

# PhotoMOS Selector Chart

• Type of relay		GU SOP High capacity Type		GU SOP Type			
		1a Types		1a Types			
		AC/DC Type		AC/DC Type			
		4-Pin		4-Pin			
mm inch							
		• Greatly increased load current in the same, miniature, 4-pin SO package.		• Super miniature design • SOP (1 Form A) 4-pin type			
• Features		Part No.	AQY212GS	AQY212S	AQY210S	AQY214S	
• Output	Load voltage*	Peak AC	60 V	60 V	350 V	400 V	
		DC	60 V	60 V	350 V	400 V	
• Output	Continuous load current	1 A					
		0.5 A					
	Peak load current		3.0 A	1.5 A	0.3 A	0.24 A	
	Power dissipation*		300 mW	300 mW	300 mW		
	ON resistance	Typical	0.34 Ω	0.83 Ω	17 Ω	25 Ω	
		Maximum	0.7 Ω	2.5 Ω	25 Ω	35 Ω	
	Output capacitance (Typical)		220 pF	80 pF	45 pF		
Off state leakage current		Max. 1 μA	Max. 1 μA	Max. 1 μA			
• Input	LED forward current*		50 mA	50 mA	50 mA		
	LED reverse voltage*		5 V	5 V	5 V		
	Peak forward current		1 A	1 A	1 A		
	Power dissipation*		75 mW	75 mW	75 mW		
	LED operate current [LED operate (OFF) current]	Typical	1.1 mA	0.9 mA	0.9 mA	0.9 mA	
		Maximum	3.0 mA	3 mA	3.0 mA	3.0 mA	
	Minimum	0.3 mA	0.4 mA	0.4 mA	0.4 mA		
	Typical	1.0 mA	0.85 mA	0.85 mA	0.85 mA		
	LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical	1.14 V	1.14 V	1.14 V	1.14 V	
		Maximum	1.5 V	1.5 V	1.5 V	1.5 V	
• Switching speed	Turn on time [Operate (OFF) time]	Typical	1.3 ms	0.65 ms	0.23 ms	0.21 ms	
		Maximum	5.0 ms	2 ms	0.5 ms	0.5 ms	
	Turn off time [Reverse (ON) time]	Typical	0.1 ms	0.08 ms	0.04 ms		
		Maximum	0.5 ms	0.2 ms	0.2 ms		
• Total power dissipation*			350 mW	350 mW	350 mW		
• I/O isolation voltage*			1,500 V AC	1,500 V AC	1,500 V AC		
• Temperature limits	Operating*		-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F		
	Storage*		-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F		
• I/O capacitance	Typical		0.8 pF	-	-		
	Maximum		1.5 pF	1.5 pF	1.5 pF		
• Initial I/O isolation resistance			Min. 1,000 MΩ	Min. 1,000 MΩ	Min. 1,000 MΩ		
• Terminal layout (.100, inch grid)			Recommended mounting pad (Top view)	Recommended mounting pad (Top view)	Recommended mounting pad (Top view)		
	mm inch						
• Standards			UL, C-UL, VDE	UL, C-UL, BSI	UL (E43149), C-UL, BSI		
• Mounting method							

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

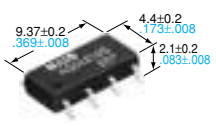
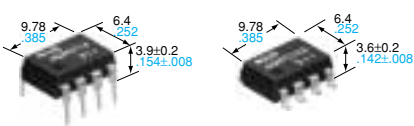
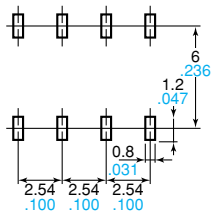
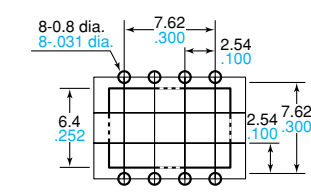
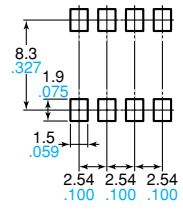




# PhotoMOS Selector Chart

• Type of relay		GU SOP Type							
		1a Types							
		AC/DC Type							
		6-Pin							
		mm inch							
• Features		<ul style="list-style-type: none"> <li>Ultra small size</li> <li>SOP (1 Form A) 6-pin type</li> </ul>							
		Part No.	AQV212S	AQV215S	AQV217S	AQV210S	AQV214S	AQV216S	
• Output	Load voltage*	Peak AC	60 V	100 V	200 V	350 V	400 V	600 V	
		DC	60 V	100 V	200 V	350 V	400 V	600 V	
• Output	Continuous load current	1 A							
		0.5 A							
	Peak load current	1.0 A	0.9 A	0.48 A	0.3 A	0.3 A	0.12 A		
	Power dissipation*	450 mW							
	ON resistance	Typical	0.83 Ω	2.3 Ω	11 Ω	23 Ω	30 Ω	70 Ω	
	Maximum	2.5 Ω	4.0 Ω	15 Ω	35 Ω	50 Ω	120 Ω		
	Output capacitance (Typical)	150 pF	110 pF	70 pF	45 pF	45 pF	45 pF		
Off state leakage current	Max. 1 μA								
• Input	LED forward current*	50 mA							
	LED reverse voltage*	5 V							
	Peak forward current	1 A							
	Power dissipation*	75 mW							
	LED operate current [LED operate (OFF) current]	Typical	0.7 mA						
	Maximum	3.0 mA							
	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA						
Typical	0.65 mA								
LED dropout voltage (If = 5 mA)	Typical	1.14 V							
Maximum	1.5 V								
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.65 ms	0.60 ms	0.25 ms	0.25 ms	0.25 ms	0.25 ms	
		Maximum	2 ms	2 ms	1 ms	0.5 ms	0.5 ms	0.5 ms	
• Switching speed	Turn off time [Reverse (ON) time]	Typical	0.08 ms	0.06 ms	0.05 ms	0.05 ms	0.05 ms	0.05 ms	
		Maximum	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	
• Total power dissipation*	500 mW								
• I/O isolation voltage*	1,500 V AC								
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F							
	Storage*	-40°C to +100°C -40°F to +212°F							
• I/O capacitance	Typical	0.8 pF							
	Maximum	1.5 pF							
• Initial I/O isolation resistance	Min. 1,000 MΩ								
• Terminal layout (.100, inch grid)	Recommended mounting pad (Top view)								
		mm inch							
• Standards	UL (E43149), C-UL								
• Mounting method									

• Type of relay		GU High Capacity Type		GU Type						
		1a Type		1a Type						
		AC/DC Type		AC/DC Type						
		4-Pin		6-Pin						
mm inch										
		Standard I/O isolation type						Reinforced I/O isolation type		
• Features		<ul style="list-style-type: none"> <li>• Greatly increased load current</li> <li>• Reinforced insulation 5,000V type</li> <li>• Compact 4-pin DIP size</li> </ul>		<ul style="list-style-type: none"> <li>• General use</li> </ul>						
		Part No.	AQY212GH	AQV212	AQV215	AQV217	AQV210	AQV214	AQV216	AQV214H
• Output	Load voltage*	Peak AC	60 V	60 V	100 V	200 V	350 V	400 V	600 V	400 V
		DC	60 V	60 V	100 V	200 V	350 V	400 V	600 V	400 V
	Continuous load current	1 A								
		0.5 A								
	Peak load current		3.0 A	1.2 A	0.96 A	0.54 A	0.4 A	0.3 A	0.15 A	0.3 A
	Power dissipation*		500 mW	500 mW						
	ON resistance	Typical	0.34 Ω	0.83 Ω	2.3 Ω	11 Ω	23 Ω	30 Ω	70 Ω	30 Ω
		Maximum	0.7 Ω	2.5 Ω	4 Ω	15 Ω	35 Ω	50 Ω	120 Ω	50 Ω
Output capacitance (Typical)		220 pF	80 pF	110 pF	70 pF	45 pF				
Off state leakage current		Max. 1 μA	Max. 1 μA							
• Input	LED forward current*		50 mA	50 mA						
	LED reverse voltage*		5 V	5 V						
	Peak forward current		1 A	1 A						
	Power dissipation*		75 mW	75 mW						
	LED operate current [LED operate (OFF) current]	Typical	1.1 mA	1 mA						1.3 mA
		Maximum	3.0 mA	3 mA						3 mA
LED turn off current [LED reverse (ON) current]	Minimum	0.3 mA	0.4 mA						0.4 mA	
	Typical	1.0 mA	0.79 mA						1.2 mA	
LED dropout voltage (If = 5 mA)	Typical	1.14 V	1.14 V							
	Maximum	1.5 V	1.5 V							
• Switching speed	Turn on time [Operate (OFF) time]	Typical	1.3 ms	0.65 ms	0.60 ms	0.25 ms	0.25 ms	0.21 ms	0.28 ms	0.6 ms
	Maximum	5.0 ms	2 ms	2 ms	1 ms	0.5 ms	0.5 ms	0.5 ms	0.5 ms	0.8 ms
	Turn off time [Reverse (ON) time]	Typical	0.1 ms	0.08 ms	0.06 ms	0.05 ms	0.05 ms	0.05 ms	0.04 ms	0.05 ms
	Maximum	0.5 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms
• Total power dissipation*		550 mW	550 mW							
• I/O isolation voltage*		5,000 V AC	1,500 V AC						5,000 V AC	
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F							
	Storage*	-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F							
• I/O capacitance	Typical	0.8 pF	0.8 pF							
	Maximum	1.5 pF	1.5 pF							
• Initial I/O isolation resistance		Min. 1,000 MΩ	Min. 1,000 MΩ							
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)			Surface mount terminal recommended mounting pad (Top view)		Through hole terminal (Bottom view)		Surface mount terminal recommended mounting pad (Top view)		
								Tolerance: ±0.1 ±.004		
• Standards		UL, C-UL, VDE		UL (E43149), C-UL						UL (E43149), C-UL, BSI, VDE
• Mounting method										

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

# PhotoMOS Selector Chart

• Type of relay		GU SOP Type				GU Type				
		2a Types				2a Type				
		AC/DC Type				AC/DC Type				
		8-Pin				8-Pin				
										
• Features		• 2-channel in SO package				• 2 Form A type • Approx. 1/2 smaller compared with proximity mounting of two 1 Form A units				
		Part No.	AQW210S	AQW214S	AQW212	AQW215	AQW217	AQW210	AQW214	AQW216
• Output	Load voltage*	Peak AC	350 V	400 V	60 V	100 V	200 V	350 V	400 V	600 V
		DC	350 V	400 V	60 V	100 V	200 V	350 V	400 V	600 V
	Continuous load current	1 A								
		0.5 A								
	Peak load current		0.1 A	0.08 A	1.0 A	0.9 A	0.48 A	0.36 A	0.3 A	0.12 A
	Power dissipation*		600 mW		800 mW		800 mW		800 mW	
	ON resistance	Typical	16 Ω	30 Ω	0.83 Ω	2.3 Ω	11 Ω	23 Ω	30 Ω	70 Ω
		Maximum	35 Ω	50 Ω	2.5 Ω	4.0 Ω	15 Ω	35 Ω	50 Ω	120 Ω
	Output capacitance (Typical)		45 pF		150 pF	110 pF	70 pF	45 pF	45 pF	45 pF
	Off state leakage current		Max. 1 μA		Max. 1 μA		Max. 1 μA		Max. 1 μA	
• Input	LED forward current*		50 mA		50 mA		50 mA		50 mA	
	LED reverse voltage*		5 V		5 V		5 V		5 V	
	Peak forward current		1 A		1 A		1 A		1 A	
	Power dissipation*		75 mW		75 mW		75 mW		75 mW	
	LED operate current [LED operate (OFF) current]	Typical	0.9 mA		0.9 mA		0.9 mA		1.0 mA	0.9 mA
		Maximum	3.0 mA		3.0 mA		3.0 mA		3.0 mA	3.0 mA
	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA		0.4 mA		0.4 mA		0.4 mA	0.4 mA
Typical		0.8 mA		0.8 mA		0.8 mA		0.79 mA	0.8 mA	
LED dropout voltage (If = 5 mA)	Typical	1.14 V		1.14 V		1.14 V		1.14 V		
	Maximum	1.5 V		1.5 V		1.5 V		1.5 V		
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.23 ms	0.21 ms	0.65 ms	0.60 ms	0.25 ms	0.25 ms	0.31 ms	0.28 ms
	Maximum		0.5 ms	0.5 ms	2 ms	2 ms	1 ms	0.5 ms	0.5 ms	0.5 ms
	Turn off time [Reverse (ON) time]	Typical	0.04 ms		0.08 ms	0.06 ms	0.05 ms	0.05 ms	0.05 ms	0.04 ms
		Maximum	0.2 ms		0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms
• Total power dissipation*		650 mW		850 mW		850 mW		850 mW		
• I/O isolation voltage*		1,500 V AC		1,500 V AC		1,500 V AC		1,500 V AC		
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F		
	Storage*	-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		
• I/O capacitance	Typical	0.8 pF		0.8 pF		0.8 pF		0.8 pF		
	Maximum	1.5 pF		1.5 pF		1.5 pF		1.5 pF		
• Initial I/O isolation resistance		Min. 1,000 MΩ		Min. 1,000 MΩ		Min. 1,000 MΩ		Min. 1,000 MΩ		
• Terminal layout (.100, inch grid)	Recommended mounting pad (Top view)			Through hole terminal (Bottom view)		Surface mount terminal recommended mounting pad (Top view)				
										
				Tolerance: ±0.1 ±.004						
• Standards		UL (E43149), C-UL, BSI		UL (E43149), C-UL		UL (E43149), C-UL		UL (E43149), C-UL		
• Mounting method										

• Type of relay		GU SOP Type				GU Type			
		1b Types				1b Type		2b Type	
		AC/DC Type				AC/DC Type		AC/DC Type	
		4-Pin		6-Pin		6-Pin		8-Pin	
		mm inch							
• Features		• Super miniature design • SOP (1 Form B) 4-pin type		• Ultra small size • SOP (1 Form B) 6-pin type		• Normally-closed type (1 Form B)		• 2 Form B type • Approx. 1/2 smaller compared with proximity mounting of two 1 Form B units	
		Part No.	AQY410S	AQY414S	AQV414S	AQV414	AQW414		
• Output	Load voltage*	Peak AC	350 V	400 V	400 V	400 V	400 V		
		DC	350 V	400 V	400 V	400 V	400 V		
• Output	Continuous load current	1 A							
		0.5 A							
	Peak load current	0.3 A	0.24 A	0.3 A	0.3 A	0.3 A			
	Power dissipation*	300 mW		450 mW	500 mW	800 W			
	ON resistance	Typical	18 Ω	26 Ω	26 Ω	26 Ω			
		Maximum	25 Ω	35 Ω	50 Ω	50 Ω			
	Output capacitance (Typical)	110 pF		100 pF	100 pF	100 pF			
Off state leakage current	Max. 1 μA		Max. 1 μA	Max. 1 μA	Max. 1 μA				
• Input	LED forward current*	50 mA		50 mA	50 mA	50 mA			
	LED reverse voltage*	5 V		5 V	5 V	5 V			
	Peak forward current	1 A		1 A	1 A	1 A			
	Power dissipation*	75 mW		75 mW	75 mW	75 mW			
	LED operate current [LED operate (OFF) current]	Typical	0.9 mA	0.6 mA	1 mA	0.7 mA			
		Maximum	3.0 mA	3.0 mA	3 mA	3.0 mA			
	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA	0.4 mA	0.4 mA	0.4 mA			
	Typical	0.85 mA	0.55 mA	0.95 mA	0.64 mA				
LED dropout voltage (If = 5 mA)	Typical	1.14 V	1.14 V	1.14 V	1.14 V				
	Maximum	1.5 V	1.5 V	1.5 V	1.5 V				
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.52 ms	0.47 ms	0.47 ms	0.46 ms			
		Maximum	1.0 ms	1.0 ms	1.0 ms	1.0 ms			
	Turn off time [Reverse (ON) time]	Typical	0.23 ms	0.28 ms	0.28 ms	0.40 ms			
		Maximum	1.0 ms	1.0 ms	1.0 ms	1.0 ms			
• Total power dissipation*	350 mW		500 mW	550 mW	850 mW				
• I/O isolation voltage*	1,500 V AC		1,500 V AC	1,500 V AC	1,500 V AC				
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F			
	Storage*	-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F			
• I/O capacitance	Typical	0.8 pF	-	0.8 pF	0.8 pF	0.8 pF			
		Maximum	1.5 pF	1.5 pF	1.5 pF	1.5 pF			
• Initial I/O isolation resistance	Min. 1,000 MΩ		Min. 1,000 MΩ	Min. 1,000 MΩ	Min. 1,000 MΩ				
• Terminal layout (.100, inch grid)	Recommended mounting pad (Top view)								
	mm inch					Tolerance: ±0.1 ±.004		Tolerance: ±0.1 ±.004	
• Standards	UL, C-UL, BSI		UL, C-UL, BSI	UL (E43149), C-UL	UL (E43149), C-UL	UL (E43149), C-UL			
• Mounting method									

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

# PhotoMOS Selector Chart

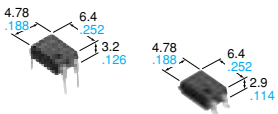
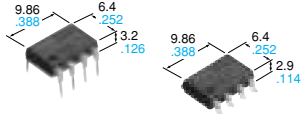
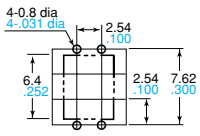
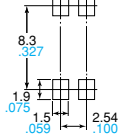
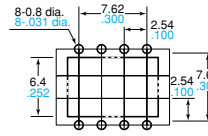
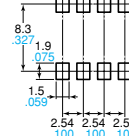


• Type of relay		GU SOP Type		GU Type	
		1a1b Type		1a1b Type	
		AC/DC Type		AC/DC Type	
		8-Pin		8-Pin	
• Features		• 2-channel (Form A/Form B) type		• 1 Form A 1 Form B type	
		Part No.	AQW610S	AQW614	
• Output	Load voltage*	Peak AC	350 V	400 V	
		DC	350 V	400 V	
• Output	Continuous load current	1 A	.....		
		0.5 A	.....		
	Peak load current	0.1 A	0.1 A		
	Peak load current	0.3 A	0.3 A		
	Power dissipation*	600 mW	800 W		
	ON resistance	Typical	18 Ω	27 Ω	
		Maximum	25 Ω	50 Ω	
Output capacitance (Typical)		45 pF (N.O.), 100 pF (N.C.)		45 pF (N.O.), 100 pF (N.C.)	
Off state leakage current		Max. 1 μA		Max. 1 μA	
• Input	LED forward current*		50 mA	50 mA	
	LED reverse voltage*		5 V	5 V	
	Peak forward current		1 A	1 A	
	Power dissipation*		75 mW	75 mW	
	LED operate current [LED operate (OFF) current]	Typical	0.9 mA	0.7 mA (N.O.) 0.9 mA (N.C.)	
		Maximum	3 mA	3 mA	
	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA	0.4 mA	
		Typical	0.8 mA	0.7 mA (N.O.) 0.8 mA (N.C.)	
LED dropout voltage (If = 5 mA)	Typical	1.14 V	1.14 V		
	Maximum	1.5 V	1.5 V		
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.28 ms (N.O.) 0.52 ms (N.C.)	0.28 ms (N.O.) 0.43 ms (N.C.)	
	Maximum	1 ms	1 ms		
• Switching speed	Turn off time [Reverse (ON) time]	Typical	0.04 ms (N.O.) 0.23 ms (N.C.)	0.04 ms (N.O.) 0.3 ms (N.C.)	
	Maximum	1 ms	1 ms		
• Total power dissipation*		650 mW	850 mW		
• I/O isolation voltage*		1,500 V AC	1,500 V AC		
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F	
	Storage*	-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F	
• I/O capacitance	Typical	0.8 pF	0.8 pF		
	Maximum	1.5 pF	1.5 pF		
• Initial I/O isolation resistance		Min. 1,000 MΩ		Min. 1,000 MΩ	
• Terminal layout (.100, inch grid)	Recommended mounting pad (Top view)		Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)	
		Tolerance: ±0.1 ±.004			
• Standards		UL (E43149), C-UL, BSI		UL (E43149), C-UL	
• Mounting method					

• Type of relay		GU SOP Short Circuit Protection Type (Latch type)		GU Short Circuit Protection Non Latching Type		GU SOP Current Limit Function Type			
		1a Type		1a Type		1a Type			
		AC/DC Type		DC Type		AC/DC Type			
		4-pin		6-Pin		4-Pin			
mm inch									
		• Short circuit protection • SO package 4-pin type in super miniature design		• Protects relay and circuits connected after a relay from over current and over voltage • High capacity type		• Current Limit Function • SO package 4-Pin type in super miniature design			
• Features		Part No.	AQY210KS	AQV112KL	AQY210LS				
		Load voltage*	Peak AC	350 V	—	350 V			
			DC	350 V	60 V	350 V			
• Output		1 A							
		Continuous load current		0.5 A					
				0.12 A					
		Peak load current		0.2 A (Cut off current [typ.])		—		0.18 A (Output Limit Current [typ.])	
		Power dissipation*		300 mW		550 mW		350 mW	
		ON resistance		Typical 23.5 Ω Maximum 35 Ω		0.55 Ω 2.0 Ω		20 Ω 25 Ω	
		Output capacitance (Typical)		42 pF		300 pF		45 pF	
Off state leakage current		Max. 1 μA		Max. 1 μA		Max. 1 μA			
• Input		LED forward current*		50 mA		50 mA			
		LED reverse voltage*		5 V		5 V		5 V	
		Peak forward current		1 A		1 A		1 A	
		Power dissipation*		75 mW		75 mW		75 mW	
		LED operate current [LED operate (OFF) current]		Typical 1.1 mA Maximum 3.0 mA		0.8 mA 10 mA		1.2 mA 3.0 mA	
		LED turn off current [LED reverse (ON) current]		Minimum 0.3 mA Typical 1.0 mA		0.3 mA 0.7 mA		0.4 mA 1.1 mA	
LED dropout voltage (If = 5 mA)		Typical 1.13 V Maximum 1.5 V		1.17 V (If = 10 mA) 1.5 V		1.14 V 1.5 V			
• Switching speed		Turn on time [Operate (OFF) time]		Typical 0.7 ms Maximum 2.0 ms		2.0 ms 5.0 ms			
		Turn off time [Reverse (ON) time]		Typical 0.07 ms Maximum 1.0 ms		0.1 ms 1.0 ms		0.08 ms 1.0 ms	
• Total power dissipation*		350 mW		550 mW		400 mW			
• I/O isolation voltage*		1,500 V AC		1,500 V AC		1,500 V AC			
• Temperature limits		Operating*		-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F			
		Storage*		-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F	
• I/O capacitance		Typical 0.8 pF Maximum 1.5 pF		0.8 pF 1.5 pF		0.8 pF 1.5 pF			
• Initial I/O isolation resistance		Min. 1,000 MΩ		Min. 1,000 MΩ		Min. 1,000 MΩ			
• Terminal layout (.100, inch grid)		Recommended mounting pad (Top view)		Through hole terminal (Bottom view)		Surface mount terminal recommended mounting pad (Top view)			
mm inch									
• Standards		UL, C-UL, BSI		UL, C-UL, VDE		UL (E43149), C-UL, BSI			
• Mounting method									

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.



# PhotoMOS Selector Chart

• Type of relay		GU Current Limit Function Type					
		1a Type		2a Type			
		AC/DC Type		AC/DC Type			
		4-Pin		8-Pin			
mm inch							
		Reinforced I/O isolation type					
• Features		<ul style="list-style-type: none"> <li>• Current Limit Function</li> <li>• Reinforced insulation 5,000 V type</li> <li>• Compact 4-pin DIP size</li> </ul>		<ul style="list-style-type: none"> <li>• Current Limit Function</li> <li>• Reinforced insulation 5,000 V type</li> <li>• Compact 8-pin DIP size</li> </ul>			
		Part No.	AQY210HL		AQW210HL		
• Output	Load voltage*	Peak AC	350 V		350 V		
		DC	350 V		350 V		
• Output	Continuous load current	1 A	.....		.....		
		0.5 A	.....		.....		
	Peak load current	0.18 A (Output Limit Current [typ.])		0.18 A (Output Limit Current [typ.])			
	Power dissipation*	500 mW		800 mW			
	ON resistance	Typical	20 Ω		20 Ω		
		Maximum	25 Ω		25 Ω		
	Output capacitance (Typical)	45 pF		45 pF			
Off state leakage current	Max. 1 μA		Max. 1 μA				
• Input	LED forward current*	50 mA		50 mA			
	LED reverse voltage*	5 V		5 V			
	Peak forward current	1 A		1 A			
	Power dissipation*	75 mW		75 mW			
	LED operate current [LED operate (OFF) current]	Typical	1.2 mA		1.2 mA		
		Maximum	3.0 mA		3.0 mA		
	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA		0.4 mA		
Typical		1.1 mA		1.1 mA			
LED dropout voltage (If = 5 mA)	Typical	1.14 V		1.14 V			
	Maximum	1.5 V		1.5 V			
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.5 ms		0.5 ms		
		Maximum	2.0 ms		2.0 ms		
	Turn off time [Reverse (ON) time]	Typical	0.08 ms		0.08 ms		
		Maximum	1.0 ms		1.0 ms		
• Total power dissipation*		550 mW		850 mW			
• I/O isolation voltage*		5,000 V AC		5,000 V AC			
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F			
	Storage*	-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F			
• I/O capacitance	Typical	0.8 pF		0.8 pF			
	Maximum	1.5 pF		1.5 pF			
• Initial I/O isolation resistance		Min. 1,000 MΩ		Min. 1,000 MΩ			
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)		Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)		
							
mm inch				Tolerance: ±0.1 ±.004			
• Standards		UL (E43149), C-UL, BSI		UL (E43149), C-UL, BSI			
• Mounting method				 			



• Type of relay		GU-E Type					
		1a Types					
		AC/DC Type					
		4-Pin		4-Pin		4-Pin	
mm inch							
		Reinforced I/O isolation type					
• Features		<ul style="list-style-type: none"> <li>• General use and economy type</li> <li>• DIP (1 Form A) 4-pin type</li> </ul>					
		Part No.	AQY211EH	AQY212EH	AQY210EH	AQY214EH	AQY216EH
• Output	Load voltage*	Peak AC	30 V	60 V	350 V	400 V	600 V
		DC	30 V	60 V	350 V	400 V	600 V
• Output	Continuous load current	1 A					
		0.5 A	3 A	1.5 A	0.4 A	0.3 A	0.15 A
		Peak load current	500 mW		500 W		500 mW
		Power dissipation*	500 mW		500 W		500 mW
• Input	ON resistance	Typical	0.25 Ω	0.85 Ω	18 Ω	26 Ω	52 Ω
		Maximum	0.5 Ω	2.5 Ω	25 Ω	35 Ω	120 Ω
		Output capacitance (Typical)	240 pF	80 pF	45 pF		35 pF
		Off state leakage current	Max. 1 μA		Max. 1 μA		Max. 1 μA
• Input	LED forward current*		50 mA		50 mA		50 mA
	LED reverse voltage*		5 V		5 V		5 V
	Peak forward current		1 A		1 A		1 A
	Power dissipation*		75 mW		75 mW		75 mW
	LED operate current [LED operate (OFF) current]	Typical	1.2 mA		1.2 mA		1.2 mA
		Maximum	3 mA		3.0 mA		3 mA
LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA		0.4 mA		0.4 mA	
	Typical	1.1 mA		1.1 mA		1.1 mA	
LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical	1.14 V		1.14 V		1.14 V	
	Maximum	1.5 V		1.5 V		1.5 V	
• Switching speed	Turn on time [Operate (OFF) time]	Typical	1.5 ms	1 ms	0.5 ms		0.5 ms
		Maximum	5 ms	4 ms	2.0 ms		2 ms
• Switching speed	Turn off time [Reverse (ON) time]	Typical	0.1 ms	0.05 ms	0.08 ms		0.04 ms
		Maximum	1 ms	1 ms	1.0 ms		1 ms
• Total power dissipation*		550 mW		550 mW		550 mW	
• I/O isolation voltage*		5,000 V AC		5,000 V AC		5,000 V AC	
• Temperature limits	Operating*		-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F
	Storage*		-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F
• I/O capacitance	Typical	0.8 pF		0.8 pF		0.8 pF	
		Maximum	1.5 pF		1.5 pF		1.5 pF
• Initial I/O isolation resistance		Min. 1,000 MΩ		Min. 1,000 MΩ		Min. 1,000 MΩ	
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)				Surface mount terminal recommended mounting pad (Top view)		
	mm inch						
• Standards		UL, C-UL	UL, C-UL, BSI	UL (E43149), BSI, C-UL		UL, C-UL, BSI	
• Mounting method							

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

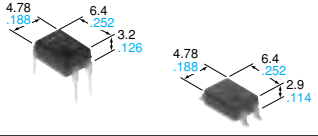
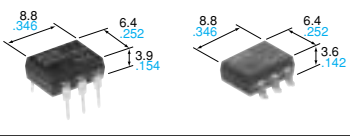
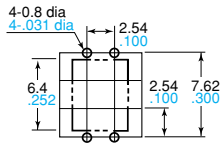
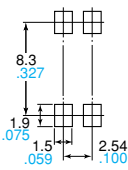
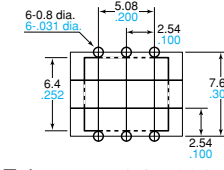
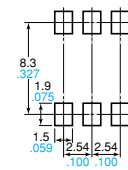


# PhotoMOS Selector Chart

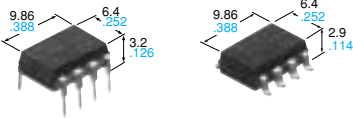
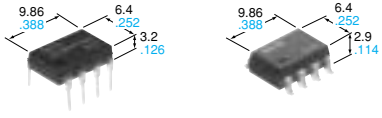
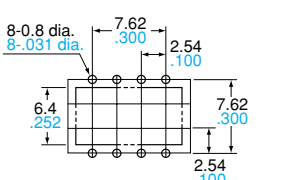
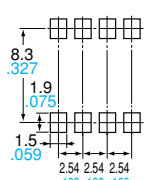
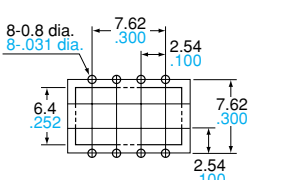
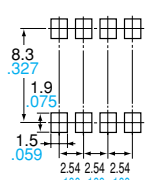

• Type of relay		GU-E Type				
		1a Types				
		AC/DC Type				
		6-Pin				
mm inch						
		Reinforced I/O isolation type				
• Features		• General use and economy (1 Form A) type				
		Part No.	AQV210E	AQV214E	AQV210EH	AQV214EH
• Output	Load voltage*	Peak AC	350 V	400 V	350 V	400 V
		DC	350 V	400 V	350 V	400 V
• Output	Continuous load current	1 A	-----			
		0.5 A	-----			
	Peak load current	0.4 A	0.3 A	0.4 A	0.3 A	
	Power dissipation*	500 mW				
	ON resistance	Typical	23 Ω	30 Ω	23 Ω	30 Ω
	Maximum	35 Ω	50 Ω	35 Ω	50 Ω	
Output capacitance (Typical)		45 pF				
Off state leakage current		Max. 1 μA				
• Input	LED forward current*		50 mA			
	LED reverse voltage*		5 V			
	Peak forward current		1 A			
	Power dissipation*		75 mW			
	LED operate current [LED operate (OFF) current]	Typical	1.1 mA		1.6 mA	
		Maximum	3.0 mA		3.0 mA	
LED turn off current [LED reverse (ON) current]	Minimum	0.3 mA		0.4 mA		
	Typical	1.0 mA		1.5 mA		
LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical	1.14 V				
	Maximum	1.5 V				
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.5 ms		0.7 ms	
		Maximum	2.0 ms		2.0 ms	
• Switching speed	Turn off time [Reverse (ON) time]	Typical	0.05 ms			
		Maximum	1.0 ms			
• Total power dissipation*		550 mW				
• I/O isolation voltage*		1,500 V AC		5,000 V AC		
• Temperature limits	Operating*		-40°C to +85°C -40°F to +185°F			
	Storage*		-40°C to +100°C -40°F to +212°F			
• I/O capacitance		Typical	0.8 pF			
		Maximum	1.5 pF			
• Initial I/O isolation resistance		Min. 1,000 MΩ				
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)		Surface mount terminal recommended mounting pad (Top view)			
mm inch		Tolerance: ±0.1 ±.004				
• Standards		UL (E43149), C-UL		UL (E43149), C-UL, BSI, VDE		
• Mounting method						

• Type of relay		GU-E Type						
		2a Types						
		AC/DC Type						
mm inch								
		Reinforced I/O isolation type						
• Features		<ul style="list-style-type: none"> <li>• General use and economy type</li> <li>• DIP (2 Form A) 8-pin type</li> </ul>						
		Part No.	AQW212EH	AQW210EH	AQW214EH	AQW216EH		
• Output	Load voltage*	Peak AC	60 V	350 V	400 V	600 V		
		DC	60 V	350 V	400 V	600 V		
• Output	Continuous load current	1 A						
		0.5 A						
	Peak load current	1.5 A		0.36 A	0.3 A	0.12 A		
	Power dissipation*	800 mW		800 mW		800 mW		
	ON resistance	Typical	0.83 Ω	18 Ω	26 Ω	52 Ω		
		Maximum	2.5 Ω	25 Ω	35 Ω	120 Ω		
	Output capacitance (Typical)	80 pF		45 pF		35 pF		
Off state leakage current	Max. 1 μA		Max. 1 μA		Max. 1 μA			
• Input	LED forward current*	50 mA		50 mA		50 mA		
	LED reverse voltage*	5 V		5 V		5 V		
	Peak forward current	1 A		1 A		1 A		
	Power dissipation*	75 mW		75 mW		75 mW		
	LED operate current [LED operate (OFF) current]	Typical	1.2 mA	1.2 mA	3.0 mA	1.2 mA		
		Maximum	3 mA	3.0 mA	3.0 mA	3 mA		
• Switching speed	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA	0.4 mA	0.4 mA			
		Typical	1.1 mA	1.1 mA	1.1 mA			
	LED dropout voltage (If = 5 mA)	Typical	1.14 V	1.14 V	1.14 V			
	Maximum	1.5 V	1.5 V	1.5 V				
• Switching speed	Turn on time [Operate (OFF) time]	Typical	1.0 ms	0.5 ms	0.5 ms			
		Maximum	4.0 ms	2.0 ms	2 ms			
	Turn off time [Reverse (ON) time]	Typical	0.08 ms	0.08 ms	0.04 ms			
		Maximum	1.0 ms	1.0 ms	1 ms			
• Total power dissipation*	850 mW		850 mW		850 mW			
• I/O isolation voltage*	5,000 V AC		5,000 V AC		5,000 V AC			
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F		
	Storage*	-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		
• I/O capacitance	Typical	-	0.8 pF	0.8 pF		0.8 pF		
	Maximum	1.5 pF	1.5 pF	1.5 pF		1.5 pF		
• Initial I/O isolation resistance	Min. 1,000 MΩ		Min. 1,000 MΩ		Min. 1,000 MΩ			
• Terminal layout (.100, inch grid)	mm inch							
	Tolerance: ±0.1 ±.004							
• Standards	UL, C-UL, BSI		UL (E43149), C-UL, BSI		UL, C-UL, BSI			
• Mounting method								

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

# PhotoMOS Selector Chart

• Type of relay		GU-E Type								
		1b Types		1b Types						
		AC/DC Type		AC/DC Type						
		4-Pin		6-Pin						
mm inch										
		Reinforced I/O isolation type		Standard I/O isolation type	Reinforced I/O isolation type					
• Features		<ul style="list-style-type: none"> <li>• General use and economy type</li> <li>• DIP (1 Form B) 4-pin type</li> </ul>		<ul style="list-style-type: none"> <li>• General use and economy (1 Form B) type</li> </ul>						
		<b>Part No.</b>	AQY410EH	AQY414EH	AQV414E	AQV410EH	AQV414EH			
• Output		Load voltage*	Peak AC	350 V	400 V	400 V	350 V	400 V		
			DC	350 V	400 V	400 V	350 V	400 V		
		Continuous load current	1 A							
			0.5 A							
		Peak load current	0.13 A		0.12 A		0.12 A		0.13 A	
			0.4 A		0.3 A		0.3 A		0.4 A	
		Power dissipation*	500 mW			500 mW				
		ON resistance	Typical	18 Ω	26 Ω	26 Ω	18 Ω	26 Ω		
			Maximum	25 Ω	35 Ω	50 Ω	35 Ω	50 Ω		
		Output capacitance (Typical)	110 pF	100 pF	100 pF	110 pF	100 pF			
		Off state leakage current	Max. 10 μA		Max. 1 μA		Max. 10 μA			
• Input		LED forward current*	50 mA			50 mA				
		LED reverse voltage*	5 V			5 V				
		Peak forward current	1 A			1 A				
		Power dissipation*	75 mW			75 mW				
		LED operate current [LED operate (OFF) current]	Typical	1.4 mA	1.4 mA	1.45 mA	1.9 mA	1.75 mA		
			Maximum	3 mA	3.0 mA	3.0 mA	3.0 mA	3.0 mA		
LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA	0.4 mA	0.3 mA	0.4 mA	0.4 mA				
	Typical	1.3 mA	1.3 mA	1.40 mA	1.8 mA	1.70 mA				
LED dropout voltage (f <sub>r</sub> = 5 mA)	Typical	1.14 V			1.14 V					
	Maximum	1.5 V			1.5 V					
• Switching speed	Turn on time [Operate (OFF) time]	Typical	1.0 ms	0.8 ms	0.7 ms	1.5 ms	1.3 ms			
		Maximum	3.0 ms	3.0 ms	2.0 ms	3.0 ms	3.0 ms			
	Turn off time [Reverse (ON) time]	Typical	0.3 ms	0.2 ms	0.1 ms	0.3 ms	0.3 ms			
		Maximum	1.0 ms	1.0 ms	1.0 ms	1.5 ms	1.5 ms			
• Total power dissipation*		550 mW			550 mW					
• I/O isolation voltage*		5,000 V AC			1,500 V AC	5,000 V AC				
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F			-40°C to +85°C -40°F to +185°F					
	Storage*	-40°C to +100°C -40°F to +212°F			-40°C to +100°C -40°F to +212°F					
• I/O capacitance	Typical	0.8 pF			0.8 pF					
	Maximum	1.5 pF			1.5 pF					
• Initial I/O isolation resistance		Min. 1,000 MΩ			Min. 1,000 MΩ					
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)		Surface mount terminal recommended mounting pad (Top view)		Through hole terminal (Bottom view)		Surface mount terminal recommended mounting pad (Top view)			
										
				Tolerance: ±0.1 ±.004						
• Standards		UL (E43149), BSI, C-UL			UL (E43149), C-UL	UL (E43149), C-UL, BSI	UL (E43149), C-UL, BSI, VDE			
• Mounting method		 								

• Type of relay		GU-E Type				
		2b Types		1a1b Types		
		AC/DC Type		AC/DC Type		
		8-Pin		8-Pin		
mm inch						
		Reinforced I/O isolation type		Reinforced I/O isolation type		
• Features		<ul style="list-style-type: none"> <li>• General use and economy type</li> <li>• DIP (2 Form B) 8-pin type</li> </ul>		<ul style="list-style-type: none"> <li>• General use and economy type</li> <li>• DIP (1 Form A 1 Form B) 8-pin type</li> </ul>		
		Part No.	AQW414EH	AQW610EH	AQW614EH	
• Output	Load voltage*	Peak AC	400 V	350 V	400 V	
		DC	400 V	350 V	400 V	
	Continuous load current	1 A	.....		.....	
		0.5 A	.....		.....	
	Peak load current		0.1 A	0.12 A	0.1 A	
	Power dissipation*		0.3 A	0.36 A	0.3 A	
	ON resistance	Typical	26 Ω	18 Ω	26 Ω	
		Maximum	35 Ω	25 Ω	35 Ω	
Output capacitance (Typical)		100 pF	45 pF(N.O.), 100 pF(N.C.)			
Off state leakage current		Max. 10 μA	Max. 1 μA(N.O.) 10 μA(N.C.)			
• Input	LED forward current*		50 mA	50 mA		
	LED reverse voltage*		5 V	5 V		
	Peak forward current		1 A	1 A		
	Power dissipation*		75 mW	75 mW		
	LED operate current [LED operate (OFF) current]	Typical	1.3 mA	1.3 mA	1.3 mA	
		Maximum	3.0 mA	3.0 mA	3.0 mA	
LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA	0.4 mA	0.4 mA		
	Typical	1.2 mA	1.2 mA	1.2 mA		
LED dropout voltage (If = 5 mA)	Typical	1.14 V	1.14 V	1.14 V		
	Maximum	1.5 V	1.5 V	1.5 V		
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.8 ms	0.5 ms(N.O.) 1.0 ms(N.C.)	0.5 ms(N.O.) 0.8 ms(N.C.)	
		Maximum	3.0 ms	3.0 ms	3.0 ms	
	Turn off time [Reverse (ON) time]	Typical	0.2 ms	0.08 ms(N.O.) 0.3 ms(N.C.)	0.08 ms(N.O.) 0.2 ms(N.C.)	
		Maximum	1.0 ms	1.0 ms	1.0 ms	
• Total power dissipation*			850 mW	850 mW		
• I/O isolation voltage*			5,000 V AC	5,000 V AC		
• Temperature limits	Operating*		-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F		
	Storage*		-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F		
• I/O capacitance	Typical		0.8 pF	0.8 pF		
	Maximum		1.5 pF	1.5 pF		
• Initial I/O isolation resistance			Min. 1,000 MΩ	Min. 1,000 MΩ		
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)			Mounting pad (Top view)		
	Through hole terminal (Bottom view)			Mounting pad (Top view)		
mm inch						
• Standards			UL (E43149), C-UL, BSI	UL (E43149), C-UL, BSI		
• Mounting method						

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

# PhotoMOS Selector Chart

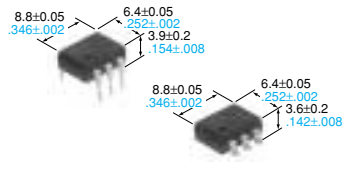
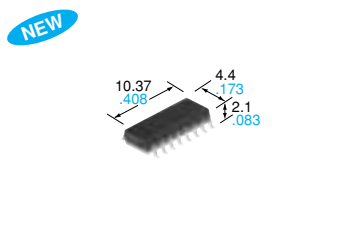
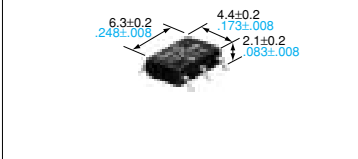
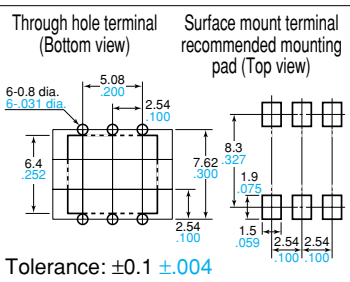
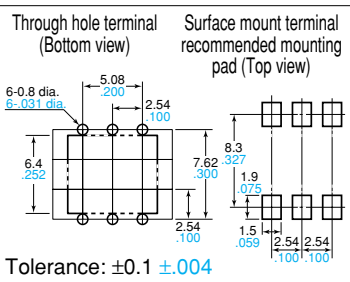
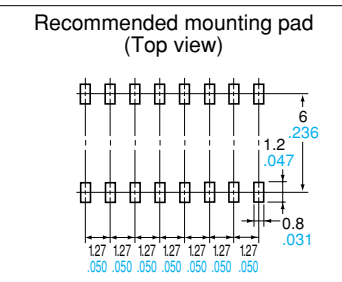
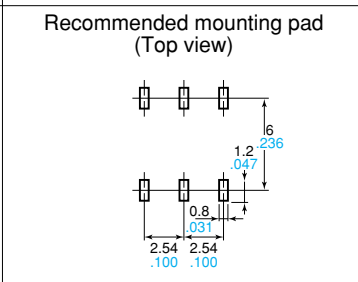
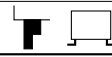


• Type of relay		RF Type		RF Low CXR5(C) Type	RF SSOP CXR10 R Type	RF SSOP CXR10 C Type	
		1a Type		1a Type	1a Type	1a Type	
		AC/DC Type		AC/DC Type	AC/DC Type	AC/DC Type	
		6-Pin		4-Pin	4-Pin	4-Pin	
• Features		<ul style="list-style-type: none"> <li>For high frequency applications</li> <li>High speed switching</li> </ul>		<ul style="list-style-type: none"> <li>Reduced package size</li> <li>Lower output capacitance and on resistance</li> </ul>			
		Part No.	AQV221	AQV225	AQY221N3V	AQY221R2V	AQY221N2V
• Output	Load voltage*	Peak AC	40 V	80 V	25 V	40 V	40 V
		DC	40 V	80 V	25 V	40 V	40 V
• Output	Continuous load current	1 A					
		0.5 A					
	Peak load current	0.18 A	0.15 A	0.4 A	0.75 A	0.3 A	
	Power dissipation*	230 mW		250 mW	250 mW	250 mW	
	ON resistance	Typical	22 Ω	36 Ω	5.5 Ω	0.75 Ω	9.5 Ω
		Maximum	35 Ω	50 Ω	7.5 Ω	1.25 Ω	12.5 Ω
	Output capacitance (Typical)	5.6 pF	4.8 pF	1 pF	12.5 pF	1.0 pF	
Off state leakage current	Max. 10 nA						
• Input	LED forward current*	50 mA					
	LED reverse voltage*	5 V					
	Peak forward current	1 A					
	Power dissipation*	75 mW					
	LED operate current [LED operate (OFF) current]	Typical	0.9 mA	3.0 mA	1 mA	0.9 mA	1.0 mA
		Maximum	3.0 mA	3.0 mA	3 mA	3.0 mA	3.0 mA
	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA	0.85 mA	0.2 mA	0.1 mA	0.2 mA
Typical		0.85 mA	0.85 mA	0.9 mA	0.8 mA	0.9 mA	
LED dropout voltage (If = 5 mA)	Typical	1.14 V	1.5 V	1.14 V	1.14 V	1.14 V	
	Maximum	1.5 V	1.5 V	1.5 V	1.5 V	1.5 V	
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.10 ms	0.02 ms	0.1 ms	0.02 ms	
		Maximum	0.3 ms	0.2 ms	0.5 ms	0.5 ms	
	Turn off time [Reverse (ON) time]	Typical	0.03 ms	0.02 ms	0.08 ms	0.02 ms	
		Maximum	0.1 ms	0.2 ms	0.2 ms	0.2 ms	
• Total power dissipation*		280 mW					
• I/O isolation voltage*		1,500 V AC					
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F					
	Storage*	-40°C to +100°C -40°F to +212°F					
• I/O capacitance	Typical	0.8 pF					
	Maximum	1.5 pF					
• Initial I/O isolation resistance		Min. 1,000 MΩ					
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)			Surface mount terminal recommended mounting pad (Top view)			
		Tolerance: ±0.1 ±.004					
• Standards		UL (E43149), C-UL		(UL, C-UL)		(UL, C-UL)	
• Mounting method							

• Type of relay		RF C × R 10 R Type		RF C × R 10 C Type		RF C × R 20 Type	
		1a Type		1a Type		1a Type	
		AC/DC Type		AC/DC Type		AC/DC Type	
		4-Pin		4-Pin		4-Pin	
mm inch							
		• Low-level off state leakage current of 10pA • High speed switching		• Low output capacitance between output terminals and low ON-resistance		• Low output capacitance between output terminals and low ON-resistance	
• Features		Part No.	AQY221R2S	AQY221N2S	AQY221N1S		
• Output	Load voltage*	Peak AC	40 V	40 V	40 V		
		DC	40 V	40 V	40 V		
	Continuous load current	1 A					
		0.5 A					
	Peak load current		0.25 A	0.12 A	0.12 A		
	Power dissipation*		300 mW	300 mW	300 mW		
	ON resistance	Typical	0.8 Ω	9.5 Ω	9.8 Ω		
		Maximum	1.25 Ω	12.5 Ω	12.5 Ω		
	Output capacitance (Typical)		13 pF	1.0 pF	2.0 pF		
	Off state leakage current		10 nA	10 nA	10 nA		
• Input	LED forward current*		50 mA	50 mA	50 mA		
	LED reverse voltage*		5 V	5 V	3 V		
	Peak forward current		1 A	1 A	1 A		
	Power dissipation*		75 mW	75 mW	75 mW		
	LED operate current [LED operate (OFF) current]	Typical	0.5 mA	0.9 mA	0.9 mA		
		Maximum	3.0 mA	3.0 mA	3.0 mA		
	LED turn off current [LED reverse (ON) current]	Minimum	0.1 mA	0.2 mA	0.4 mA		
		Typical	0.4 mA	0.85 mA	0.85 mA		
LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical	1.14 V	1.14 V	1.14 V			
	Maximum	1.5 V	1.5 V	1.5 V			
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.1 ms	0.03 ms	0.04 ms		
		Maximum	0.5 ms	0.5 ms	0.5 ms		
Turn off time [Reverse (ON) time]	Typical	0.06 ms	0.03 ms	0.06 ms			
	Maximum	0.2 ms	0.2 ms	0.2 ms			
• Total power dissipation*		350 mW	350 mW	350 mW			
• I/O isolation voltage*		500 V AC	1,500 V AC	1,500 V AC			
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F			
	Storage*	-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F			
• I/O capacitance	Typical	0.8 pF	0.8 pF	0.8 pF			
	Maximum	1.5 pF	1.5 pF	1.5 pF			
• Initial I/O isolation resistance		Min. 1,000 MΩ	Min. 1,000 MΩ	Min. 1,000 MΩ			
• Terminal layout (.100, inch grid)	Recommended mounting pad (Top view)		Recommended mounting pad (Top view)		Recommended mounting pad (Top view)		
mm inch							
• Standards		(UL, C-UL)	(UL, C-UL)	UL (E43149), C-UL			
• Mounting method							

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.



# PhotoMOS Selector Chart

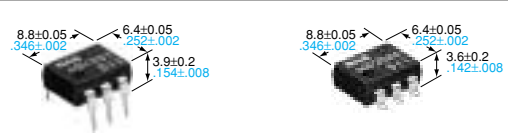
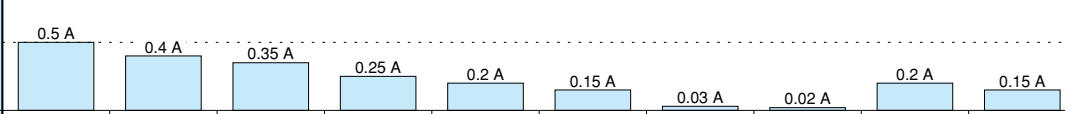
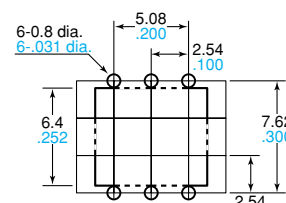
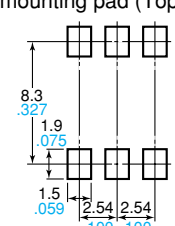

• Type of relay		RF Low C and R Type	RF C×R 4a Type	RF SOP Low on resistance Type			
		1a Type	4a Types	1a Type			
		AC/DC Type	AC/DC Type	AC/DC Type			
							
		mm inch					
• Features		• Low output capacitance between output terminals and low ON-resistance		• High frequency type in SO package			
		<b>Part No.</b>	AQV221N	AQS221N2S	AQV227NS	AQV224NS	
• Output		<b>Load voltage*</b>	40 V	40 V	200 V	400 V	
		<b>DC</b>	40 V	40 V	200 V	400 V	
		<b>Continuous load current</b>	1 A	0.5 A	0.15 A	0.04 A	
		<b>Peak load current</b>	0.45 A	0.12 A	0.15 A	0.12 A	
		<b>Power dissipation*</b>	360 mW	600 mW	450 mW		
		<b>ON resistance</b>	Typical 9.8 Ω Maximum 15 Ω	9.5 Ω 12.5 Ω	30 Ω 50 Ω	70 Ω 100 Ω	
		<b>Output capacitance (Typical)</b>	3.9 pF	1 pF	10 pF		
		<b>Off state leakage current</b>	Max. 10 nA	Max. 10 nA	Max. 10 nA		
• Input		<b>LED forward current*</b>	50 mA	50 mA	50 mA		
		<b>LED reverse voltage*</b>	5 V	5 V	5 V		
		<b>Peak forward current</b>	1 A	1 A	1 A		
		<b>Power dissipation*</b>	75 mW	75 mW	75 mW		
		<b>LED operate current [LED operate (OFF) current]</b>	Typical 0.9 mA Maximum 3.0 mA	0.9 mA 3 mA	0.7 mA 3.0 mA		
		<b>LED turn off current [LED reverse (ON) current]</b>	Minimum 0.4 mA Typical 0.85 mA	0.1 mA 0.85 mA	0.4 mA 0.65 mA		
		<b>LED dropout voltage (I<sub>F</sub> = 5 mA)</b>	Typical 1.14 V Maximum 1.5 V	1.25 V 1.5 V	1.14 V 1.5 V		
• Switching speed		<b>Turn on time [Operate (OFF) time]</b>	Typical 0.2 ms Maximum 0.5 ms	0.03 ms 0.2 ms	0.12 ms 0.5 ms	0.1 ms 0.5 ms	
		<b>Turn off time [Reverse (ON) time]</b>	0.08 ms 0.2 ms	0.03 ms 0.2 ms	0.05 ms 0.2 ms		
<b>Total power dissipation*</b>		410 mW	650 mW	500 mW			
<b>I/O isolation voltage*</b>		1,500 V AC	500 V AC	1,500 V AC			
• Temperature limits		<b>Operating*</b>	-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F		
		<b>Storage*</b>	-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F		
<b>I/O capacitance</b>		Typical 0.8 pF Maximum 1.5 pF	- 1.5 pF	0.8 pF 1.5 pF			
<b>Initial I/O isolation resistance</b>		Min. 1,000 MΩ	Min. 1,000 MΩ	Min. 1,000 MΩ			
• Terminal layout (.100, inch grid)		Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)	Recommended mounting pad (Top view)	Recommended mounting pad (Top view)		
							
		mm inch	Tolerance: ±0.1 ±.004				
<b>Standards</b>		UL (E43149), C-UL	(UL, C-UL)	UL (E43149), C-UL			
<b>Mounting method</b>							

• Type of relay		RF Low on resistance Type		RF Low on resistance Type		
		1a Type		2a Type		
		AC/DC Type		AC/DC Type		
		6-Pin		8-Pin		
mm inch						
		• Low on-resistance type for high frequency application		• 2-channel type of low on-resistance type		
• Features		Part No.	AQV227N	AQV224N	AQW227N	AQW224N
Load voltage*	Peak AC		200 V	400 V	200 V	400 V
	DC		200 V	400 V	200 V	400 V
• Output	Continuous load current	1 A				
		0.5 A				
	Peak load current	0.07 A	0.05 A	0.05 A	0.04 A	
	Power dissipation*	360 mW		800 mW		
	ON resistance	Typical	30 Ω	70 Ω	30 Ω	70 Ω
		Maximum	50 Ω	100 Ω	50 Ω	100 Ω
	Output capacitance (Typical)		10 pF		10 pF	
Off state leakage current		Max. 10 nA		Max. 10 nA		
• Input	LED forward current*		50 mA		50 mA	
	LED reverse voltage*		5 V		5 V	
	Peak forward current		1 A		1 A	
	Power dissipation*		75 mW		75 mW	
	LED operate current [LED operate (OFF) current]	Typical	0.9 mA		0.9 mA	
		Maximum	3.0 mA		3.0 mA	
	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA		0.4 mA	
Typical		0.85 mA		0.8 mA		
LED dropout voltage (If = 5 mA)	Typical	1.14 V		1.14 V		
	Maximum	1.5 V		1.5 V		
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.2 ms		0.2 ms	
		Maximum	0.5 ms		0.5 ms	
Turn off time [Reverse (ON) time]	Typical	0.08 ms		0.08 ms		
	Maximum	0.2 ms		0.2 ms		
• Total power dissipation*		410 mW		850 mW		
• I/O isolation voltage*		1,500 V AC		1,500 V AC		
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F		
	Storage*	-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		
• I/O capacitance	Typical	0.8 pF		0.8 pF		
	Maximum	1.5 pF		1.5 pF		
• Initial I/O isolation resistance		Min. 1,000 MΩ		Min. 1,000 MΩ		
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)					
	Through hole terminal (Bottom view)					
		Tolerance: ±0.1 ±.004		Tolerance: ±0.1 ±.004		
• Standards		UL (E43149), C-UL		UL (E43149), C-UL		
• Mounting method						

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

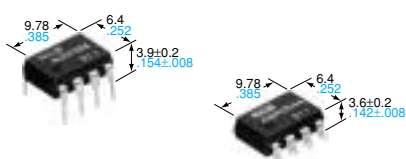
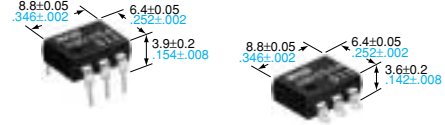
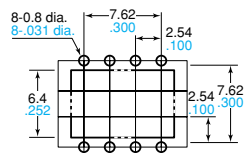
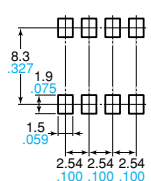
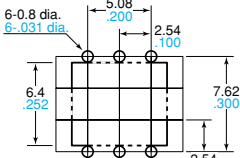
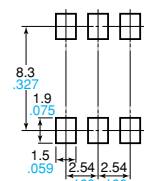


# PhotoMOS Selector Chart

• Type of relay		RF Low ON resistance Type	RF SOP Type	HE High Capacity Type		
		2a Types	4a Type	1a Type		
		AC/DC Type	AC/DC Type	AC/DC Type		
		8-Pin	16-Pin	6-Pin		
		mm inch				
• Features		• 2-channel of low on-resistance type	• 4-channel (Form A) 16-pin type	• Greatly increased load current in the same package size		
		<b>Part No.</b>	AQW227NS	AQS225S	AQV252G	
• Output	Load voltage*	Peak AC	200 V	80 V	60 V	
		DC	200 V	80 V	60 V	
• Output	Continuous load current	1 A			2.5 A	
		0.5 A				
		1 channel 0.05 A	2 channel 0.04 A	0.05 A		
	Peak load current	0.15 A		0.15 A	6.0 A	
	Power dissipation*	600 mW		600 mW	500 mW	
	ON resistance	Typical	30 Ω	21 Ω	0.08 Ω	
		Maximum	50 Ω	35 Ω	0.12 Ω	
• Input	Output capacitance (Typical)	10 pF		4.5 pF	490 pF	
	Off state leakage current	Max. 10 nA		10 nA	1 μA	
	LED forward current*	50 mA		50 mA	50 mA	
	LED reverse voltage*	5 V		5 V	5 V	
	Peak forward current	1 A		1 A	1 A	
	Power dissipation*	75 mW		75 mW	75 mW	
	LED operate current [LED operate (OFF) current]	Typical	0.7 mA		0.9 mA	0.5 mA
		Maximum	3 mA		3.0 mA	3.0 mA
	LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA		0.3 mA	0.2 mA
		Typical	0.65 mA		0.85 mA	0.45 mA
LED dropout voltage (If = 5 mA)	Typical	1.14 V		1.14 V	1.14 V	
	Maximum	1.5 V		1.5 V	1.5 V	
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.25 ms		1.1 ms	
		Maximum	0.5 ms		5.0 ms	
• Switching speed	Turn off time [Reverse (ON) time]	Typical	0.08 ms		0.25 ms	
		Maximum	0.2 ms		0.5 ms	
• Total power dissipation*		650 mW		650 mW	550 mW	
• I/O isolation voltage*		1,500 V AC		1,500 V AC	1,500 V AC	
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F	
	Storage*	-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F	
• I/O capacitance	Typical	0.8 pF		0.8 pF	0.8 pF	
	Maximum	1.5 pF		1.5 pF	1.5 pF	
• Initial I/O isolation resistance		Min. 1,000 MΩ		Min. 1,000 MΩ	Min. 1,000 MΩ	
• Terminal layout (.100, inch grid)	Recommended mounting pad (Top view)			Recommended mounting pad (Top view)	Through hole terminal (Bottom view) and Surface mount terminal recommended mounting pad (Top view)	
	mm inch				Tolerance: ±0.1 ±.004	
• Standards		UL, C-UL		UL (E43149), C-UL	UL, C-UL, VDE	
• Mounting method						

• Type of relay		HE Type										
		1a Type										
		AC/DC Type										
		6-Pin										
												
		Standard I/O isolation type								Reinforced I/O isolation type		
• Features		• High sensitivity and low on-resistance										
		Part No.	AQV251	AQV252	AQV255	AQV257	AQV253	AQV254	AQV259	AQV258	AQV253H	AQV254H
• Output	Load voltage*	Peak AC	40 V	60 V	100 V	200 V	250 V	400 V	1,000 V	1,500 V	250 V	400 V
		DC	40 V	60 V	100 V	200 V	250 V	400 V	1,000 V	1,500 V	250 V	400 V
• Output	Continuous load current	1 A										
		0.5 A										
	Peak load current	1.8 A	1.5 A	1.0 A	0.75 A	0.6 A	0.5 A	0.09 A	0.06 A	0.6 A	0.5 A	
	Power dissipation*	360 mW										
	ON resistance	Typical	0.6 Ω	0.74 Ω	1.8 Ω	2.6 Ω	5.5 Ω	12.4 Ω	85 Ω	345 Ω	5.5 Ω	12.4 Ω
		Maximum	1.0 Ω	1.4 Ω	2.5 Ω	4.0 Ω	8.0 Ω	16 Ω	200 Ω	500 Ω	8 Ω	16 Ω
	Output capacitance (Typical)	350 pF			170 pF				80 pF		170 pF	
Off state leakage current	Max. 1 μA				Max. 10 μA				Max. 1 μA			
• Input	LED forward current*	50 mA										
	LED reverse voltage*	5 V										
	Peak forward current	1 A										
	Power dissipation*	75 mW										
	LED operate current [LED operate (OFF) current]	Typical									0.9 mA	1.4 mA
		Maximum									3.0 mA	3.0 mA
	LED turn off current [LED reverse (ON) current]	Minimum									0.4 mA	0.4 mA
		Typical									0.8 mA	1.3 mA
	LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical									1.14 V	
		Maximum									1.5 V	
• Switching speed	Turn on time [Operate (OFF) time]	Typical	1.7 ms	1.4 ms	0.9 ms	1.5 ms	0.8 ms	0.6 ms	0.35 ms	2.4 ms	1.8 ms	
		Maximum	3.0 ms	3.0 ms	2 ms	3 ms	2.0 ms	1.0 ms	1 ms	4 ms	3.0 ms	
	Turn off time [Reverse (ON) time]	Typical	0.07 ms	0.09 ms	0.1 ms	0.06 ms	0.05 ms	0.04 ms	0.04 ms	0.06 ms	0.05 ms	
		Maximum	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	
• Total power dissipation*	410 mW											
• I/O isolation voltage*	1,500 V AC								5,000 V AC			
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F										
	Storage*	-40°C to +100°C -40°F to +212°F										
• I/O capacitance	Typical	1.3 pF										
	Maximum	3 pF										
• Initial I/O isolation resistance	Min. 1,000 MΩ											
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)					Surface mount terminal recommended mounting pad (Top view)						
												
		Tolerance: ±0.1 ±.004										
• Standards	UL (E43149), C-UL								UL (E43149), C-UL, BSI, VDE			
• Mounting method												

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

# PhotoMOS Selector Chart

• Type of relay		HE Type					
		2a Type		1b Type			
		AC/DC Type		AC/DC Type			
		8-Pin		6-Pin			
mm inch							
				Standard I/O isolation type		Reinforced I/O isolation type	
• Features		<ul style="list-style-type: none"> <li>• High sensitivity and low on-resistance</li> <li>• 2 Form A type</li> </ul>		<ul style="list-style-type: none"> <li>• High sensitivity and low on-resistance</li> <li>• Normally closed type</li> </ul>			
		Part No.	AQW254	AQV453	AQV454	AQV454H	
• Output	Load voltage*	Peak AC	400 V	250 V	400 V		
		DC	400 V	250 V	400 V		
	Continuous load current	1 A	-----				
		0.5 A	-----				
	Peak load current		0.12 A	0.2 A	0.15 A	0.15 A	
	Power dissipation*		800 mW	360 mW			
	ON resistance	Typical	12.4 Ω	5.5 Ω	10.5 Ω		
		Maximum	16 Ω	8.0 Ω	16 Ω		
Output capacitance (Typical)		170 pF	350 pF	170 pF			
Off state leakage current		Max. 1 μA	Max. 1 μA		Max. 10 μA		
• Input	LED forward current*		50 mA	50 mA			
	LED reverse voltage*		5 V	5 V			
	Peak forward current		1 A	1 A			
	Power dissipation*		75 mW	75 mW			
	LED operate current [LED operate (OFF) current]	Typical	0.9 mA	1.0 mA	0.9 mA	1.4 mA	
		Maximum	3.0 mA	3.0 mA	3.0 mA	3.0 mA	
LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA	0.4 mA	0.4 mA	0.4 mA		
	Typical	0.8 mA	0.9 mA	0.8 mA	1.3 mA		
LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical	1.14 V	1.14 V				
	Maximum	1.5 V	1.5 V				
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.8 ms	1.52 ms	1.2 ms	1.8 ms	
	Maximum		2 ms	3 ms	2 ms	3 ms	
	Turn off time [Reverse (ON) time]	Typical	0.05 ms	0.4 ms	0.36 ms	0.4 ms	
	Maximum		0.2 ms	1 ms	1 ms	1 ms	
• Total power dissipation*		850 mW	410 mW				
• I/O isolation voltage*		1,500 V AC	1,500 V AC	5,000 V AC			
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F			
	Storage*	-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F			
• I/O capacitance	Typical	0.8 pF	1.3 pF				
	Maximum	1.5 pF	3 pF				
• Initial I/O isolation resistance		Min. 1,000 MΩ		Min. 1,000 MΩ			
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)		Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)		
							
mm inch		Tolerance: ±0.1 ±.004		Tolerance: ±0.1 ±.004			
• Standards		UL (E43149), C-UL		UL (E43149), C-UL	UL (E43149), C-UL, BSI		
• Mounting method		 					

• Type of relay		HE Type			
		2b Type		1a1b Type	
		AC/DC Type		AC/DC Type	
		8-Pin		8-Pin	
mm inch					
• Features		<ul style="list-style-type: none"> <li>High sensitivity and low on-resistance</li> <li>2 Form B type</li> </ul>		<ul style="list-style-type: none"> <li>High sensitivity and low on-resistance</li> <li>1 Form A 1 Form B type</li> </ul>	
		Part No.	AQW454	AQW654	
• Output	Load voltage*	Peak AC	400 V	400 V	
		DC	400 V	400 V	
• Output	Continuous load current	1 A			
		0.5 A			
	Peak load current	0.12 A	0.36 A	0.36 A	
	Power dissipation*		800 mW	800 mW	
	ON resistance	Typical Maximum	11 Ω 16 Ω	10 Ω (N.O.), 11 Ω (N.C.) 16 Ω (N.O.), 16 Ω (N.C.)	
	Output capacitance (Typical)		170 pF	170 pF	
	Off state leakage current		Max. 1 μA	Max. 1 μA	
• Input	LED forward current*		50 mA	50 mA	
	LED reverse voltage*		5 V	5 V	
	Peak forward current		1 A	1 A	
	Power dissipation*		75 mW	75 mW	
	LED operate current [LED operate (OFF) current]	Typical Maximum	0.9 mA 3.0 mA	0.9 mA 3.0 mA	
	LED turn off current [LED reverse (ON) current]	Minimum Typical	0.4 mA 0.8 mA	0.4 mA 0.8 mA	
LED dropout voltage (If = 5 mA)	Typical Maximum	1.14 V 1.5 V	1.14 V 1.5 V		
• Switching speed	Turn on time [Operate (OFF) time]	Typical Maximum	1.2 ms 2.0 ms	0.8 ms (N.O.), 1.2 ms (N.C.) 2.0 ms	
	Turn off time [Reverse (ON) time]	Typical Maximum	0.36 ms 1.0 ms	0.04 ms (N.O.), 0.36 ms (N.C.) 1.0 ms	
• Total power dissipation*			850 mW	850 mW	
• I/O isolation voltage*			1,500 V AC	1,500 V AC	
• Temperature limits	Operating*		-40°C to +85°C -40°F to +185°F	-40°C to +85°C -40°F to +185°F	
	Storage*		-40°C to +100°C -40°F to +212°F	-40°C to +100°C -40°F to +212°F	
• I/O capacitance	Typical Maximum		0.8 pF 1.5 pF	0.8 pF 1.5 pF	
• Initial I/O isolation resistance			Min. 1,000 MΩ	Min. 1,000 MΩ	
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)	Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)	
mm inch		Tolerance: ±0.1 ±.004		Tolerance: ±0.1 ±.004	
• Standards		UL (E43149), C-UL		UL (E43149), C-UL	
• Mounting method					

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

# PhotoMOS Selector Chart

• Type of relay		HF Type								
		1a Type								
		DC Type				AC/DC Type				
		6-Pin				6-Pin				
		mm inch								
• Features		<ul style="list-style-type: none"> <li>• Low on-resistance</li> <li>• Control with an input current of 10 mA</li> </ul>				<ul style="list-style-type: none"> <li>• Low on-resistance</li> <li>• Control with an input current of 10 mA</li> </ul>				
		Part No.	AQV101	AQV102	AQV103	AQV104	AQV201	AQV202	AQV203	AQV204
• Output	Load voltage*	Peak AC	—				40 V	60 V	250 V	400 V
		DC	40 V	60 V	250 V	400 V	40 V	60 V	250 V	400 V
	Continuous load current	1 A								
		0.5 A	0.7 A	0.6 A	0.3 A	0.18 A	0.5 A	0.4 A	0.2 A	0.15 A
	Peak load current		1.8 A	1.5 A	0.6 A	0.5 A	1.8 A	1.5 A	0.6 A	0.5 A
	Power dissipation*		800 mW				360 mW			
	ON resistance	Typical	0.3 Ω	0.37 Ω	2.7 Ω	6.3 Ω	0.6 Ω	0.74 Ω	5.5 Ω	12.4 Ω
		Maximum	0.5 Ω	0.7 Ω	4 Ω	8 Ω	1 Ω	1.4 Ω	8 Ω	16 Ω
	Output capacitance (Typical)		600 pF		300 pF		350 pF		170 pF	
	Off state leakage current		Max. 1 μA				Max. 1 μA			
• Input	LED forward current*		50 mA				50 mA			
	LED reverse voltage*		10 V				10 V			
	Peak forward current		1 A				1 A			
	Power dissipation*		150 mW				150 mW			
	LED operate current [LED operate (OFF) current]	Typical	2.3 mA				2.4 mA			
		Maximum	5 mA				5 mA			
	LED turn off current [LED reverse (ON) current]	Minimum	0.8 mA				0.8 mA			
Typical		2.2 mA				2.2 mA				
LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical	2.3 V				2.3 V				
	Maximum	3 V				3 V				
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.23 ms	0.22 ms	0.13 ms	0.09 ms	0.38 ms	0.41 ms	0.21 ms	0.18 ms
		Maximum	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms
	Turn off time [Reverse (ON) time]	Typical	0.07 ms	0.07 ms	0.07 ms	0.08 ms	0.08 ms	0.08 ms	0.07 ms	0.07 ms
		Maximum	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms
• Total power dissipation*		410 mW				410 mW				
• I/O isolation voltage*		1,500 V AC				1,500 V AC				
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F				-40°C to +85°C -40°F to +185°F				
	Storage*	-40°C to +100°C -40°F to +212°F				-40°C to +100°C -40°F to +212°F				
• I/O capacitance	Typical	1.3 pF				1.3 pF				
	Maximum	3 pF				3 pF				
• Initial I/O isolation resistance		Min. 1,000 MΩ				Min. 1,000 MΩ				
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)									
	Surface mount terminal recommended mounting pad (Top view)									
		mm inch								
		Tolerance: ±0.1 ±.004								
• Standards		UL (E43149), C-UL				UL (E43149), C-UL				
• Mounting method										


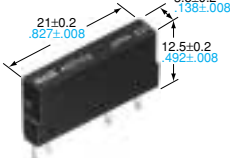
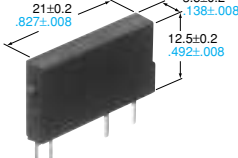
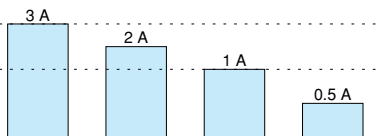
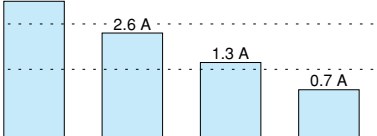
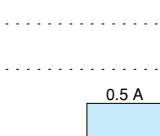
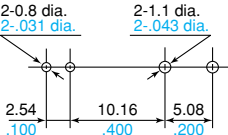



• Type of relay		HS Type		PD Type			
		1a Type		1a Type			
		AC/DC Type		AC/DC Type			
		6-Pin		4-Pin			
 mm inch		 mm inch		 mm inch		 mm inch	
				 mm inch		 mm inch	
• Features		• Highest sensitivity LED operate current: typical 0.31 mA		• High capacity • High sensitivity			
		Part No.	AQV234	AQY272	AQY275	AQY277	AQY274
• Output	Load voltage*	Peak AC	400 V	60 V	100 V	200 V	400 V
		DC	400 V	60 V	100 V	200 V	400 V
• Output	Continuous load current	2 A		2 A			
		1 A		1.3 A			
		0.5 A		0.65 A			
	Peak load current		0.12 A	0.6 A	4.0 A	2.0 A	1.0 A
	Power dissipation*		500 mW	700 mW			
	ON resistance	Typical	30 Ω	0.11 Ω	0.23 Ω	0.7 Ω	2.1 Ω
		Maximum	50 Ω	0.18 Ω	0.34 Ω	1.1 Ω	3.2 Ω
Output capacitance (Typical)		45 pF	1,400 pF		600 pF		
Off state leakage current		Max. 1 μA	Max. 10 μA				
• Input	LED forward current*		50 mA	50 mA			
	LED reverse voltage*		5 V	5 V			
	Peak forward current		1 A	1 A			
	Power dissipation*		75 mW	75 mW			
	LED operate current [LED operate (OFF) current]	Typical	0.31 mA	1.0 mA			
		Maximum	0.5 mA	3.0 mA			
LED turn off current [LED reverse (ON) current]	Minimum	0.1 mA	0.4 mA				
	Typical	0.29 mA	0.9 mA				
LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical	1.1 V	1.16 V				
	Maximum	1.5 V	1.5 V				
• Switching speed	Turn on time [Operate (OFF) time]	Typical	0.89 ms	2.46 ms	2.40 ms	1.12 ms	1.65 ms
		Maximum	2 ms	5.0 ms	5.0 ms	5.0 ms	5.0 ms
	Turn off time [Reverse (ON) time]	Typical	0.22 ms	0.22 ms	0.21 ms	0.10 ms	0.08 ms
		Maximum	1 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms
• Total power dissipation*			550 mW	750 mW			
• I/O isolation voltage*			1,500 V AC	2,500 V AC			
• Temperature limits	Operating*		-40°C to +85°C -40°F to +185°F		-40°C to +85°C -40°F to +185°F		
	Storage*		-40°C to +100°C -40°F to +212°F		-40°C to +100°C -40°F to +212°F		
• I/O capacitance	Typical		0.8 pF	0.8 pF			
	Maximum		1.5 pF	1.5 pF			
• Initial I/O isolation resistance			Min. 1,000 MΩ		Min. 1,000 MΩ		
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)		 Tolerance: ±0.1 ±.004		Through hole terminal (Bottom view)	 Tolerance: ±0.1 ±.004	
	Surface mount terminal recommended mounting pad (Top view)		 Tolerance: ±0.1 ±.004		Recommended mounting pad (Top view)	 Tolerance: ±0.1 ±.004	
• Standards			UL (E43149), C-UL		UL (E43149), C-UL		
• Mounting method							

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

\*\*Load voltage: AC (Effective Vrms)

# PhotoMOS Selector Chart

• Type of relay		Power PhotoMOS Type										
		1a Type								1b Type		
		AC/DC Type				DC Type				AC/DC Type		
		4-Pin				4-Pin				4-Pin		
												
• Features		• High capacity PhotoMOS Relay in a compact and slim 4-pin SIL								• High Capacity type • Compact Slim-type 4-pin SIL		
		Part No.	AQZ202	AQZ205	AQZ207	AQZ204	AQZ102	AQZ105	AQZ107	AQZ104	AQZ404	
• Output	Load voltage*	Peak AC	60 V	100 V	200 V	400 V	—				400 V	
		DC	60 V	100 V	200 V	400 V	60 V	100 V	200 V	400 V	400 V	
	Continuous load current	3 A										
		1 A										
	Peak load current		0.9 A	6.0 A	3.0 A	1.5 A	9.0 A	6.0 A	3.0 A	1.5 A	1.5 A	
	Power dissipation*		1.6 W				1.35 W				1.6 W	
	ON resistance	Typical	0.11 Ω	0.23 Ω	0.7 Ω	2.1 Ω	0.05 Ω	0.081 Ω	0.34 Ω	1.06 Ω	2.8 Ω	
		Maximum	0.18 Ω	0.34 Ω	1.1 Ω	3.2 Ω	0.09 Ω	0.17 Ω	0.55 Ω	1.6 Ω	4.0 Ω	
Output capacitance (Typical)		1,400 pF		600 pF		1,700 pF		900 pF		2,000 pF		
Off state leakage current		10 μA				10 μA				10 μA		
• Input	LED forward current*		50 mA				50 mA				50 mA	
	LED reverse voltage*		5 V				5 V				5 V	
	Peak forward current		1 A				1 A				1 A	
	Power dissipation*		75 mW				75 mW				75 mW	
	LED operate current [LED operate (OFF) current]	Typical		1.0 mA				1.0 mA				1.0 mA
		Maximum		3.0 mA				3.0 mA				3.0 mA
	LED turn off current [LED reverse (ON) current]	Minimum		0.4 mA				0.4 mA				0.4 mA
Typical			0.9 mA				0.9 mA				0.9 mA	
LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical		1.25 V				1.25 V				1.25 V	
	Maximum		1.5 V				1.5 V				1.5 V	
• Switching speed	Turn on time [Operate (OFF) time]	Typical	2.46 ms	2.40 ms	1.12 ms	1.65 ms	1.66 ms	1.89 ms	0.83 ms	1.01 ms	3.9 ms	
		Maximum	5.0 ms	5.0 ms	5.0 ms	5.0 ms	5.0 ms	5.0 ms	5.0 ms	5.0 ms	7.5 ms	
	Turn off time [Reverse (ON) time]	Typical	0.22 ms	0.21 ms	0.10 ms	0.08 ms	0.15 ms	0.19 ms	0.10 ms	0.08 ms	0.8 ms	
		Maximum	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	
• Total power dissipation*			1.6 W				1.35 W				1.6 W	
• I/O isolation voltage*			2,500 V AC				2,500 V AC				2,500 V AC	
• Temperature limits	Operating*		-40°C to +85°C -40°F to +185°F				-40°C to +85°C -40°F to +185°F				-40°C to +85°C -40°F to +185°F	
	Storage*		-40°C to +100°C -40°F to +212°F				-40°C to +100°C -40°F to +212°F				-40°C to +100°C -40°F to +212°F	
• I/O capacitance	Typical		0.8 pF				0.8 pF				0.8 pF	
	Maximum		1.5 pF				1.5 pF				1.5 pF	
• Initial I/O isolation resistance			Min. 1,000 MΩ				Min. 1,000 MΩ				Min. 1,000 MΩ	
• Terminal layout (.100, inch grid)												
			Tolerance: ±0.1 ±.004									
• Standards			UL (E43149), C-UL							UL (E43149), C-UL		
• Mounting method												

• Type of relay		Power PhotoMOS voltage-sensitive Type								Power PhotoMOS High capacity Type			
		1a Type								1a Type			
		AC/DC Type				DC Type				AC/DC Type			
		4-Pin				4-Pin				4-Pin			
		mm		inch									
• Features		<ul style="list-style-type: none"> <li>• Low on-resistance</li> <li>• Control with an input current of 10 mA</li> </ul>								<ul style="list-style-type: none"> <li>• High capacity</li> <li>• Low on-resistance</li> <li>• Controls low-level input signals</li> </ul>			
		Part No.	AQZ202D	AQZ205D	AQZ207D	AQZ204D	AQZ102D	AQZ105D	AQZ107D	AQZ104D	AQZ262	AQZ264	
• Output	Load voltage*	Peak AC	60 V	100 V	200 V	400 V	—				60 V	400 V	
		DC	60 V	100 V	200 V	400 V	60 V	100 V	200 V	400 V	60 V	400 V	
• Output	Continuous load current	3 A	2.7 A	1.8 A	0.9 A	0.45 A	3.6 A	2.3 A	1.1 A	0.6 A	6.0 A	1.0 A	
		1 A											
		Peak load current	9.0 A	6.0 A	3.0 A	1.5 A	9.0 A	6.0 A	3.0 A	1.5 A	10.0 A	3.0 A	
		Power dissipation*	1.6 W				1.35 W				3.0 W		
		ON resistance	Typical	0.066 Ω	0.180 Ω	0.64 Ω	2.4 Ω	0.033 Ω	0.090 Ω	0.33 Ω	1.23 Ω	0.036 Ω	1.0 Ω
		Maximum	0.18 Ω	0.34 Ω	1.1 Ω	3.2 Ω	0.09 Ω	0.17 Ω	0.55 Ω	1.6 Ω	0.05 Ω	1.4 Ω	
		Output capacitance (Typical)	1,400 pF		600 pF		1,700 pF		900 pF		1,400 pF	600 pF	
		Off state leakage current	10 μA				10 μA				10 μA		
• Input	LED forward current*	Input voltage: 30 V				Input voltage: 30 V				50 mA			
	LED reverse voltage*	Input reverse voltage: 5 V				Input reverse voltage: 5 V				5 V			
	Peak forward current	—				—				1 A			
	Power dissipation*	300 mW				300 mW				75 mW			
	LED operate current [LED operate (OFF) current]	Typical	Operate voltage: 1.4 V				Operate voltage: 1.4 V				1.0 mA		
	Maximum	4 V				4 V				3.0 mA			
LED turn off current [LED reverse (ON) current]	Minimum	Turn off voltage: 0.8 V				Turn off voltage: 0.8 V				0.4 mA			
Typical	1.3 V				1.3 V				0.9 mA				
LED dropout voltage (I <sub>F</sub> = 5 mA)	Typical	Input current (typ.): 6.5 mA				Input current (typ.): 6.5 mA				1.25 V			
Maximum	1.5 V				1.5 V				1.5 V				
• Switching speed	Turn on time [Operate (OFF) time]	Typical	5.8 ms	4.2 ms	2.7 ms	2.3 ms	3.3 ms	2.2 ms	1.5 ms	1.2 ms	5 ms	4 ms	
	Maximum	10.0 ms	10.0 ms	10.0 ms	10.0 ms	10.0 ms	10.0 ms	10.0 ms	10.0 ms	10.0 ms	10 ms	10 ms	
• Switching speed	Turn off time [Reverse (ON) time]	Typical	0.2 ms	0.2 ms	0.1 ms	0.1 ms	0.2 ms	0.2 ms	0.1 ms	0.1 ms	0.32 ms	0.14 ms	
	Maximum	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	3.0 ms	
• Total power dissipation*		1.6 W				1.35 W				3.0 W			
• I/O isolation voltage*		2,500 V AC				2,500 V AC				1,500 V AC			
• Temperature limits	Operating*	-40°C to +85°C -40°F to +185°F (4 V ≤ V <sub>IN</sub> ≤ 6 V) -20°C to +75°C -40°F to +167°F (6 V < V <sub>IN</sub> ≤ 15 V)								-40°C to +85°C -40°F to +185°F			
	Storage*	-40°C to +60°C -40°F to +140°F (15 V < V <sub>IN</sub> ≤ 30 V)								-40°C to +100°C -40°F to +212°F			
• I/O capacitance	Typical	0.8 pF				0.8 pF				2.0 pF			
	Maximum	1.5 pF				1.5 pF				4.0 pF			
• Initial I/O isolation resistance		Min. 1,000 MΩ				Min. 1,000 MΩ				Min. 1,000 MΩ			
• Terminal layout (.100, inch grid)													
			mm		inch		Tolerance: ±0.1 ±.004		Tolerance: ±0.1 ±.004				
• Standards		UL (E43149), C-UL											
• Mounting method													

\*The values are absolute maximum ratings (25°C 77°F). [ ]: Representation in case of Form B type contact PhotoMOS Relay.

# Photovoltaic MOSFET driver

• Product name				Photovoltaic MOSFET driver							
				6-Pin		4-Pin		4-Pin			
• Type of relay											
				mm		inch		mm		inch	
• Part No.				APV1122		APV1121S		APV2121S		APV2111V	
• Output		Open voltage	Min.	6 V		5 V					
			Typ.	8.7 V		8.2 V					
		Short current	Min.	5 μA		3 μA					
			Typ.	14 μA		8 μA					
• Input		LED forward current	I <sub>F</sub>	50 mA							
		LED reverse voltage	V <sub>R</sub>	5 V							
		Peak forward current	I <sub>FP</sub>	1 A							
		Power dissipation	P <sub>in</sub>	75 mW							
		LED operate current	Typ.	0.6 mA				0.85 mA			
			Max.	3 mA							
		LED turn off current	Min.	0.2 mA							
			Typ.	0.5 mA				0.75 mA			
LED dropout voltage	Typ.	1.15 V									
	Max.	1.5 V									
• Turn on time		Typ.	T <sub>on</sub>	0.4 mA				0.8 mA			
• Turn off time		Typ.	T <sub>off</sub>	0.1 ms							
• Input/Output capacitance		Typ.	C <sub>iso</sub>	0.8 pF							
		Max.		1.5 pF							
• Input/Output resistance		Min.	R <sub>iso</sub>	1,000 MΩ							
• Input/Output isolation			V <sub>iso</sub>	5,000 V		2,500 V		2,500 V		1,500 V	
• Operating temperature			T <sub>opr</sub>	-40°C to +85°C -40°F to +185°F							
• Storage temperature			T <sub>stg</sub>	-40°C to +100°C -40°F to +212°F							
• Terminal layout (.100, inch grid)				Recommended mounting pad (TOP VIEW)		Recommended mounting pad (TOP VIEW)		Recommended mounting pad (TOP VIEW)			
				mm		inch		mm		inch	
• Standards				UL, C-UL							
• Mounting method											