VDE			
Mass (weight) (approx.)			0.62g			

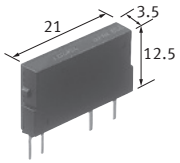
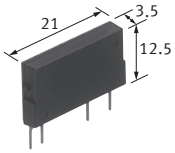
PhotoMOS® Selector Chart

Power Slim & power

GU GE CC RF HE HF HS PD Power

Product name			Power							
Contact configuration			1 Form A							
Number of terminals			4pin							
Appearance configuration *Standoff height included mm										
Features			Slim type with high capacity up to 4A DC load type also available							
Part No.			**AQZ102**	**AQZ105**	**AQZ107**	**AQZ104**	**AQZ202**	**AQZ205**	**AQZ207**	**AQZ204**
Output	Load voltage		DC				AC/DC			
		Peak AC	—				60V	100V	200V	400V
		DC	60V	100V	200V	400V	60V	100V	200V	400V
	Continuous load current		4A, 2.6A, 1.3A, 0.7A, 3A, 2A, 1A, 0.5A							
	Peak load current		9.0A	6.0A	3.0A	1.5A	9.0A	6.0A	3.0A	1.5A
	Power dissipation		1.35W				1.6W			
	On resistance	Typ.	0.05Ω	0.081Ω	0.34Ω	1.06Ω	0.11Ω	0.23Ω	0.7Ω	2.1Ω
		Max.	0.09Ω	0.17 Ω	0.55Ω	1.6 Ω	0.18Ω	0.34Ω	1.1Ω	3.2Ω
	Output capacitance (Typ.)		1,700pF		900pF		1,400pF		600pF	
	Off state leakage current (Max.)		10μA							
Input	LED forward current		50mA							
	LED reverse voltage		5V							
	Peak forward current		1A							
	Power dissipation		75mW							
	LED operate current	Typ.	1mA							
		Max.	3mA							
	LED turn off current	Min.	0.4mA							
		Typ.	0.9mA							
	LED dropout voltage	Typ.	1.25V (1.16V at IF = 10mA)							
		Max.	1.5V							
Turn on time		Typ.	1.66ms	1.89ms	0.83ms	1.01ms	2.46ms	2.4ms	1.12ms	1.65ms
		Max.	5 ms	5 ms	5 ms	5 ms	5 ms	5 ms	5 ms	5 ms
Turn off time		Typ.	0.15ms	0.19ms	0.08ms	0.08ms	0.22ms	0.21ms	0.10ms	0.08ms
		Max.	3 ms	3 ms	3 ms	3 ms	3 ms	3 ms	3 ms	3 ms
Total power dissipation			1.35W				1.6W			
I/O isolation voltage			2,500Vrms							
I/O capacitance		Typ.	0.8pF							
		Max.	1.5pF							
Initial I/O isolation resistance (Min.)			1,000MΩ							
Safety standards			UL/C-UL, VDE							
Mass (weight) (approx.)			1.65g							

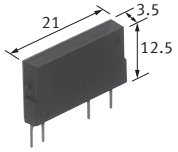
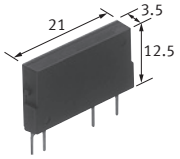
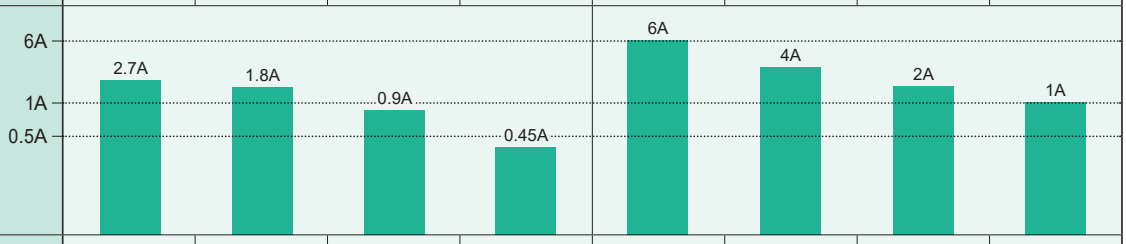
Power **Slim & power**

Product name			Power	Power Voltage-sensitive			
Contact configuration			1 Form B	1 Form A			
Number of terminals			4pin	4pin			
Appearance configuration *Standoff height included mm							
Features			Normally closed type in a slim SIL package Load voltage 400V	Slim and high capacity up to 3.6A Voltage-driven type			
Part No.			**AQZ404**	**AQZ102D**	**AQZ105D**	**AQZ107D**	**AQZ104D**
Output	Load voltage		AC/DC	DC			
		Peak AC	400V	—			
		DC	400V	60V	100V	200V	400V
	Continuous load current		3A 1A 0.5A	3.6A	2.3A	1.1A	0.6A
	Peak load current		1.5A	9A	6A	3A	1.5A
	Power dissipation		1.6W	1.35W			
	On resistance	Typ.	2.8Ω	0.033Ω	0.09Ω	0.33Ω	1.23Ω
		Max.	4.0Ω	0.09 Ω	0.17Ω	0.55Ω	1.6 Ω
	Output capacitance (Typ.)		2,000pF	1,700pF		900pF	
	Off state leakage current (Max.)		10μA	10μA			
Input	LED forward current		50mA	Input voltage: 30V			
	LED reverse voltage		5V	Input reverse voltage: 5V			
	Peak forward current		1A	—			
	Power dissipation		75mW	300mW			
	LED operate current	Typ.	1mA	Operate voltage: 1.4V			
		Max.	3mA	Operate voltage: 4 V			
	LED turn off current	Min.	0.4mA	Turn off voltage: 0.8V			
		Typ.	0.9mA	Turn off voltage: 1.3V			
	LED dropout voltage	Typ.	1.25V (1.16V at IF = 10mA)	Input current (Typ.): 6.5mA			
		Max.	1.5V				
Turn on time		Typ.	3.9ms	3.3ms	2.2ms	1.5ms	1.2ms
		Max.	7.5ms	10 ms	10 ms	10 ms	10 ms
Turn off time		Typ.	0.8ms	0.2ms		0.1ms	
		Max.	3 ms	3 ms		3 ms	
Total power dissipation			1.6W	1.35W			
I/O isolation voltage			2,500Vrms	2,500Vrms			
I/O capacitance		Typ.	0.8pF	0.8pF			
		Max.	1.5pF	1.5pF			
Initial I/O isolation resistance (Min.)			1,000MΩ	1,000MΩ			
Safety standards			UL/C-UL, VDE	UL/C-UL, VDE			
Mass (weight) (approx.)			1.65g	1.65g			

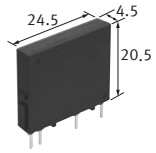
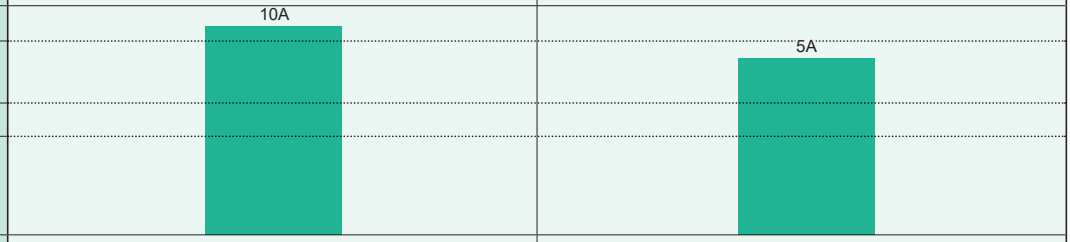
PhotoMOS® Selector Chart

Power Slim & power

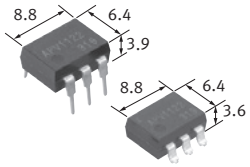
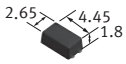
GU GE CC RF HE HF HS PD Power

Product name			Power Voltage-sensitive				Power High Capacity			
Contact configuration			1 Form A				1 Form A			
Number of terminals			4pin				4pin			
Appearance configuration *Standoff height included mm										
Features			Slim and high capacity up to 3.6A Voltage-driven type				High capacity up to 6A in a slim SIL package			
Part No.			AQZ202D	AQZ205D	AQZ207D	AQZ204D	NEW AQZ202G	AQZ205G	AQZ207G	NEW AQZ206G2
Output	Load voltage		AC/DC				AC/DC			
		Peak AC	60V	100V	200V	400V	60V	100V	200V	600V
		DC	60V	100V	200V	400V	60V	100V	200V	600V
	Continuous load current									
	Peak load current		9A	6A	3A	1.5A	12A	8A	6A	3A
	Power dissipation		1.6W				1.6W			
	On resistance	Typ.	0.066Ω	0.18Ω	0.64Ω	2.4Ω	0.015Ω	0.035Ω	0.18Ω	0.52Ω
		Max.	0.18 Ω	0.34Ω	1.1 Ω	3.2Ω	0.03 Ω	0.06 Ω	0.35Ω	0.8 Ω
	Output capacitance (Typ.)		1,400pF		600pF		1,600pF	1,240pF	700pF	3,000pF
	Off state leakage current (Max.)		10μA				10μA			
Input	LED forward current		Input voltage: 30V				50mA			
	LED reverse voltage		Input reverse voltage: 5V				5V			
	Peak forward current		—				1A			
	Power dissipation		300mW				75mW			
	LED operate current	Typ.	Operate voltage: 1.4V				1mA			
		Max.	Operate voltage: 4 V				3mA			
	LED turn off current	Min.	Turn off voltage: 0.8V				0.2mA			
		Typ.	Turn off voltage: 1.3V				0.9mA			
	LED dropout voltage	Typ.	Input current (Typ.): 6.5mA				1.25V (1.16V at IF = 10mA)			
		Max.					1.5V			
Turn on time		Typ.	5.8ms	4.2ms	2.7ms	2.3ms	3.8ms	5.0ms	2.5ms	3.0ms
		Max.	10 ms	10 ms	10 ms	10 ms	10 ms	10 ms	10 ms	10 ms
Turn off time		Typ.	0.2ms		0.1ms		0.2ms	0.3ms	0.2ms	0.2ms
		Max.	3 ms		3 ms		3 ms	3 ms	3 ms	3 ms
Total power dissipation			1.6W				1.6W			
I/O isolation voltage			2,500Vrms				2,500Vrms			
I/O capacitance		Typ.	0.8pF				0.8pF			
		Max.	1.5pF				1.5pF			
Initial I/O isolation resistance (Min.)			1,000MΩ				1,000MΩ			
Safety standards			UL/C-UL, VDE				UL/C-UL, VDE			
Mass (weight) (approx.)			1.65g				1.65g			

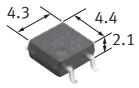
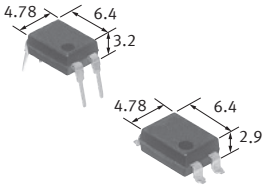
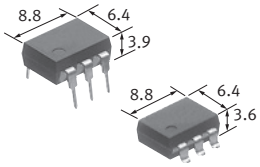
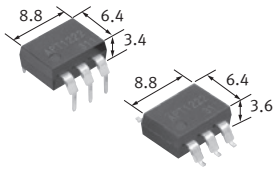
Power **Slim & power**

Product name			Power DC High Capacity	
Contact configuration			1 Form A	
Number of terminals			6pin	
Appearance configuration *Standoff height included mm				
Features			Max. high capacity 10A in a slim SIL package	
Part No.			**AQZ192**	**AQZ197**
Output	Load voltage		DC	
		Peak AC	—	—
		DC	60V	200V
	Continuous load current			
	Peak load current		30A	15A
	Power dissipation		2W	
	On resistance	Typ.	0.008Ω	0.031Ω
		Max.	0.015Ω	0.05 Ω
	Output capacitance (Typ.)		2,100pF	2,600pF
	Off state leakage current (Max.)		10μA	
Input	LED forward current		50mA	
	LED reverse voltage		5V	
	Peak forward current		1A	
	Power dissipation		75mW	
	LED operate current	Typ.	0.7mA	
		Max.	3 mA	
	LED turn off current	Min.	0.2mA	
		Typ.	0.5mA	
	LED dropout voltage	Typ.	1.35V (1.17V at I_F = 10mA)	
		Max.	1.5V	
Turn on time		Typ.	1 ms	0.7 ms
		Max.	3 ms	3 ms
Turn off time		Typ.	0.11ms	0.05ms
		Max.	1 ms	1 ms
Total power dissipation			2W	
I/O isolation voltage			3,000Vrms	
I/O capacitance		Typ.	1.3pF	
		Max.	3pF	
Initial I/O isolation resistance (Min.)			1,000MΩ	
Safety standards			UL/C-UL, VDE	
Mass (weight) (approx.)			4.3g	

Photovoltaic MOSFET Drivers Selector Chart

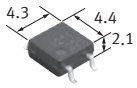
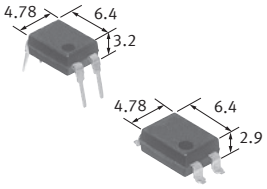
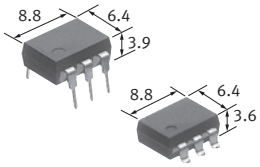
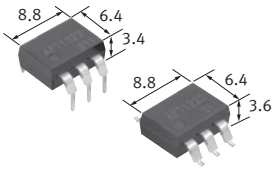
Product name			Photovoltaic MOSFET drivers			
Number of terminals			DIP 6pin	SOP 4pin		SSOP 4pin
Appearance configuration *Standoff height included mm						
Features			Photovoltaic MOSFET drivers of wide variation			
Part No.			**APV1122**	**APV1121S**	**APV2121S**	**APV2111V**
Output	Open voltage	Min.	6 V		5 V	
		Typ.	8.7V		8.2V	
	Short current	Min.	5μA		3μA	
		Typ.	14μA		8μA	
Input	LED forward current		50mA			
	LED reverse voltage		5V			
	Peak forward current		1A			
	Power dissipation		75mA			
	LED operate current	Typ.	0.6mA		0.85mA	
		Max.	3 mA			
	LED turn off current	Min.	0.2mA			
		Typ.	0.5mA		0.75mA	
	LED dropout voltage	Typ.	1.15V			
		Max.	1.5 V			
Turn on time		Typ.	0.4ms		0.8ms	
Turn off time		Typ.	0.1ms			
I/O capacitance		Typ.	0.8pF			
		Max.	1.5pF			
Initial I/O isolation resistance (Min.)			1,000MΩ			
I/O isolation voltage			5,000Vrms	2,500Vrms	2,500Vrms	1,500Vrms
Safety standards			UL/C-UL, VDE			UL/C-UL
Mass (weight) (approx.)			0.45g	0.08g		0.06g

Phototriac Coupler Selector Chart

Product name	APT Phototriac Coupler							
Type	Zero-cross	Random	Zero-cross	Random	Zero-cross	Random	Zero-cross	Random
Number of terminals	SOP 4pin		DIP 4pin		DIP 6pin		DIp 6pin wide	
Type	0.05A		0.1A					
Appearance configuration *Standoff height included mm								
Features	Phototriac coupler ideal for triac driver with wide variation							
Part No.	**APT1211S**	**APT1221S**	**APT1211**	**APT1221**	**APT1212**	**APT1222**	**APT1212W**	**APT1222W**
Out-put: Repetitive peak OFF-state voltage	600V							
Out-put: ON-state RMS current	0.05A		0.1A					
Out-put: Non-repetitive surge current	0.6A		1.2A					
Out-put: Peak ON-state voltage	Max. 2.5V							
Out-put: Peak OFF-state current	Max. 1μA							
In-put: LED forward current	50mA							
In-put: LED reverse voltage	6V							
In-put: Peak forward current	1A							
In-put: LED dropout voltage (IF=20mA)	Max. 1.3V							
Trigger LED current	Max. 10mA							
Zero-cross voltage	Max. 50V	—	Max. 50V	—	Max. 50V	—	Max. 50V	—
Turn on time	Max. 0.1ms							
I/O isolation voltage	3,750Vrms		5,000Vrms					
I/O isolation resistance	Min. 50GΩ							
Safety standards	UL/C-UL, VDE*							
Mass (weight) (approx.)	0.08g		0.19g		0.45g		0.45g	

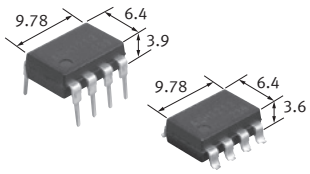
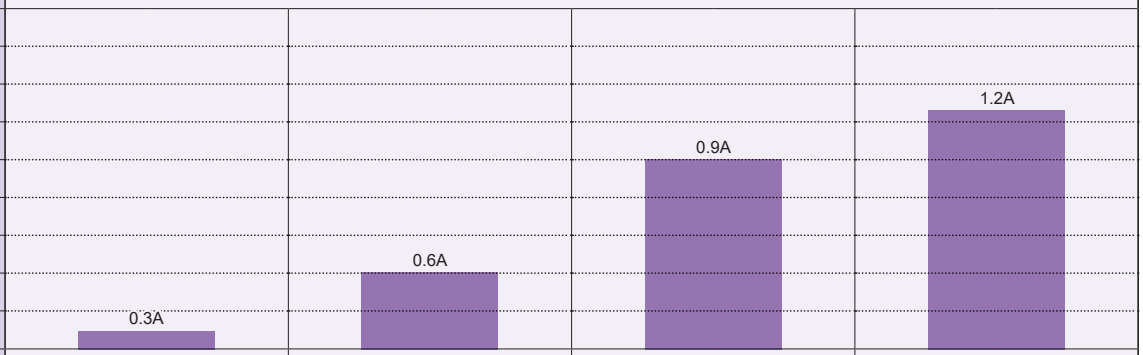
*Normal part number is taken UL/C-ULstandards. About VDE standard, please contact our sales office.

Phototriac Coupler Selector Chart

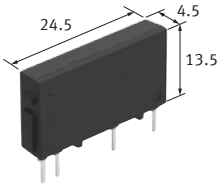
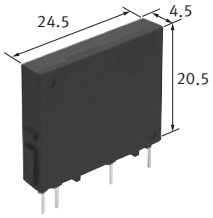
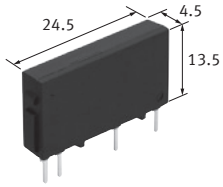
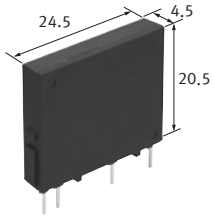
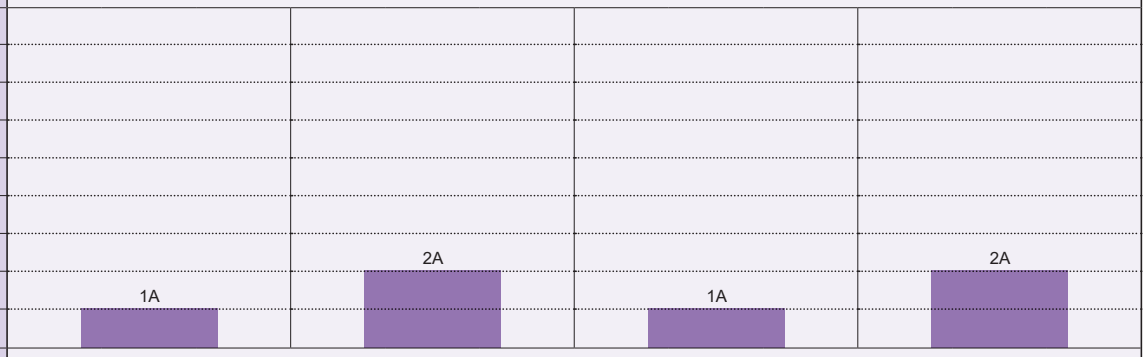
Product name	APT Phototriac Coupler			
Type	Zero-cross (Low zero-cross type)			
Number of terminals	SOP 4pin	DIP 4pin	DIP 6pin	DIP 6pin wide
Type	0.05A	0.1A		
Appearance configuration *Standoff height included mm				
Features	Phototriac coupler ideal for triac driver with wide variation			
Part No.	**APT1231S**	**APT1231**	**APT1232**	**APT1232W**
Out-put: Repetitive peak OFF-state voltage	600V			
Out-put: ON-state RMS current	0.05A	0.1A		
Out-put: Non-repetitive surge current	0.6A	1.2A		
Out-put: Peak ON-state voltage	Max. 2.0V			
Out-put: Peak OFF-state current	Max. 1μA			
In-put: LED forward current	50mA			
In-put: LED reverse voltage	6V			
In-put: Peak forward current	1A			
In-put: LED dropout voltage (I_F=20mA)	Max. 1.3V			
Trigger LED current	Max. 10mA			
Zero-cross voltage	Max. 15V			
Turn on time	Max. 0.1ms			
I/O isolation voltage	3,750Vrms	5,000Vrms		
I/O isolation resistance	Min. 50GΩ			
Safety standards	UL/C-UL, VDE*			
Mass (weight) (approx.)	0.08g	0.19g	0.45g	0.45g

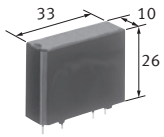
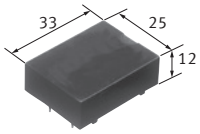
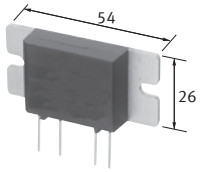
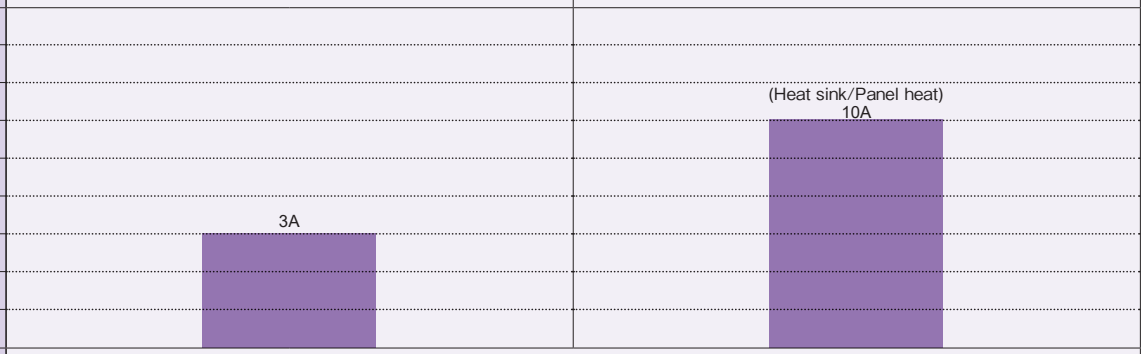
*Normal part number is taken UL/C-ULstandards. About VDE standard, please contact our sales office.

Solid State Relays Selector Chart

Product name	AQ-H Relays							
Type	Phototriac							
Number of terminals	DIP 8pin							
Type	0.3A		0.6A		0.9A		1.2A	
Appearance configuration *Standoff height included mm								
Features	Compact DIP type SSR Ideal for AC load control							
Part No.	**AQH0213**	**AQH0223**	**AQH1213**	**AQH1223**	**AQH2213**	**AQH2223**	**AQH3213**	**AQH3223**
Output: Repetitive peak OFF-state voltage	600V							
Output: ON-state RNS current								
Output: Non-repetitive surge current	3A		6A		9A		12A	
Output: Peak ON-state voltage	Max. 2.5V							
Output: Peak OFF-state current	Max. 100μA							
Input: LED forward current	50mA							
Input: LED reverse voltage	6V							
Input: Peak forward current	1A							
Input: LED dropout voltage (IF=20mA)	Max. 1.3V							
Trigger LED current	Max. 10mA							
Zero-cross voltage	Max. 50V	—	Max. 50V	—	Max. 50V	—	Max. 50V	—
Turn on time	Max. 0.1ms							
I/O isolation voltage	5,000Vrms							
I/O capacitance, Typ.	2.1pF							
I/O isolation resistance	Min. 50GΩ							
Safety standards	UL/C-UL, VDE							
Mass (weight) (approx.)	0.56g							

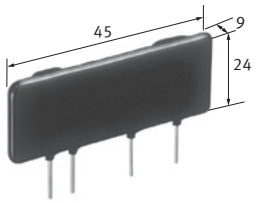
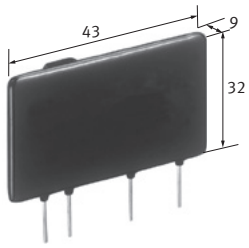
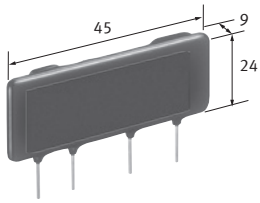
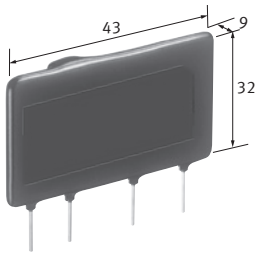
Solid State Relays Selector Chart

Product name		AQ-G Relays											
Type		Zero-cross						Random					
Number of terminals		4pin											
Type		1A			2A			1A			2A		
Appearance configuration *Standoff height included mm													
Features		Slim type SSR for 1A and 2A control											
Part No.		AQG12105	AQG12112	AQG12124	AQG22105	AQG22112	AQG22124	AQG12205	AQG12212	AQG12224	AQG22205	AQG22212	AQG22224
Load side	Load voltage AC	75 to 264V											
	Load voltage DC	—											
	Max. load current												
	Off state leakage current, max.	1.5mA (applied 200V)											
	Non-repetitive surge current	8A			30A			8A			30A		
Input side	Control voltage	4 to 6V	9.6 to 14.4V	19.2 to 28.8V	4 to 6V	9.6 to 14.4V	19.2 to 28.8V	4 to 6V	9.6 to 14.4V	19.2 to 28.8V	4 to 6V	9.6 to 14.4V	19.2 to 28.8V
	Input impedance, approx.	0.3kΩ	0.8kΩ	1.6kΩ	0.3kΩ	0.8kΩ	1.6kΩ	0.3kΩ	0.8kΩ	1.6kΩ	0.3kΩ	0.8kΩ	1.6kΩ
	Pick-up voltage, max.	4V	9.6V	19.2V	4V	9.6V	19.2V	4V	9.6V	19.2V	4V	9.6V	19.2V
	Drop-out voltage, min.	1V											
Operate time, max.		1/2 cycle of voltage sine wave + 1ms						1ms					
Release time, max.		1/2 cycle of voltage sine wave + 1ms											
Breakdown voltage		3,000Vrms											
Snubber circuit integrated		•											
LED operation indicator		—											
Safety standards		UL/C-UL, VDE											
Mass (weight) (approx.)		2.7g			4.3g			2.7g			4.3g		

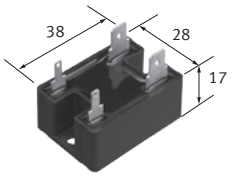
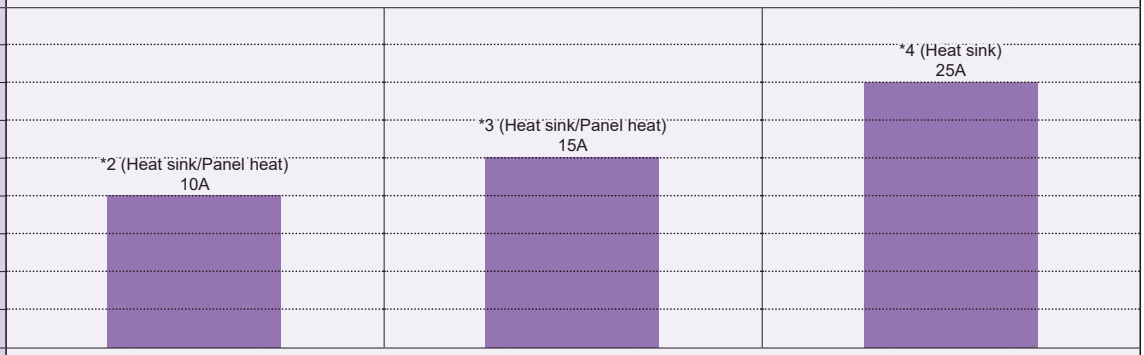
Product name			AQ1 Relays		
Type			Zero-cross*		
Number of terminals			4pin		
Type			3A		10A
Appearance configuration *Standoff height included mm					
Features			High capacity up to 10A PCB terminal type SSR		
Part No.			**AQ1298**	**AQH1398**	**AQH1208**
Load side	Load voltage	AC	75 to 250V		
		DC	—		—
	Max. load current				
	Off state leakage current, max.		5mA		
	Non-repetitive surge current		80A		100A
Input side	Control voltage		4 to 32V DC		
	Input impedance, approx.		—		
	Pick-up voltage, max.		4 V		
	Drop-out voltage, min.		1.0V		
Operate time, max.			1/2 cycle of voltage sine wave + 1ms		
Release time, max.			1/2 cycle of voltage sine wave + 1ms		
Breakdown voltage			4,000 Vrms (between input and output) 2,500Vrms (between input, output and case)		
Snubber circuit integrated			•		
LED operation indicator			—		
Safety standards			UL/C-UL, VDE		
Mass (weight) (approx.)			19g		26g

*Random type is also available by custom order.

Solid State Relays Selector Chart

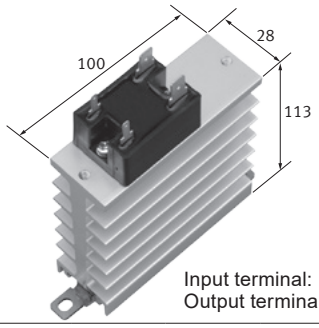
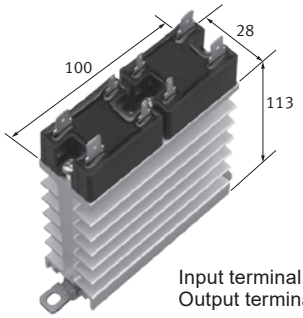
Product name		AQ8 Relays											
Type		Zero-cross						Random					
Number of terminals		4pin											
Type		2A			3A			2A			3A		
Appearance configuration *Standoff height included mm													
Features		SIL type SSR with 9mm thickness controls up to 3A											
Part No.	Input terminal distance: 5.08mm	**AQ80139**	**AQ80133**	**AQ80134**	**AQ80159**	**AQ80153**	**AQ80154**	**AQ80239**	**AQ80233**	**AQ80234**	**AQ80259**	**AQ80253**	**AQ80254**
	Input terminal distance: 7.62mm	**AQ81139**	**AQ81133**	**AQ81134**	**AQ81159**	**AQ81153**	**AQ81154**	**AQ81239**	**AQ81233**	**AQ81234**	**AQ81259**	**AQ81253**	**AQ81254**
Load side	Load voltage AC	75 to 250V											
	Load voltage DC	—											
	Max. load current												
	Off state leakage current, max.	5mA											
	Non-repetitive surge current	30A			80A			30A			80A		
Input side	Control voltage	4 to 6V	9.6 to 14.4V	21.6 to 26.4V	4 to 6V	9.6 to 14.4V	21.6 to 26.4V	4 to 6V	9.6 to 14.4V	21.6 to 26.4V	4 to 6V	9.6 to 14.4V	21.6 to 26.4V
	Input impedance, approx.	0.18kΩ	0.55kΩ	1.4kΩ	0.18kΩ	0.55kΩ	1.4kΩ	0.3kΩ	0.8kΩ	1.8kΩ	0.3kΩ	0.8kΩ	1.8kΩ
	Pick-up voltage, max.	4 V	9.6V	21.6V	4 V	9.6V	21.6V	4 V	9.6V	21.6V	4 V	9.6V	21.6V
	Drop-out voltage, min.	0.5V	1.2V	2.4V	0.5V	1.2V	2.4V	0.5V	1.2V	2.4V	0.5V	1.2V	2.4V
Operate time, max.		1/2 cycle of voltage sine wave + 1ms						1ms					
Release time, max.		1/2 cycle of voltage sine wave + 1ms											
Breakdown voltage		3,000Vrms											
Snubber circuit integrated		•											
LED operation indicator		—											
Safety standards		UL, CSA, TÜV*											
Mass (weight) (approx.)		6.8g			9.8g			6.8g			9.8g		

*Normal part number is taken UL, CSA standards. About TÜV standard, please contact our sales office.

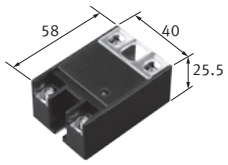
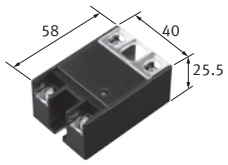
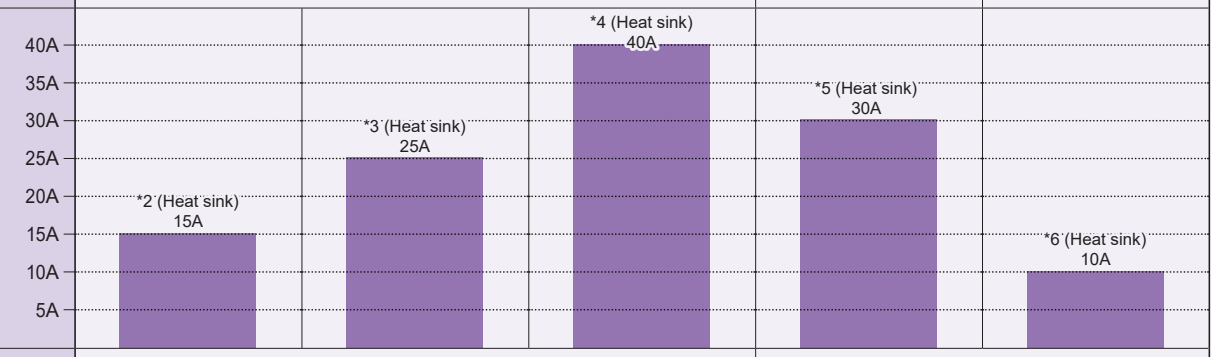
Product name		AQ-J Relays								
Type		Zero-cross*1								
Number of terminals		4								
Type		10A			15A			25A		
Appearance configuration *Standoff height included mm		 Input terminal: #110 type Output terminal: #250 type								
Features		Load current 10 to 25A Small Tab Terminal SSR								
Part No.		**AQJ112V**	**AQJ119V**	**AQJ116V**	**AQJ212V**	**AQJ219V**	**AQJ216V**	**AQJ412V**	**AQJ419V**	**AQJ416V**
Load side	Load voltage AC	75 to 264V								
	Load voltage DC	—								
	Max. load current									
	Off state leakage current, max.	5mA								
	Non-repetitive surge current	100A			150A			250A		
Input side	Control voltage	4 to 6V	10 to 18V	18 to 28V	4 to 6V	10 to 18V	18 to 28V	4 to 6V	10 to 18V	18 to 28V
	Input impedance, approx.	0.26kΩ	0.8kΩ	1.6kΩ	0.26kΩ	0.8kΩ	1.6kΩ	0.26kΩ	0.8kΩ	1.6kΩ
	Pick-up voltage, max.	4V	10V	18V	4V	10V	18V	4V	10V	18V
	Drop-out voltage, min.	1V								
Operate time, max.		1/2 cycle of voltage sine wave + 1ms								
Release time, max.		1/2 cycle of voltage sine wave + 1ms								
Breakdown voltage		3,000Vrms between input and output 2,500Vrms between input, output and case								
Snubber circuit integrated		•								
LED operation indicator		—								
Safety standards		UL/C-UL, TÜV								
Mass (weight) (approx.)		30g								

*1 Random type is available by custom order. *2 When mounting a standard heat sink (AQP-HS-J10A) or when mounting on 100 × 100 × t1.6 (mm) iron plate
*3 When mounting a standard heat sink (AQP-HS-J10A) or when mounting on 200 × 200 × t2 (mm) iron plate *4 When mounting a standard heat sink (AQP-HS-J25A)

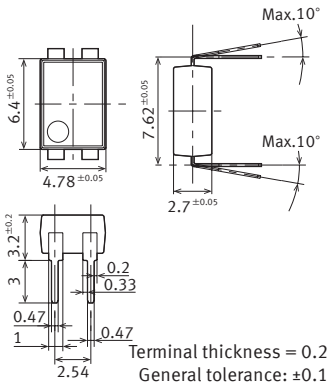
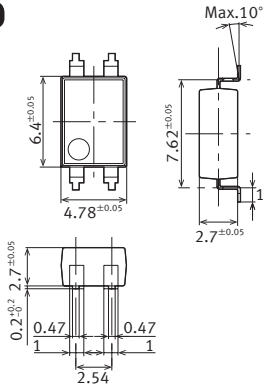
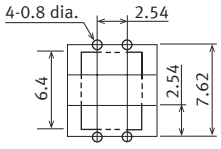
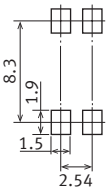
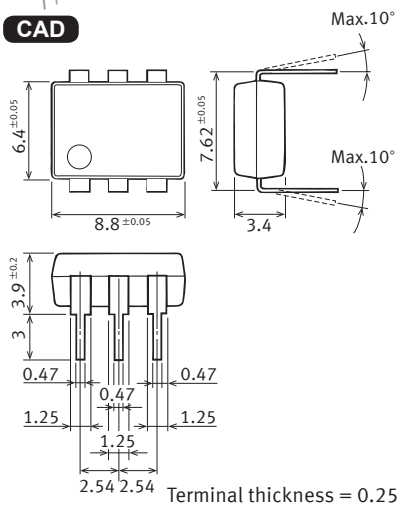
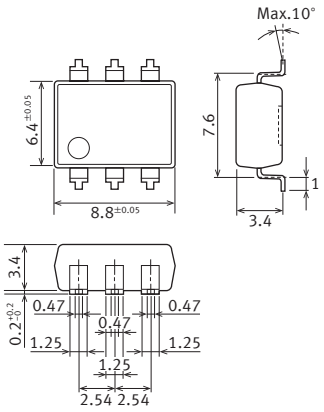
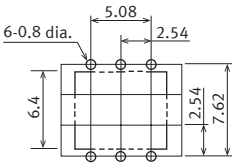
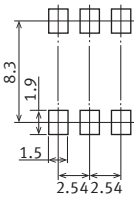
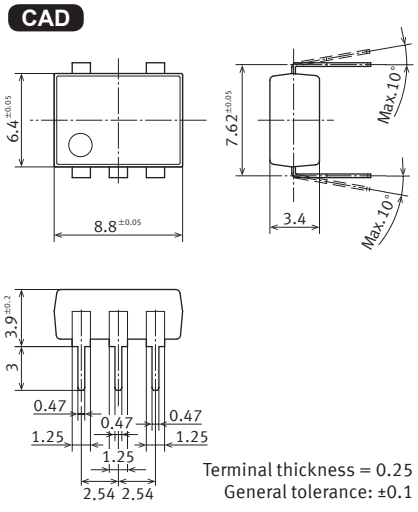
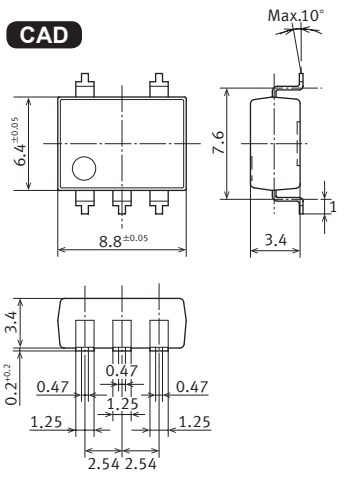
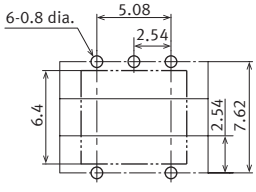
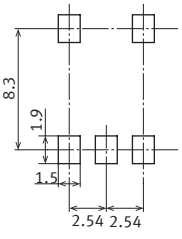
Solid State Relays Selector Chart

Product name	AQ-J Relays											
Type	Zero-cross*											
Number of terminals	4						4×2					
Type	10A (Output arrangement: 1a)			20A (Output arrangement: 1a)			10A (Output arrangement: 1a × 2)			15A (Output arrangement: 1a × 2)		
Appearance configuration *Standoff height included mm	 Input terminal: #110 type Output terminal: #250 type						 Input terminal: #110 type Output terminal: #250 type					
Features	Load current 10 to 25A Small Tab Terminal SSR											
Part No.	AQJ112VY	AQJ119VY	AQJ116VY	AQJ412VY	AQJ419VY	AQJ416VY	AQJ112VW	AQJ119VW	AQJ116VW	AQJ412VW	AQJ419VW	AQJ416VW
Load side: Load voltage AC	75 to 264V											
Load side: Load voltage DC	—											
Load side: Max. load current	10A			20A			10A			15A		
Load side: Off state leakage current, max.	5mA											
Load side: Non-repetitive surge current	100A			250A			100A			250A		
Input side: Control voltage	4 to 6V	10 to 18V	18 to 28V	4 to 6V	10 to 18V	18 to 28V	4 to 6V	10 to 18V	18 to 28V	4 to 6V	10 to 18V	18 to 28V
Input side: Input impedance, approx.	0.26kΩ	0.8kΩ	1.6kΩ	0.26kΩ	0.8kΩ	1.6kΩ	0.26kΩ	0.8kΩ	1.6kΩ	0.26kΩ	0.8kΩ	1.6kΩ
Input side: Pick-up voltage, max.	4V	10V	18V	4V	10V	18V	4V	10V	18V	4V	10V	18V
Input side: Drop-out voltage, min.	1V											
Operate time, max.	1/2 cycle of voltage sine wave + 1ms											
Release time, max.	1/2 cycle of voltage sine wave + 1ms											
Breakdown voltage	3,000Vrms between input and output 2,500Vrms between input, output and case											
Snubber circuit integrated	•											
LED operation indicator	—											
Safety standards	—											
Mass (weight) (approx.)	250g						280g					

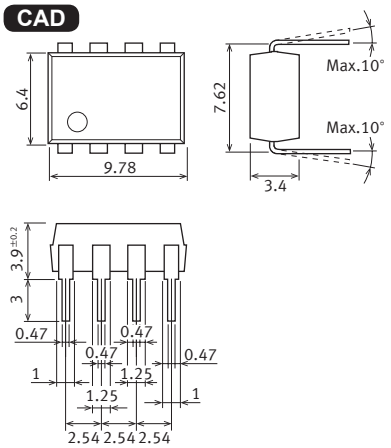
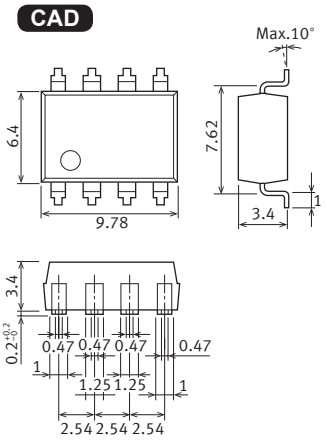
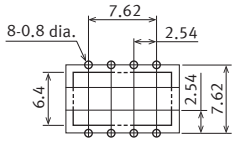
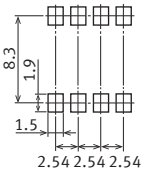
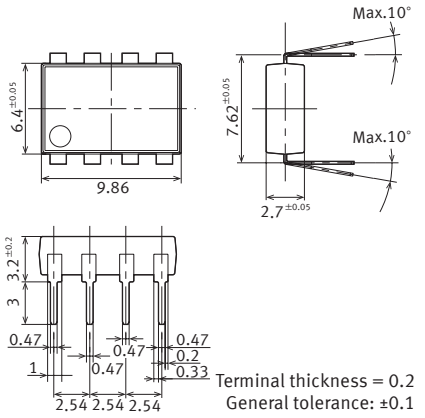
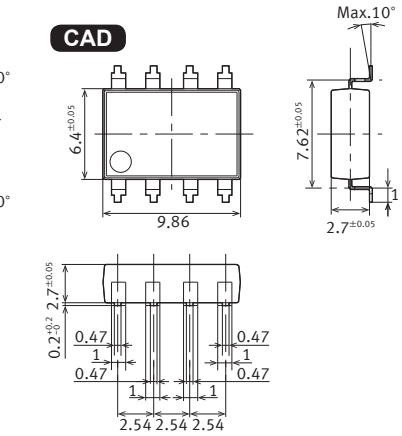
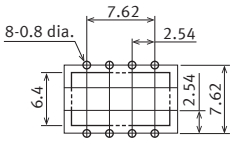
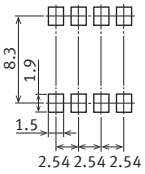
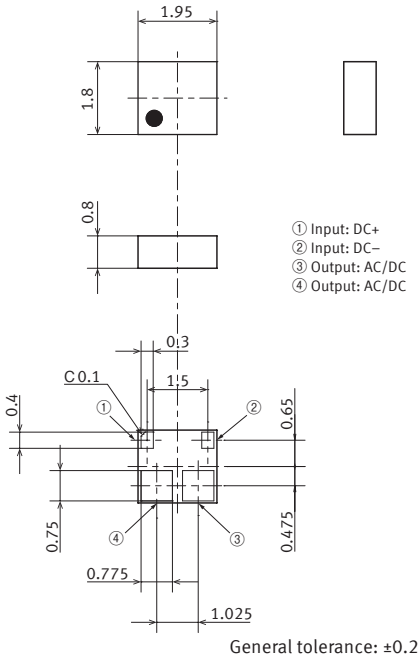
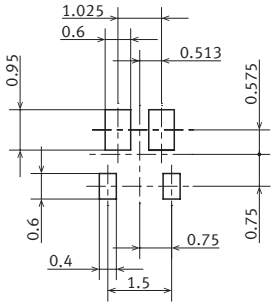
*Random type is available by custom order.

Product name	AQ-A Relays (AC output type)			AQ-A Relays (DC output type)	
Type	Zero-cross*1			—	
Number of terminals	4				
Type	15A	25A	40A	30A	10A
Appearance configuration *Standoff height included mm					
Features	Load current 15 to 40A Small Screw Terminal SSR				
Part No.	**AQA211VL**	**AQA411VL**	**AQA611VL**	**AQA551DL**	**AQA171DL**
Load side: Load voltage	AC	75 to 250V			—	
	DC	—			100V	600V
Load side: Max. load current					
Load side: Off state leakage current, max.	10mA			100μA	
Load side: Non-repetitive surge current	150A	250A	400A	—	
Load side: Peak load current	—	—	—	90A (100ms)	20A (100ms)
Input side: Control voltage	4 to 32V				
Input side: Input impedance, approx.	—				
Input side: Pick-up voltage, max.	4V				
Input side: Drop-out voltage, min.	1V				
Operate time, max.	1/2 cycle of voltage sine wave + 1ms			10ms	5ms
Release time, max.	1/2 cycle of voltage sine wave + 1ms			3ms	1ms
Breakdown voltage	4,000 Vrms between input and output/2,500Vrms between input, output and case				
Snubber circuit integrated	•			—	
Reverse connection prevention diode	—			•	
LED operation indicator	•				
Safety standards	UL/C-UL, VDE			UL/C-UL, VDE	
Mass (weight) (approx.)	70g				

*1 Random type is available by custom order. *2 When mounting a standard heat sink (AQP-HS-J10A or AQP-HS-SJ20A) *3 When mounting a standard heat sink (AQP-HS-30/40A)
*4 When mounting a standard heat sink (AQP-HS-J25A) *5 When mounting a standard heat sink (AQP-HS-J25A) *6 When mounting a standard heat sink (AQP-HS-SJ20A)

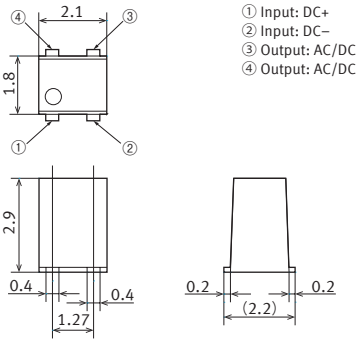
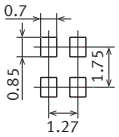
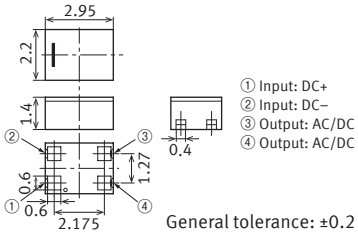
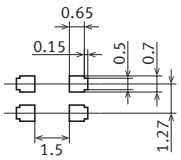
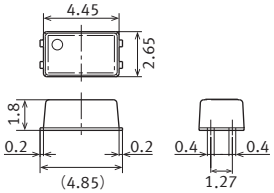
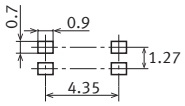
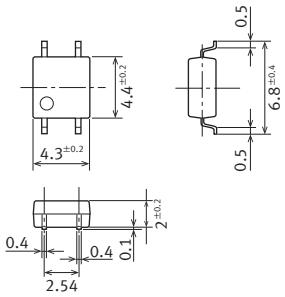
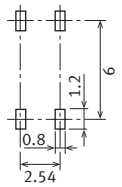
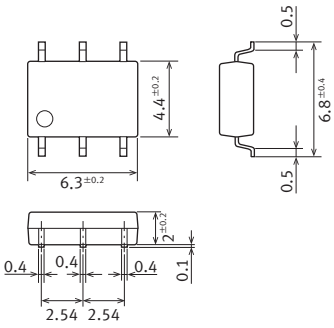
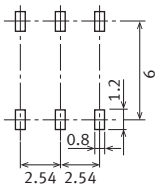
Type	Dimensions (mm)
AQY21 (DIP) **AQY41 (DIP)** Series	Through hole terminal type  CAD  Terminal thickness = 0.2 General tolerance: ±0.1 Surface mount terminal type  CAD  Terminal thickness = 0.2 General tolerance: ±0.1 PC board pattern (Bottom view)  Tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQV10 (DIP) **AQV11 (DIP)** **AQV20 (DIP)** **AQV21 (DIP)** **AQV22 (DIP)** **AQV23 (DIP)** **AQV25 (DIP)** **AQV41 (DIP)** **AQV45 (DIP)** Series	Through hole terminal type  CAD  Terminal thickness = 0.25 General tolerance: ±0.1 Surface mount terminal type  CAD  Terminal thickness = 0.25 General tolerance: ±0.1 PC board pattern (Bottom view)  Tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQV1122 (DIP)	Through hole terminal type  CAD  Terminal thickness = 0.25 General tolerance: ±0.1 Surface mount terminal type  CAD  Terminal thickness = 0.25 General tolerance: ±0.1 PC board pattern (Bottom view)  Tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1

CAD The CAD data of the products with a "CAD" mark can be downloaded from our Website.

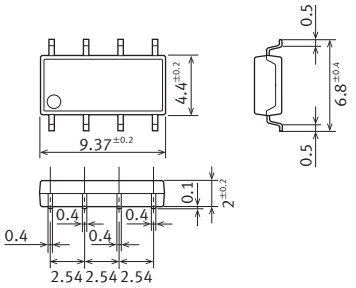
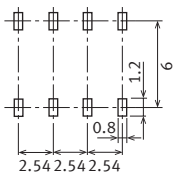
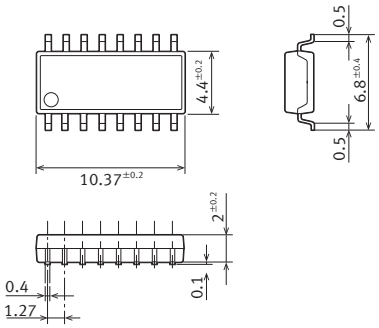
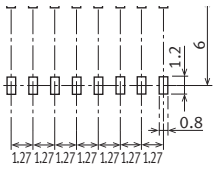
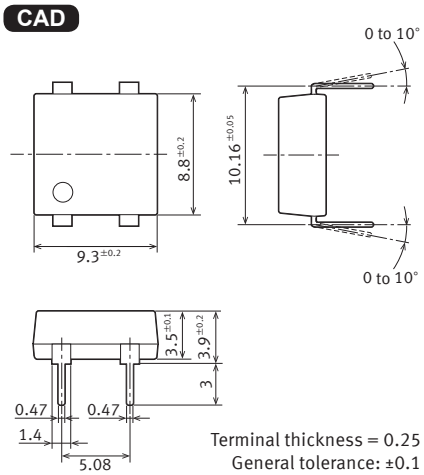
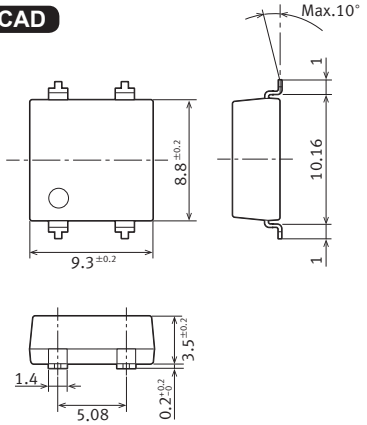
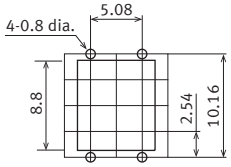
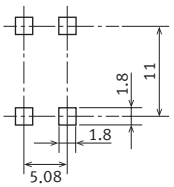
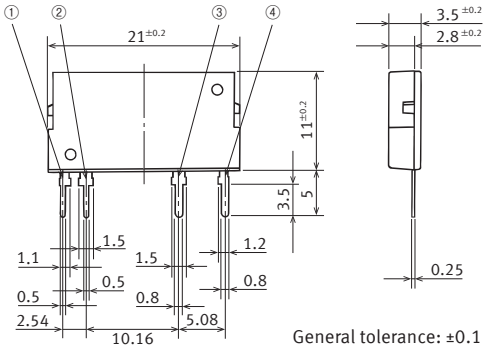
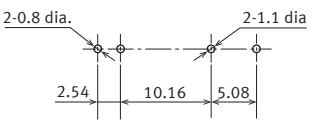
Type	Dimensions (mm)
AQW21 (DIP) **AQW22 (DIP)** **AQW25 (DIP)** **AQW41 (DIP)** **AQW45 (DIP)** **AQW61 (DIP)** **AQW65 (DIP)** Series	Through hole terminal type CAD  Terminal thickness = 0.25 General tolerance: ±0.1 Surface mount terminal type CAD  Terminal thickness = 0.25 General tolerance: ±0.1 PC board pattern (Bottom view)  Tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQW21*EH (DIP) **AQW21*HL (DIP)** **AQW41*EH (DIP)** **AQW61*EH (DIP)** Series	Through hole terminal type CAD  Terminal thickness = 0.2 General tolerance: ±0.1 Surface mount terminal type CAD  Terminal thickness = 0.2 General tolerance: ±0.1 PC board pattern (Bottom view)  Tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQY2C (TSON) Series	CAD  ① Input: DC+ ② Input: DC– ③ Output: AC/DC ④ Output: AC/DC General tolerance: ±0.2 Recommended mounting pad (Top view) 

*Stand for one digit.

CAD The CAD data of the products with a "CAD" mark can be downloaded from our Website.

Type	Dimensions (mm)
AQY22 (VSSOP) Series	 CAD  General tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQY22 (SON) Series	 CAD  General tolerance: ±0.2 Recommended mounting pad (Top view)  Tolerance: ±0.1
APV21 (SSOP) **AQY22 (SSOP)** Series	 CAD  Terminal thickness = 0.15 General tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
APV11 (SOP) **APV21 (SOP)** **AQY21 (SOP)** **AQY22 (SOP)** **AQY23 (SOP)** **AQY41 (SOP)** Series	 CAD  Terminal thickness = 0.15 General tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQV21 (SOP) **AQV22 (SOP)** **AQV25 (SOP)** **AQV41 (SOP)** Series	 CAD  Terminal thickness = 0.15 General tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1

CAD The CAD data of the products with a "CAD" mark can be downloaded from our Website.

Type	Dimensions (mm)
AQW21 (SOP) **AQW22 (SOP)** **AQW41 (SOP)** **AQW61 (SOP)** Series	 CAD  Terminal thickness = 0.15 General tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQS22 (SOP) Series	 CAD  Terminal thickness = 0.15 General tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQY27 **(Power-DIP)** Series	Through hole terminal type  CAD  Terminal thickness = 0.25 General tolerance: ±0.1 Surface mount terminal type  CAD  Terminal thickness = 0.25 General tolerance: ±0.1 PC board pattern (Bottom view)  Tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ±0.1
AQZ10 (SIL) **AQZ20 (SIL)** **AQZ40 (SIL)** Series	 CAD AC/DC type ① Input: DC– ② Input: DC+ ③ Output: DC or AC ④ Output: DC or AC DC type ①Input: DC– ② Input: DC+ ③ Output: DC– ④ Output: DC+  General tolerance: ±0.1 PC board pattern (Bottom view)  Tolerance: ±0.1

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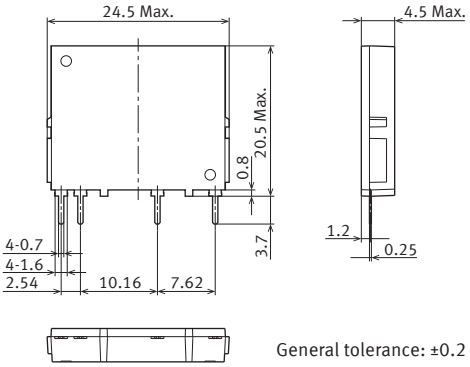
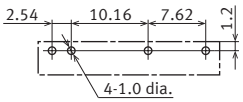
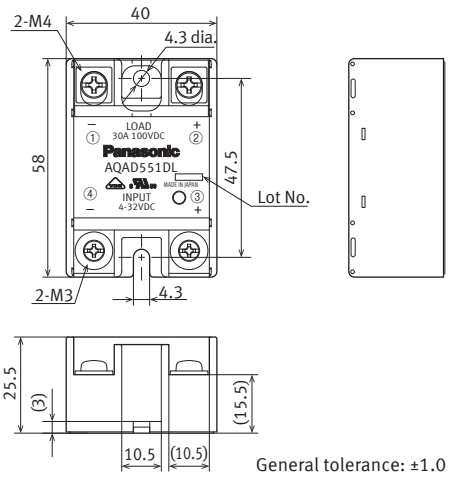
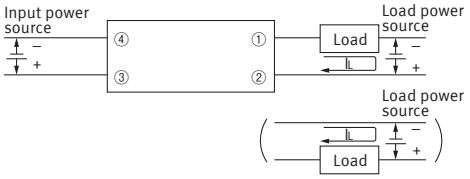
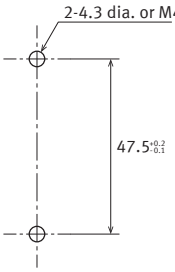
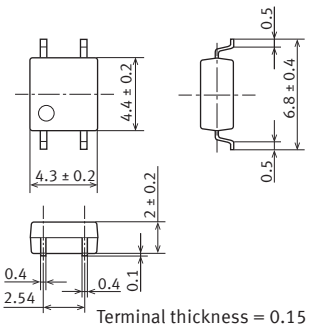
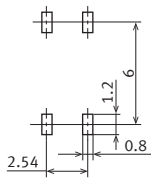
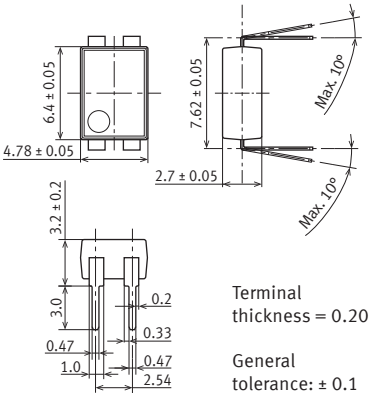
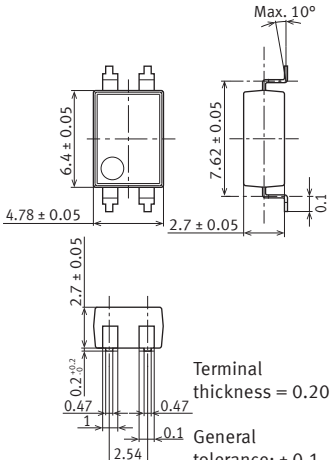
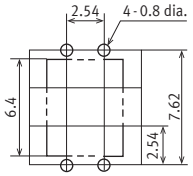
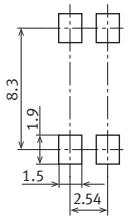
Type	Dimensions (mm)
AQY19 (SIL) Series	 CAD  General tolerance: ±0.2 PC board pattern (Bottom view)  Tolerance: ±0.1 Schematic 
AQAD Series	 CAD  General tolerance: ±1.0 Schematic  Mounting dimensions 

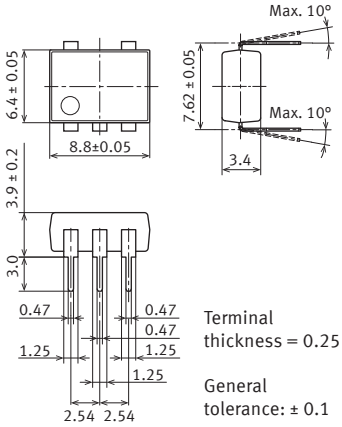
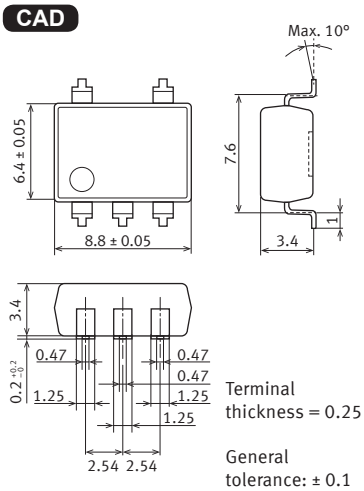
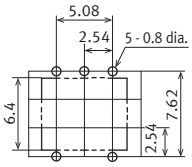
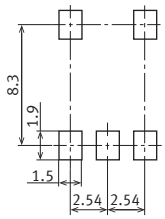
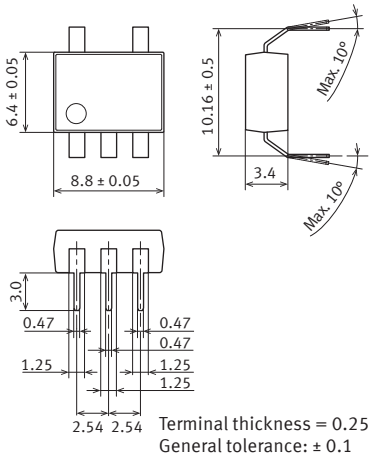
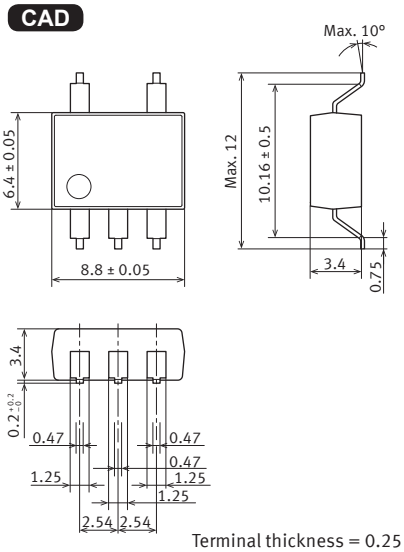
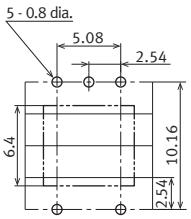
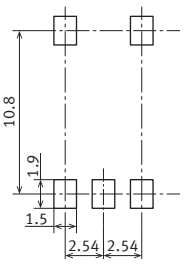
CAD The CAD data of the products with a “CAD” mark can be downloaded from our Website.

Phototriac Coupler Dimensions

Type	Dimensions (mm)
APT1211S (SOP) **APT1221S (SOP)** **APT1231S (SOP)** Series	 CAD  Terminal thickness = 0.15 General tolerance: ± 0.1 Recommended mounting pad (TOP VIEW)  Tolerance: ± 0.1
APT1211 (A) (DIP4) **APT1221 (A) (DIP4)** **APT1231 (A) (DIP4)** Series	Through hole terminal type  CAD  Terminal thickness = 0.20 General tolerance: ± 0.1 Surface mount terminal type  CAD  Terminal thickness = 0.20 General tolerance: ± 0.1 PC board pattern (Bottom view)  Tolerance: ± 0.1 Recommended mounting pad (Top view)  Tolerance: ± 0.1

CAD The CAD data of the products with a "CAD" mark can be downloaded from our Website.

Phototriac Coupler Dimensions

Type	Dimensions (mm)
APT1212 (A) (DIP6) **APT1222 (A) (DIP6)** **APT1232 (A) (DIP6)** Series	Through hole terminal type  CAD  Terminal thickness = 0.25 General tolerance: ± 0.1 Surface mount terminal type  CAD  Terminal thickness = 0.25 General tolerance: ± 0.1 PC board pattern (Bottom view)  Tolerance: ± 0.1 Recommended mounting pad (Top view)  Tolerance: ± 0.1
APT1212W (A) (DIP6WIDE) **APT1222W (A) (DIP6WIDE)** **APT1232W (A) (DIP6WIDE)** Series	Through hole terminal type  CAD  Terminal thickness = 0.25 General tolerance: ± 0.1 Surface mount terminal type  CAD  Terminal thickness = 0.25 General tolerance: ± 0.1 PC board pattern (Bottom view)  Tolerance: ±0.1 Recommended mounting pad (Top view)  Tolerance: ± 0.1

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Panasonic Electric Works

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