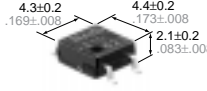

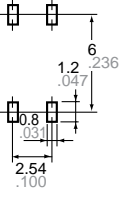
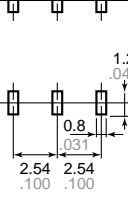



PhotoMOS Selector Chart

• Type of relay		GU SOP Type										
		1a Types										
		AC/DC Type										
		4-Pin					6-Pin					
												
• Features		<ul style="list-style-type: none"> • Super miniature design • SOP (1 Form A) 4-pin type 					<ul style="list-style-type: none"> • Ultra small size • SOP (1 Form A) 6-pin type 					
		Part No.	AQY210S	AQY214S	AQV212S	AQV215S	AQV217S	AQV210S	AQV214S	AQV216S		
• 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		0.12 A	0.1 A	0.35 A	0.3 A	0.16 A	0.12 A	0.1 A	0.04 A		
	Power dissipation*		300 mW					450 mW				
	ON resistance	Typical	17 Ω	25 Ω	0.83 Ω	2.3 Ω	11 Ω	23 Ω	30 Ω	70 Ω		
		Maximum	25 Ω	35 Ω	2.5 Ω	4.0 Ω	15 Ω	35 Ω	50 Ω	120 Ω		
	Output capacitance (Typical)		45 pF					150 pF				
	Off state leakage current		Max. 1 μA					Max. 1 μA				
• Input	LED forward current*		50 mA					50 mA				
	LED reverse voltage*		3 V					3 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				
		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					0.65 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	0.23 ms	0.21 ms	0.65 ms	0.60 ms	0.25 ms	0.25 ms	0.25 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*		350 mW					500 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					
	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)					Recommended mounting pad (Top view)						
												
• Standards		UL (E43149), CSA (LR26550), BSI					UL (E43149), CSA (LR26550), TÜV					
• Mounting method												
• Page		44					47					

*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 Type								GU SOP Type		
		1a Type								2a Types		
		AC/DC Type								AC/DC Type		
mm inch												
		Standard I/O isolation type						Reinforced I/O isolation type				
• Features		• General use								• 2-channel in SO package		
		Part No.	AQV212	AQV215	AQV217	AQV210	AQV214	AQV216	AQV214H	AQW210S	AQW214S	
• Load voltage*	Peak AC		60 V	100 V	200 V	350 V	400 V	600 V	400 V	350 V	400 V	
	DC		60 V	100 V	200 V	350 V	400 V	600 V	400 V	350 V	400 V	
• Output	Continuous load current	1 A										
		0.5 A										
			0.4 A	0.32 A	0.18 A	0.13 A	0.12 A	0.05 A	0.12 A	0.1 A	0.08 A	
	Peak load current		1.2 A	0.96 A	0.54 A	0.4 A	0.3 A	0.15 A	0.3 A	0.3 A	0.24 A	
	Power dissipation*		500 mW						600 mW			
	ON resistance	Typical	0.83 Ω	2.3 Ω	11 Ω	23 Ω	30 Ω	70 Ω	30 Ω	16 Ω	30 Ω	
		Maximum	2.5 Ω	4 Ω	15 Ω	35 Ω	50 Ω	120 Ω	50 Ω	35 Ω	50 Ω	
Output capacitance (Typical)		150 pF	110 pF	70 pF	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*		3 V						3 V			
	Peak forward current		1 A						1 A			
	Power dissipation*		75 mW						75 mW			
	LED operate current [LED operate (OFF) current]	Typical	1 mA						1.3 mA		0.9 mA	
		Maximum	3 mA						3 mA		3.0 mA	
LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA						0.4 mA		0.4 mA		
	Typical	0.79 mA						1.2 mA		0.8 mA		
LED dropout voltage (I _F = 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	0.65 ms	0.60 ms	0.25 ms	0.25 ms	0.21 ms	0.28 ms	0.6 ms	0.23 ms	0.21 ms	
		Maximum	2 ms	2 ms	1 ms	0.5 ms	0.5 ms	0.5 ms	0.8 ms	0.5 ms	0.5 ms	
	Turn off time [Reverse (ON) time]	Typical	0.08 ms	0.06 ms	0.05 ms	0.05 ms	0.05 ms	0.04 ms	0.05 ms	0.04 ms	0.2 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*		550 mW						650 mW				
• I/O isolation voltage*		1,500 V AC						5,000 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)							Surface mount terminal recommended mounting pad (Top view)		Recommended mounting pad (Top view)		
		mm inch										
• Standards		UL (E43149), CSA (LR26550), TÜV						UL (E43149), CSA (LR26550), TÜV, BSI, VDE		UL (E43149), CSA (LR26550), BSI		
• Mounting method												
• Page		50						50		54		

• Type of relay		GU Type							Multi-channel(4a) Type	
		2a Type				Multi-channel(4a) Type				
		AC/DC Type				AC/DC Type				
mm inch										
• Features		<ul style="list-style-type: none"> • 2 Form A type • Approx. 1/2 smaller compared with proximity mounting of two 1 Form A units 							<ul style="list-style-type: none"> • 4-circuit (4 Form A) type in a compact and slim 13-pin SIL 	
		Part No.	AQW212	AQW215	AQW217	AQW210	AQW214	AQW216	AQX21444	
• Output	Load voltage*	Peak AC	60 V	100 V	200 V	350 V	400 V	600 V	400 V	
		DC	60 V	100 V	200 V	350 V	400 V	600 V	400 V	
• Output	Continuous load current	1 A								
		0.5 A	0.35 A	0.3 A	0.16 A	0.12 A	0.1 A	0.04 A	0.08 A	
	Peak load current	1.0 A	0.9 A	0.48 A	0.3 A	0.3 A	0.12 A	0.3 A		
	Power dissipation*	800 mW							1.45 W	
	ON resistance	Typical	0.83 Ω	2.3 Ω	11 Ω	23 Ω	30 Ω	70 Ω	30 Ω	
		Maximum	2.5 Ω	4.0 Ω	15 Ω	35 Ω	50 Ω	120 Ω	50 Ω	
	Output capacitance (Typical)		150 pF	110 pF	70 pF	45 pF	45 pF	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*		3 V							3 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	1.1 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				0.79 mA	0.8 mA	1.0 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	0.65 ms	0.60 ms	0.25 ms	0.25 ms	0.31 ms	0.28 ms	0.29 ms	
		Maximum	2 ms	2 ms	1 ms	0.5 ms	0.5 ms	0.5 ms	1.0 ms	
	Turn off time [Reverse (ON) time]	Typical	0.08 ms	0.06 ms	0.05 ms	0.05 ms	0.05 ms	0.04 ms	0.19 ms	
		Maximum	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.2 ms	0.5 ms	
• Total power dissipation*		850 mW							1.5 W	
• 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							4.0 pF	
	Maximum	1.5 pF							8.0 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)				
		Tolerance: ±0.1 ±.004				Tolerance: ±0.1 ±.004				
• Standards		UL (E43149), CSA (LR26550), TÜV							UL (E43149), CSA (LR26550), TÜV	
• Mounting method										
• Page		57							60	

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

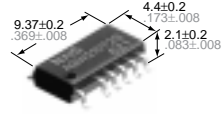
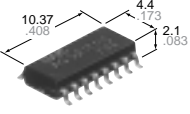
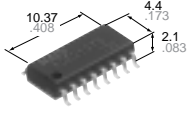
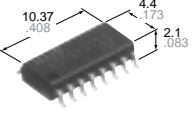
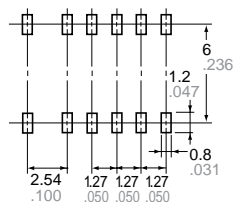
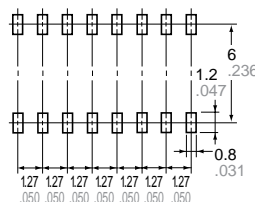
PhotoMOS Selector Chart

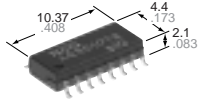

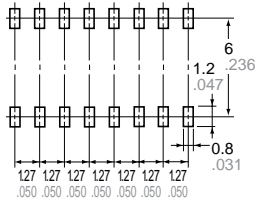
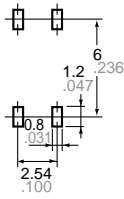
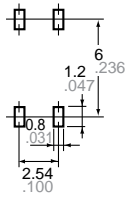

• Type of relay		GU SOP Type				GU Type				
		1b Types				1b Type		2b Type		
		AC/DC Type				AC/DC Type		AC/DC Type		
		4-Pin		6-Pin						
mm inch										
• Features		<ul style="list-style-type: none"> • Super miniature design • SOP (1 Form B) 4-pin type 		<ul style="list-style-type: none"> • Ultra small size • SOP (1 Form B) 6-pin type 		<ul style="list-style-type: none"> • Normally-closed type (1 Form B) 		<ul style="list-style-type: none"> • 2 Form B type • Approx. 1/2 smaller compared with proximity mounting of two 1 Form B units 		
		Part No.	AQY410S	AQY414S	AQV414S	AQV414	AQV414	AQW414	AQW414	
• Output	Load voltage*	Peak AC	350 V	400 V	400 V	400 V	400 V	400 V	400 V	
		DC	350 V	400 V	400 V	400 V	400 V	400 V	400 V	
	Continuous load current	1 A								
		0.5 A								
			0.12 A	0.1 A	0.1 A	0.12 A		0.1 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		26 Ω		
		Maximum	25 Ω	35 Ω	50 Ω	50 Ω		50 Ω		
	Output capacitance (Typical)		110 pF	100 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*		3 V		3 V	3 V		3 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 (I _F = 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	0.47 ms		0.46 ms		
		Maximum	1.0 ms	1.0 ms	1.0 ms	1 ms		1.0 ms		
	Turn off time [Reverse (ON) time]	Typical	0.23 ms	0.28 ms	0.28 ms	0.28 ms		0.40 ms		
		Maximum	1.0 ms	1.0 ms	1.0 ms	1 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		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									
• Standards		UL, CSA, BSI	UL, CSA, TÜV, BSI	UL (E43149), CSA (LR26550), TÜV	UL (E43149), CSA (LR26550), TÜV	UL (E43149), CSA (LR26550), TÜV		UL (E43149), CSA (LR26550), TÜV		
• Mounting method										
• Page			63		66		69		72	

• Type of relay		GU SOP Type		GU Type		GU SOP Type	
		1a1b Type		1a1b Type		2a: MOSFET & optocoupler	
		AC/DC Type		AC/DC Type		AC/DC Type	
mm inch							
						Relay portion	Detector portion
• Features		• 2-channel (Form A/Form B) type		• 1 Form A 1 Form B type		• 2-channel (MOSFET & optocoupler type)	
		Part No.	AQW610S	AQW614	AQW210TS		
• Output	Load voltage*	Peak AC	350 V	400 V	350 V	BV _{CEC}	30 V
		DC	350 V	400 V	350 V		
• Output	Continuous load current	1 A					
		0.5 A					
	Peak load current	0.1 A	0.1 A	0.12 A	CTR value	Min. 33% Typ. 100%	
	Power dissipation*	0.3 A	0.3 A	0.36 A	—		
	ON resistance	600 mW	800 W	400 mW	150 mW		
	Typical Maximum	18 Ω	27 Ω	16 Ω	Saturation voltage	0.08 V	
	Maximum	25 Ω	50 Ω	35 Ω	0.5 V		
Output capacitance (Typical)	45 pF	45 pF (N.O.), 100 pF (N.C.)		45 pF	6 pF		
Off state leakage current	Max. 1 μA	Max. 1 μA		Max. 1 μA	Max. 500 nA		
• Input	LED forward current*	50 mA	50 mA		50 mA		
	LED reverse voltage*	3 V	3 V		—		
	Peak forward current	1 A	1 A		1 A		
	Power dissipation*	75 mW	75 mW		75 mW	75 mW	
	LED operate current [LED operate (OFF) current]	Typical Maximum	0.9 mA	0.7 mA (N.O.) 0.9 mA (N.C.)		0.9 mA	2 mA
	Minimum	3 mA	3 mA		3.0 mA	6 mA	
LED turn off current [LED reverse (ON) current]	Typical	0.4 mA	0.4 mA		0.4 mA	5 μA	
Minimum	0.8 mA	0.7 mA (N.O.) 0.8 mA (N.C.)		0.8 mA	35 μA		
LED dropout voltage (I _F = 5 mA)	Typical Maximum	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 Maximum	0.52 ms	0.28 ms (N.O.) 0.43 ms (N.C.)		0.23 ms	0.01 ms
	Maximum	1 ms	1 ms		0.5 ms	—	
Turn off time [Reverse (ON) time]	Typical Maximum	0.23 ms	0.04 ms (N.O.) 0.3 ms (N.C.)		0.04 ms	0.03 ms	
Maximum	1 ms	1 ms		2.0 ms	—		
• Total power dissipation*	650 mW		850 mW		650 mW		
• I/O isolation voltage*	1,500 V AC		1,500 V AC		1,500 V AC (Between input and output/ between contact sets)		
• 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)		Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)	Recommended mounting pad (Top view)		
mm inch		Tolerance: ±0.1 ±.004					
• Standards	UL (E43149), CSA (LR26550), TÜV, BSI		UL (E43149), CSA (LR26550), TÜV		UL (E43149), CSA (LR26550), TÜV, BSI		
• Mounting method							
• Page	75		78		81		

*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												
		3a: MOSFET & 2 optocoupler			DAA			2 MOSFET & 1 optocoupler			1 MOSFET & 2 optocoupler			
		AC/DC Type			AC/DC Type			AC/DC Type			AC/DC Type			
														
		mm inch		Relay portion	Detector portion	Relay portion	Detector portion	Relay portion	Detector portion	Relay portion	Detector portion			
• Features		• 3-channel (MOSFET & 2 optocouplers type)			• DAA (Data Access Arrangement) circuit package			• SO package 16-pin type in super miniature design			• SO package 16-pin type in super miniature design			
		Part No.	AQW210T2S			AQS210PS			AQS210TS			AQS210T2S		
• Output	Load voltage*	Peak AC	350 V	BV CEC	30 V	350 V	BV CEC	30 V	350 V	BV CEC	30 V	350 V	BV CEC	30 V
		DC	350 V			350 V			350 V			350 V		
• Output	Continuous load current	1 A												
		0.5 A												
	Peak load current	0.12 A	CTR value	Min. 33% Typ. 100%	0.12 A	CTR value	Min. 33% Typ. 100%	0.1 A	CTR value	Min. 33% Typ. 100%	0.12 A	CTR value	Min. 33% Typ. 100%	
	Power dissipation*	0.36 A	—	—	0.36 A	—	—	0.36 A	—	—	0.36 A	—	—	
	ON resistance	400 mW	100 mW	—	400 mW	150 mW	—	600 mW	150 mW	—	400 mW	100 mW	—	
	Output capacitance (Typical)	16 Ω 35 Ω	Saturation voltage 0.08 V 0.5 V	—	18 Ω 25 Ω	Saturation voltage 0.08 V 0.5 V	—	17 Ω 25 Ω	Saturation voltage 0.08 V 0.5 V	—	17 Ω 25 Ω	Saturation voltage 0.08 V 0.5 V	—	
	Off state leakage current	45 pF	6 pF	—	45 pF	6 pF	—	45 pF	6 pF	—	45 pF	6 pF	—	
• Input	LED forward current*	Max. 1 μA	Max. 500 nA	—	Max. 1 μA	Max. 500 nA	—	Max. 1 μA	Max. 500 nA	—	Max. 1 μA	Max. 500 nA		
	LED reverse voltage*	50 mA			50 mA			50 mA			50 mA			
	Peak forward current	3 V	—	—	3 V	—	—	3 V	—	—	3 V	—		
	Power dissipation*	1 A	—	—	1 A	—	—	1 A	—	—	1 A	—		
	LED operate current (LED operate (OFF) current)	75 mW	75 mW	—	75 mW	75 mW	—	75 mW	75 mW	—	75 mW	75 mW		
	LED turn off current (LED reverse (ON) current)	0.9 mA 3.0 mA	2 mA 6 mA	—	0.9 mA 3.0 mA	2 mA 6 mA	—	0.9 mA 3.0 mA	2 mA 6 mA	—	0.9 mA 3.0 mA	2 mA 6 mA		
	LED dropout voltage (If = 5 mA)	0.4 mA 0.8 mA	5 μA 35 μA	—	0.4 mA 0.8 mA	5 μA 35 μA	—	0.4 mA 0.8 mA	5 μA 35 μA	—	0.4 mA 0.8 mA	5 μA 35 μA		
• Switching speed	Turn on time [Operate (OFF) time]	1.14 V 1.5 V		1.14 V 1.5 V		1.14 V 1.5 V		1.14 V 1.5 V		1.14 V 1.5 V				
	Turn off time [Reverse (ON) time]	0.23 ms 0.5 ms	0.01 ms —	—	0.23 ms 2.0 ms	0.01 ms —	—	0.23 ms 1.0 ms	0.01 ms —	—	0.23 ms 1.0 ms	0.01 ms —		
Total power dissipation*	0.04 ms 2.0 ms	0.03 ms —	—	0.04 ms 1.0 ms	0.03 ms —	—	0.04 ms 0.2 ms	0.03 ms —	—	0.04 ms 0.2 ms	0.03 ms —			
• I/O isolation voltage*	650 mW			650 mW			650 mW			650 mW				
• Temperature limits	1,500 V AC (Between input and output/ between contact sets)													
• I/O capacitance	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			
• Initial I/O isolation resistance	0.8 pF 1.5 pF	—	—	0.8 pF 1.5 pF	—	—	0.8 pF 1.5 pF	—	—	0.8 pF 1.5 pF	—	—		
• Terminal layout (.100, inch grid)	Min. 1,000 MΩ			Min. 1,000 MΩ			Min. 1,000 MΩ			Min. 1,000 MΩ				
• Standards	Recommended mounting pad (Top view)			Recommended mounting pad (Top view)										
														
• Mounting method	UL (E43149), CSA (LR26550), TÜV, BSI													
• Page	UL (E43149), CSA (LR26550), TÜV, BSI													
• Page	81			85			89			89				

• Type of relay		GU SOP Type				GU SOP with Short Circuit Protection Type	GU SOP Current Limit Function Type
		1a1b MOSFET & 1 optocoupler				1a Type	1a Type
		AC/DC Type				AC/DC Type	AC/DC Type
						4-Pin	
Relay portion	Detector portion						
mm inch							
• Features		• SO package 16-pin type in super miniature design				• Short circuit protection • SO package 4-Pin type in super miniature design	
Part No.		AQS610TS				AQY210KS	AQY210LS
Load voltage*	Peak AC	350 V		BV _{CEC}	350 V		
	DC	350 V				350 V	
• Output	Continuous load current	1 A					
		0.5 A					
		0.1 A	CTR value	Min. 33% Typ. 100%	0.12 A	0.12 A	
	Peak load current	0.36 A		—		0.2 A (Cut off Current [typ.])	0.18 A (Output Limit Current [typ.])
	Power dissipation*	600 mW		100 mW		300 mW	300 mW
	ON resistance	Typical	18 Ω	Saturation voltage	0.08 V	23.5 Ω	20 Ω
	Maximum	25 Ω	0.5 V		35 Ω	25 Ω	
Output capacitance (Typical)	45 pF (N.C.) 110 pF (N.O.)		6 pF		42 pF	45 pF	
Off state leakage current	Max. 1 μA		Max. 500 nA		Max. 1 μA	Max. 1 μA	
• Input	LED forward current*	50 mA				50 mA	50 mA
	LED reverse voltage*	3 V		—		3 V	3 V
	Peak forward current	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	2 mA		1.1 mA	0.9 mA
	Maximum	3.0 mA	6 mA		3.0 mA	3.0 mA	
LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA	5 μA		0.3 mA	0.4 mA	
Typical	0.8 mA	35 μA		1.0 mA	0.85 mA		
LED dropout voltage (I _F = 5 mA)	Typical	1.14 V		1.13 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	0.01 ms		0.7 ms	0.3 ms
	Maximum	2.0 ms	—		2.0 ms	2.0 ms	
Turn off time [Reverse (ON) time]	Typical	0.04 ms	0.03 ms		0.07 ms	0.05 ms	
	Maximum	1.0 ms	—		1.0 ms	1.0 ms	
• Total power dissipation*	650 mW				350 mW	350 mW	
• I/O isolation voltage*	1,500 V AC (Between input and output/ between contact sets)				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 < >: pending	UL (E43149), CSA (LR26550), TÜV, BSI				UL (E43149), C-UL, <BSI>	UL (E43149), CSA (LR26550)	
• Mounting method							
• Page	93				97	101	

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

PhotoMOS Selector Chart

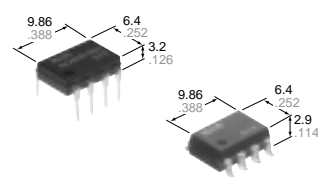
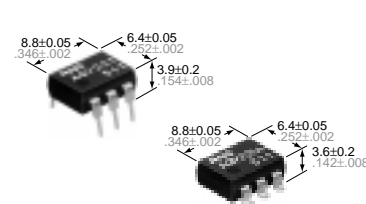
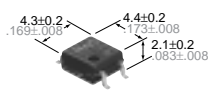
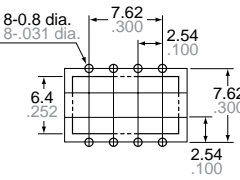
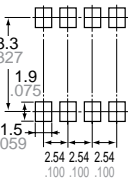
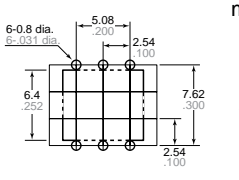
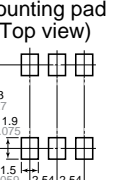
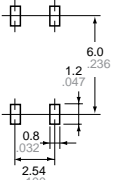
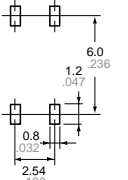
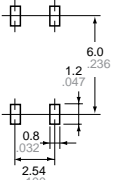
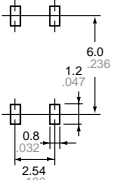


• Type of relay		GU Current Limit Function Type	GU Current Limit Function Type	GU Current Limit Function Type	
		1a Type	1a Type	2a Type	
		AC/DC Type	AC/DC Type	AC/DC Type	
		4-Pin	6-Pin	8-Pin	
		mm inch			
• Features		<ul style="list-style-type: none"> Current Limit Function Reinforced insulation 5,000 V type Compact 4-pin DIP size 	<ul style="list-style-type: none"> Current Limit Function Reinforced insulation 5,000 V type Compact 6-pin DIP size 	<ul style="list-style-type: none"> Current Limit Function Reinforced insulation 5,000 V type Compact 8-pin DIP size 	
		Part No.	AQY210HL	AQV210HL	AQW210HL
• Output	Load voltage*	Peak AC	350 V	350 V	350 V
		DC	350 V	350 V	350 V
• Output	Continuous load current	1 A			
		0.5 A			
	Peak load current	0.12 A	0.13 A	0.10 A	
	Power dissipation*	0.18 A (Output Limit Current [typ.])	0.18 A (Output Limit Current [typ.])	0.18 A (Output Limit Current [typ.])	
	ON resistance	500 mW	500 mW	800 mW	
	Output capacitance (Typical)	20 Ω 25 Ω	20 Ω 25 Ω	20 Ω 25 Ω	
	Off state leakage current	45 pF	45 pF	45 pF	
• Input	LED forward current*	Typical	Max. 1 μA	Max. 1 μA	Max. 1 μA
		Maximum			
	LED reverse voltage*	Typical	50 mA	50 mA	50 mA
		Maximum	3 V	3 V	3 V
	Peak forward current	Typical	1 A	1 A	1 A
		Maximum	75 mW	75 mW	75 mW
	LED operate current [LED operate (OFF) current]	Typical	1.2 mA	1.6 mA	1.2 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	1.1 mA	1.5 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	0.5 ms	0.8 ms	0.5 ms
		Maximum	2.0 ms	2.0 ms	2.0 ms
• Switching speed	Turn off time [Reverse (ON) time]	Typical	0.08 ms	0.05 ms	0.08 ms
		Maximum	1.0 ms	1.0 ms	1.0 ms
• Total power dissipation*		550 mW	550 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	
• 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)		
			Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)	
			Tolerance: ±0.1 ±.004		
				Through hole terminal (Bottom view)	
				Surface mount terminal recommended mounting pad (Top view)	
				Tolerance: ±0.1 ±.004	
• Standards		UL (E43149), CSA (LR26550), BSI	UL (E43149), CSA (LR26550), BSI	UL (E43149), CSA (LR26550), BSI	
• Mounting method					
• Page		104	107	110	

• Type of relay		GU-E Type						GU-E Type			
		1a Types						2a 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"> General use and economy type DIP (1 Form A) 4-pin type 			<ul style="list-style-type: none"> General use and economy (1 Form A) type 			<ul style="list-style-type: none"> General use and economy type DIP (2 Form A) 8-pin type 			
		Part No.	AQY210EH	AQY214EH	AQV210E	AQV214E	AQV210EH	AQV214EH	AQW210EH	AQW214EH	
• Output	Load voltage*	Peak AC	350 V	400 V	350 V	400 V	350 V	400 V	350 V	400 V	
		DC	350 V	400 V	350 V	400 V	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		0.36 A	
	Power dissipation*	500 W				500 mW				800 mW	
	ON resistance	Typical	18 Ω	27 Ω	23 Ω	30 Ω	23 Ω	30 Ω	18 Ω	26 Ω	
		Maximum	25 Ω	50 Ω	35 Ω	50 Ω	35 Ω	50 Ω	25 Ω	35 Ω	
	Output capacitance (Typical)	45 pF				45 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*	3 V				3 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	1.2 mA		1.1 mA		1.6 mA		1.2 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		0.3 mA		0.4 mA		0.4 mA		
	Typical	1.1 mA		1.0 mA		1.5 mA		1.1 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	0.5 ms		0.5 ms		0.7 ms		0.5 ms		
		Maximum	2.0 ms		2.0 ms		2.0 ms		2.0 ms		
	Turn off time [Reverse (ON) time]	Typical	0.08 ms		0.05 ms		1.0 ms		0.08 ms		
		Maximum	1.0 ms		1.0 ms				1.0 ms		
• Total power dissipation*	550 mW				550 mW				850 mW		
• I/O isolation voltage*	5,000 V AC				1,500 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)		Through hole terminal (Bottom view)	Surface mount terminal recommended mounting pad (Top view)		Through hole terminal (Bottom view)	Mounting pad (Top view)			
				Tolerance: ±0.1 ±.004							
• Standards	UL (E43149), BSI, CSA (LR26550)				UL (E43149), CSA (LR26550), TÜV		UL (E43149), CSA (LR26550), TÜV, BSI, VDE		UL (E43149), CSA (LR26550), BSI		
• Mounting method											
• Page	113				116				119		

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

PhotoMOS Selector Chart

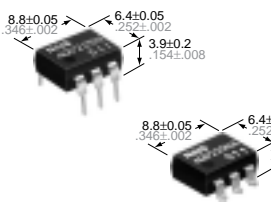
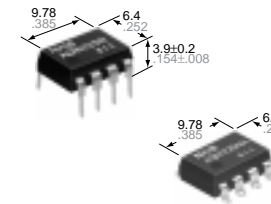
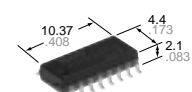
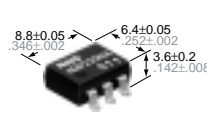
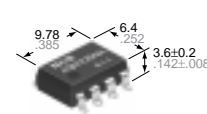
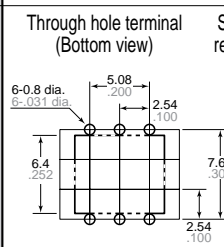
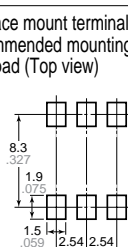
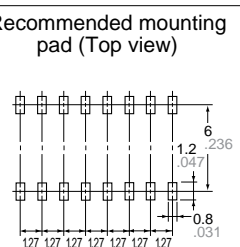
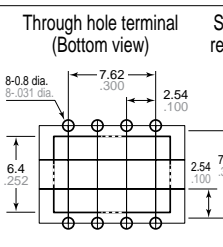
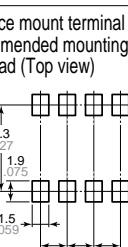



• Type of relay		GU-E Type							
		1b Types					2b Types		
		AC/DC Type					AC/DC Type		
		4-Pin		6-Pin					
mm inch									
		Reinforced I/O isolation type		Standard I/O isolation type	Reinforced I/O isolation type		Reinforced I/O isolation type		
• Features		• General use and economy type • DIP (1 Form B) 4-pin type		• General use and economy (1 Form B) type			• General use and economy type • DIP (2 Form B) 8-pin type		
		Part No.	AQY410EH	AQY414EH	AQV414E	AQV410EH	AQV414EH	AQW414EH	
• Output		Load voltage*	Peak AC	350 V	400 V	400 V	350 V	400 V	400 V
			DC	350 V	400 V	400 V	350 V	400 V	400 V
		Continuous load current	1 A						
			0.5 A						
		Peak load current	0.4 A	0.3 A	0.3 A	0.4 A	0.3 A	0.3 A	
		Power dissipation*	500 mW		500 mW			800 mW	
		ON resistance	Typical	18 Ω	26 Ω	26 Ω	18 Ω	26 Ω	26 Ω
			Maximum	25 Ω	35 Ω	50 Ω	35 Ω	50 Ω	35 Ω
		Output capacitance (Typical)	110 pF	100 pF	100 pF	110 pF	100 pF	100 pF	
		Off state leakage current	Max. 10 μA		Max. 1 μA	Max. 10 μA		Max. 10 μA	
• Input		LED forward current*	50 mA		50 mA			50 mA	
		LED reverse voltage*	3 V		3 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	1.4 mA	1.3 mA	1.45 mA	1.9 mA	1.75 mA	1.3 mA
			Maximum	3 mA	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	0.3 mA	0.4 mA	0.4 mA	0.4 mA		
	Typical	1.3 mA	1.2 mA	1.40 mA	1.8 mA	1.70 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	1.0 ms	0.8 ms	0.7 ms	1.5 ms	1.3 ms	0.8 ms	
	Maximum	3.0 ms	3.0 ms	2.0 ms	3.0 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	0.2 ms	
	Maximum	1.0 ms	1.0 ms	1.0 ms	1.5 ms	1.5 ms	1.0 ms		
• Total power dissipation*		550 mW		550 mW			850 mW		
• I/O isolation voltage*		5,000 V AC		1,500 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)		Through hole terminal (Bottom view)		Surface mount terminal recommended mounting pad (Top view)		
mm inch				Tolerance: ±0.1 ±.004					
• Standards		UL (E43149), BSI, CSA (LR26550)		UL (E43149), CSA (LR26550), TÜV	UL (E43149), CSA (LR26550), BSI	UL (E43149), CSA (LR26550), TÜV, BSI, VDE	UL (E43149), CSA (LR26550), BSI		
• Mounting method									
• Page		122		125			128		

• Type of relay		GU-E Type		RF Type		RF C × R 10 Type				
		1a1b Types		1a Type		1a Type				
		AC/DC Type		AC/DC Type		AC/DC Type				
mm inch										
		Reinforced I/O isolation type								
• Features		<ul style="list-style-type: none"> • General use and economy type • DIP (1 Form A 1 Form B) 8-pin type 		<ul style="list-style-type: none"> • For high frequency applications • High speed switching 		<ul style="list-style-type: none"> • Low output capacitance between output terminals and low ON-resistance 				
		Part No.	AQW610EH	AQW614EH	AQV221	AQV225	AQY221N2S			
• Output	Load voltage*	Peak AC	350 V	400 V	40 V	80 V	40 V			
		DC	350 V	400 V	40 V	80 V	40 V			
• Output	Continuous load current	1 A								
		0.5 A								
	Peak load current	0.12 A	0.1 A	0.08 A	0.05 A	0.12 A				
	Power dissipation*	800 mW		230 mW		300 mW				
	ON resistance	Typical	26 Ω		22 Ω		36 Ω		9.5 Ω	
		Maximum	35 Ω		35 Ω		50 Ω		12.5 Ω	
	Output capacitance (Typical)	45 pF(N.O.), 100 pF(N.C.)		5.6 pF		4.8 pF		1.0 pF		
Off state leakage current	Max. 1 μA(N.O.) 10 μA(N.C.)		Max. 10 μA		10 nA					
• Input	LED forward current*	50 mA		50 mA		50 mA				
	LED reverse voltage*	3 V		3 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	1.3 mA		0.9 mA		0.9 mA		0.9 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		0.2 mA		0.2 mA		
	Typical	1.2 mA		0.85 mA		0.85 mA		0.85 mA		
LED dropout voltage (I _F = 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	0.5 ms(N.O.) 1.0 ms(N.C.)	0.5 ms(N.O.) 0.8 ms(N.C.)	0.10 ms	0.3 ms	0.03 ms	0.5 ms		
	Maximum	3.0 ms		3.0 ms						
• Total power dissipation*	Turn off time [Reverse (ON) time]	Typical	0.08 ms(N.O.) 0.3 ms(N.C.)	0.08 ms(N.O.) 0.2 ms(N.C.)	0.03 ms	0.1 ms	0.03 ms	0.2 ms		
	Maximum	1.0 ms		1.0 ms						
• I/O isolation voltage*		850 mW		280 mW		350 mW				
• Temperature limits		5,000 V AC		1,500 V AC		1,500 V AC				
• I/O capacitance	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				
• Initial I/O isolation resistance	Typical	0.8 pF		0.8 pF		0.8 pF				
	Maximum	1.5 pF		1.5 pF		1.5 pF				
• Terminal layout (.100, inch grid)	Through hole terminal (Bottom view)									
	Recommended mounting pad (Top view)									
		mm inch		Tolerance: ±0.1 ±0.04						
• Standards < >: pending		UL (E43149), CSA (LR26550), BSI		UL (E43149), CSA (LR26550), TÜV		<UL, CSA>				
• Mounting method										
• Page		131		134		137				

*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 C X R 20 Type	RF Low C and R Type	RF SOP Low on resistance Type				
		1a Type	1a Type	1a Type				
		AC/DC Type	AC/DC Type	AC/DC Type				
		mm inch						
• Features		• Low output capacitance between output terminals and low ON-resistance	• Low output capacitance between output terminals and low ON-resistance	• High frequency type in SO package				
		Part No.	AQY221N1S	AQV221N	AQV225NS	AQV227NS	AQV224NS	
• Load voltage*	Peak AC		40 V	40 V	80 V	200 V	400 V	
	DC		40 V	40 V	80 V	200 V	400 V	
• Output	Continuous load current	1 A						
		0.5 A						
			0.12 A	0.15 A	0.12 A	0.05 A	0.04 A	
	Peak load current		0.3 A	0.45 A	0.36 A	0.15 A	0.12 A	
	Power dissipation*		300 mW	360 mW	450 mW			
	ON resistance	Typical Maximum		9.8 Ω 12.5 Ω	9.8 Ω 15 Ω	7 Ω 10 Ω	30 Ω 50 Ω	70 Ω 100 Ω
Output capacitance (Typical)			2.0 pF	3.9 pF	10 pF			
Off state leakage current			10 nA	Max. 10 nA	Max. 10 nA			
• Input	LED forward current*		50 mA	50 mA	50 mA			
	LED reverse voltage*		3 V	3 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 Maximum		0.9 mA 3.0 mA	0.9 mA 3.0 mA	0.7 mA 3.0 mA		
	LED turn off current [LED reverse (ON) current]	Minimum Typical		0.4 mA 0.85 mA	0.4 mA 0.85 mA	0.4 mA 0.65 mA		
LED dropout voltage (If = 5 mA)	Typical Maximum		1.14 V 1.5 V	1.14 V 1.5 V	1.14 V 1.5 V			
• Switching speed	Turn on time [Operate (OFF) time]	Typical Maximum	0.04 ms 0.5 ms	0.2 ms 0.5 ms	0.25 ms 0.5 ms			
	Turn off time [Reverse (ON) time]	Typical Maximum	0.06 ms 0.2 ms	0.08 ms 0.2 ms	0.08 ms 0.2 ms			
• Total power dissipation*			350 mW	410 mW	500 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 Maximum		0.8 pF 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)	Recommended mounting pad (Top view)			
		mm inch				mm inch		
• Standards			UL (E43149), CSA (LR26550)	UL (E43149), CSA (LR26550)	UL (E43149), CSA (LR26550), TÜV			
• Mounting method								
• Page			141	145	149			

• Type of relay		RF Low on resistance Type						RF SOP Type	
		1a Type			2a Type			4a Type	
		AC/DC Type			AC/DC Type			AC/DC Type	
mm inch									
									
• Features		• Low on-resistance type for high frequency application			• 2-channel type of low on-resistance type			• 4-channel (Form A) 16-pin type	
		Part No.	AQV225N	AQV227N	AQV224N	AQW225N	AQW227N	AQW224N	AQS225S
• Output	Load voltage*	Peak AC	80 V	200 V	400 V	80 V	200 V	400 V	80 V
		DC	80 V	200 V	400 V	80 V	200 V	400 V	80 V
• Output	Continuous load current	1 A							
		0.5 A							
	Peak load current	0.15 A	0.07 A	0.05 A	0.12 A	0.05 A	0.04 A	0.05 A	
	Power dissipation*	360 mW			800 mW			600 mW	
	ON resistance	Typical	7 Ω	30 Ω	70 Ω	7 Ω	30 Ω	70 Ω	21 Ω
		Maximum	10 Ω	50 Ω	100 Ω	10 Ω	50 Ω	100 Ω	35 Ω
	Output capacitance (Typical)	10 pF			10 pF			4.5 pF	
Off state leakage current	Max. 10 nA			Max. 10 nA			10 nA		
• Input	LED forward current*	50 mA			50 mA			50 mA	
	LED reverse voltage*	3 V			3 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	0.9 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	0.4 mA			0.4 mA			0.3 mA	
	Typical	0.85 mA			0.8 mA			0.85 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	0.2 ms			0.2 ms			0.1 ms
		Maximum	0.5 ms			0.5 ms			0.3 ms
	Turn off time [Reverse (ON) time]	Typical	0.08 ms			0.08 ms			0.03 ms
		Maximum	0.2 ms			0.2 ms			0.1 ms
• Total power dissipation*	410 mW			850 mW			650 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)	Through hole terminal (Bottom view)				Surface mount terminal recommended mounting pad (Top view)				
					Through hole terminal (Bottom view)				
		mm inch			mm inch				
		Tolerance: ±0.1 ±.004			Tolerance: ±0.1 ±.004				
• Standards	UL (E43149), CSA (LR26550), TÜV			UL (E43149), CSA (LR26550), TÜV			UL (E43149), CSA (LR26550)		
• Mounting method									
• Page	152			155			158		

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

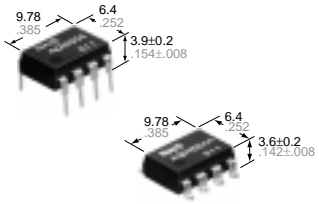
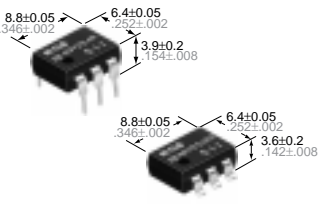
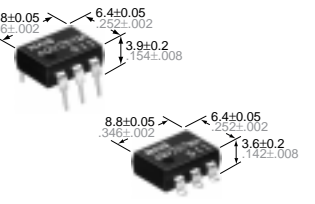
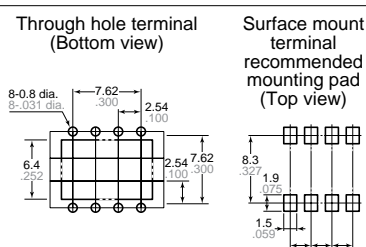
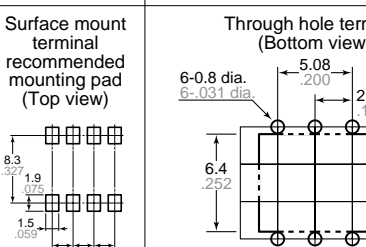
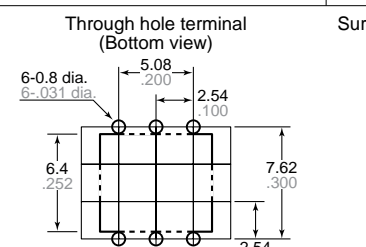
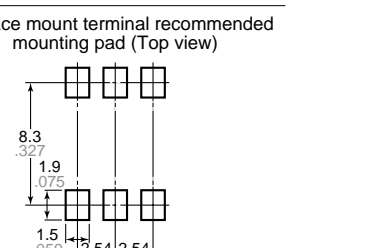
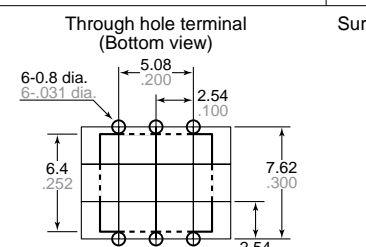
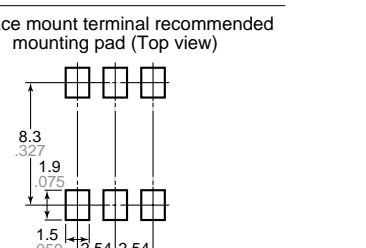


PhotoMOS Selector Chart

• Type of relay		HE Type											
		1a Type											
		AC/DC Type											
mm inch										Standard I/O isolation type		Reinforced I/O isolation type	
		• High sensitivity and low on-resistance											
• Features													
		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	
	Continuous load current	1 A	-----										
		0.5 A	0.5 A	0.4 A	0.35 A	0.25 A	0.2 A	0.15 A	0.03 A	0.02 A	0.2 A	0.15 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*		3 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 _F = 5 mA)	Typical		1.14 V						1.5 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), CSA (LR26550), TÜV								UL (E43149), CSA (LR26550), TÜV, BSI, VDE				
• Mounting method													
• Page	161												

• Type of relay		HE Type					
		2a Type		1b Type		2b Type	
		AC/DC Type		AC/DC Type		AC/DC Type	
mm inch							
				Standard I/O isolation type		Reinforced I/O isolation type	
• Features		<ul style="list-style-type: none"> High sensitivity and low on-resistance 2 Form A type 		<ul style="list-style-type: none"> High sensitivity and low on-resistance Normally closed type 		<ul style="list-style-type: none"> High sensitivity and low on-resistance 2 Form B type 	
		Part No.	AQW254	AQV453	AQV454	AQV454H	AQW454
• Load voltage*	Peak AC		400 V	250 V	400 V		400 V
	DC		400 V	250 V	400 V		400 V
• Output	Continuous load current	1 A					
		0.5 A					
	Peak load current		0.12 A	0.2 A	0.15 A	0.15 A	0.12 A
	Power dissipation*		800 mW	360 mW		800 mW	
	ON resistance	Typical	12.4 Ω	5.5 Ω	10.5 Ω		11 Ω
		Maximum	16 Ω	8.0 Ω	16 Ω		16 Ω
	Output capacitance (Typical)		170 pF	350 pF	170 pF		170 pF
Off state leakage current		Max. 1 μA	Max. 1 μA		Max. 10 μA	Max. 1 μA	
• Input	LED forward current*		50 mA	50 mA		50 mA	
	LED reverse voltage*		3 V	3 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	0.9 mA	1.0 mA	0.9 mA	1.4 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	0.9 mA	0.8 mA	1.3 mA	0.8 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	1.52 ms	1.2 ms	1.8 ms	1.2 ms
		Maximum	2 ms	3 ms	2 ms	3 ms	2.0 ms
	Turn off time [Reverse (ON) time]	Typical	0.05 ms	0.4 ms	0.36 ms	0.4 ms	0.36 ms
		Maximum	0.2 ms	1 ms	1 ms	1 ms	1.0 ms
• Total power dissipation*			850 mW	410 mW		850 mW	
• I/O isolation voltage*			1,500 V AC	1,500 V AC	5,000 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	1.3 pF		0.8 pF	
	Maximum		1.5 pF	3 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)	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		mm inch		mm inch		
		Tolerance: ±0.1 ±.004		Tolerance: ±0.1 ±.004		Tolerance: ±0.1 ±.004	
• Standards		UL (E43149), CSA (LR26550), TÜV		UL (E43149), CSA (LR26550), TÜV	UL (E43149), CSA (LR26550), BSI	UL (E43149), CSA (LR26550), TÜV	
• Mounting method							
• Page		165		168		171	

*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		HE LED Display Type		HE Soft-ON/OFF Type	
		1a1b Type		1a Type		1a Type	
		AC/DC Type		AC/DC Type		AC/DC Type	
							
mm inch							
• Features		<ul style="list-style-type: none"> • High sensitivity and low on-resistance • 1 Form A 1 Form B type 		<ul style="list-style-type: none"> • Low on resistance and LED display 		<ul style="list-style-type: none"> • High sensitive and low on-resistance 	
		Part No.	AQW654	AQV254R	AQV257M		
• Output		Load voltage*	Peak AC	400 V	400 V	200 V	
			DC	400 V	400 V	200 V	
		Continuous load current	1 A				
			0.5 A				
		Peak load current	0.12 A	0.36 A	0.5 A	0.75 A	
		Power dissipation*	800 mW	360 mW	360 mW		
		ON resistance	Typical 10 Ω (N.O.), 11 Ω (N.C.) Maximum 16 Ω (N.O.), 16 Ω (N.C.)	12.4 Ω 16 Ω	2.6 Ω 4 Ω		
		Output capacitance (Typical)	170 pF	170 pF	170 pF		
		Off state leakage current	Max. 1 μA	Max. 1 μA	Max. 1 μA		
• Input		LED forward current*	50 mA	25 mA	50 mA		
		LED reverse voltage*	3 V	3 V	3 V		
		Peak forward current	1 A	60 mA	1 A		
		Power dissipation*	75 mW	90 mW	75 mW		
		LED operate current [LED operate (OFF) current]	Typical 0.9 mA Maximum 3.0 mA	1.0 mA 3.0 mA	0.6 mA 2.0 mA		
		LED turn off current [LED reverse (ON) current]	Minimum 0.4 mA Typical 0.8 mA	0.4 mA 0.9 mA	0.2 mA 0.5 mA		
		LED dropout voltage (I _F = 5 mA)	Typical 1.14 V Maximum 1.5 V	2.8 V 3.5 V	1.14 V 1.5 V		
• Switching speed		Turn on time [Operate (OFF) time]	Typical 0.8 ms (N.O.), 1.2 ms (N.C.) Maximum 2.0 ms	0.8 ms 2 ms	5.1 ms (Rise time: typical 2.2 ms) 15 ms (Fall time: min. 1.0 ms)		
		Turn off time [Reverse (ON) time]	Typical 0.04 ms (N.O.), 0.36 ms (N.C.) Maximum 1.0 ms	0.05 ms 0.2 ms	3.2 ms (Rise time: typical 1.3 ms) 10 ms (Fall time: 0.6 ms)		
		Total power dissipation*	850 mW	410 mW	410 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	1.3 pF 3 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)		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)		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), CSA (LR26550), TÜV		UL (E43149), CSA (LR26550), TÜV		UL (E43149), CSA (LR26550), TÜV	
• Mounting method				 			
• Page		174		177		180	

• Type of relay		HF Type								HS Type				
		1a Type								1a Type				
		DC Type				AC/DC Type				AC/DC Type				
mm inch														
		• Low on-resistance • Control with an input current of 10 mA				• Low on-resistance • Control with an input current of 10 mA				• Highest sensitivity LED operate current: typical 0.31 mA				
• Features		Part No.	AQV101	AQV102	AQV103	AQV104	AQV201	AQV202	AQV203	AQV204	AQV234			
Load voltage*	Peak AC	—								40 V	60 V	250 V	400 V	400 V
	DC	40 V	60 V	250 V	400 V	40 V	60 V	250 V	400 V	400 V	400 V			
• Output	Continuous load current	1 A												
		0.5 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	0.3 A				
	Power dissipation*	800 mW				360 mW				500 mW				
	ON resistance	Typical	0.3 Ω	0.37 Ω	2.7 Ω	6.3 Ω	0.6 Ω	0.74 Ω	2.5 Ω	12.4 Ω	30 Ω			
		Maximum	0.5 Ω	0.7 Ω	4 Ω	8 Ω	1 Ω	1.4 Ω	8 Ω	16 Ω	50 Ω			
	Output capacitance (Typical)	600 pF		300 pF		350 pF		170 pF		45 pF				
Off state leakage current	Max. 1 μA													
• Input	LED forward current*	50 mA				50 mA				50 mA				
	LED reverse voltage*	3 V				6 V				3 V				
	Peak forward current	1 A				1 A				1 A				
	Power dissipation*	150 mW				150 mW				75 mW				
	LED operate current [LED operate (OFF) current]	Typical	2.3 mA				2.4 mA				0.31 mA			
		Maximum	5 mA				5 mA				0.5 mA			
LED turn off current [LED reverse (ON) current]	Minimum	0.8 mA				0.8 mA				0.1 mA				
	Typical	2.2 mA				2.2 mA				0.29 mA				
LED dropout voltage (If = 5 mA)	Typical	2.3 V				2.3 V				1.1 V				
	Maximum	3 V				3 V				1.5 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	0.89 ms			
		Maximum	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	2 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	0.22 ms			
		Maximum	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms			
• Total power dissipation*	410 mW				410 mW				550 mW					
• I/O isolation voltage*	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	1.3 pF				1.3 pF				0.8 pF				
	Maximum	3 pF				3 pF				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)				Through hole terminal (Bottom view)		Surface mount terminal recommended mounting pad (Top view)			
mm inch		Tolerance: ±0.1 ±.004												
• Standards	UL (E43149), CSA (LR26550), TÜV				UL (E43149), CSA (LR26550), TÜV				UL (E43149), CSA (LR26550), TÜV					
• Mounting method														
• Page	184				184				189					

*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		PD Type									
		1a Type				2a Type					
		AC/DC Type				AC/DC Type					
		mm inch									
• Features		<ul style="list-style-type: none"> • High capacity • High sensitivity 				<ul style="list-style-type: none"> • Flat-Packaged type • High sensitivity 					
		Part No.	AQY272	AQY275	AQY277	AQY274	AQW272	AQW275	AQW277	AQW274	
• Load voltage*	Peak AC		60 V	100 V	200 V	400 V	60 V	100 V	200 V	400 V	
	DC		60 V	100 V	200 V	400 V	60 V	100 V	200 V	400 V	
• Output	Continuous load current	2 A	2 A	1.3 A	0.65 A	0.35 A	1.8 A	0.55 A	0.3 A	0.18 A	
	Peak load current		0.6 A	4.0 A	2.0 A	1.0 A	6.0 A	4.0 A	2.0 A	1.0 A	
		Power dissipation*	700 mW				1,100 mW				
• ON resistance	Typical		0.11 Ω	0.23 Ω	0.7 Ω	2.1 Ω	0.11 Ω	0.23 Ω	0.7 Ω	2.1 Ω	
	Maximum		0.18 Ω	0.34 Ω	1.1 Ω	3.2 Ω	0.18 Ω	0.34 Ω	1.1 Ω	3.2 Ω	
		Output capacitance (Typical)	1,400 pF		600 pF		1,400 pF		600 pF		
		Off state leakage current	Max. 10 μA				Max. 10 μA				
• Input	LED forward current*		50 mA				50 mA				
	LED reverse voltage*		3 V				3 V				
	Peak forward current		1 A				1 A				
	Power dissipation*		75 mW				75 mW				
	LED operate current [LED operate (OFF) current]	Typical		1.0 mA				1.0 mA			
		Maximum		3.0 mA				3.0 mA			
	LED turn off current [LED reverse (ON) current]	Minimum		0.4 mA				0.4 mA			
		Typical		0.9 mA				0.9 mA			
	LED dropout voltage (I _F = 5 mA)	Typical		1.16 V				1.16 V			
		Maximum		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	2.46 ms	2.40 ms	1.12 ms	1.65 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	
	Turn off time [Reverse (ON) time]	Typical	0.22 ms	0.21 ms	0.10 ms	0.08 ms	0.22 ms	0.21 ms	0.10 ms	0.08 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	
• Total power dissipation*			750 mW				1,100 mW				
• I/O isolation voltage*			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				
	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)										
			mm inch								
• Standards			UL (E43149), CSA (LR26550), TÜV				UL (E43149), CSA (LR26550), TÜV				
• Mounting method											
• Page			192				196				

• Type of relay		Power PhotoMOS Type										
		1a Type									1b Type	
		AC/DC Type				DC Type					AC/DC Type	
• 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*		3 V				3 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	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 (If = 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), CSA (LR26550), TÜV									UL (E43149), CSA (LR26550), TÜV		
• Mounting method												
• Page	200									206		

*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		Power PhotoMOS with internal varistor Type				Power PhotoMOS voltage-sensitive Type																							
		1a Type				1a Type																							
		AC/DC Type				AC/DC Type				DC Type																			
• Features		<ul style="list-style-type: none"> Flat-Packaged type High sensitivity 				<ul style="list-style-type: none"> Low on-resistance Control with an input current of 10 mA 																							
		Part No.		AQZ202V	AQZ205V	AQZ207V	AQZ204V	AQZ202D	AQZ205D	AQZ207D	AQZ204D	AQZ102D	AQZ105D	AQZ107D	AQZ104D														
• Output		Load voltage*	Peak AC				Peak AC				Peak AC																		
		DC	22 V	38 V	85 V	180 V	60 V	100 V	200 V	400 V	60 V	100 V	200 V	400 V															
• Output		Continuous load current																											
			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	9.0 A	6.0 A	3.0 A	1.5 A														
• Input		Power dissipation*		1.6 W				1.6 W				1.35 W																	
		ON resistance	Typical	0.11 Ω	0.23 Ω	0.7 Ω	2.1 Ω	0.066 Ω	0.180 Ω	0.64 Ω	2.4 Ω	0.033 Ω	0.090 Ω	0.33 Ω	1.23 Ω														
• Input		Output capacitance (Typical)		2,200 pF		800 pF		700 pF		1,400 pF		600 pF		1,700 pF		900 pF													
		Off state leakage current		1 mA				10 μA				10 μA																	
• Input		LED forward current*		50 mA				Input voltage: 30 V				Input voltage: 30 V																	
		LED reverse voltage*		3 V				Input reverse voltage: 3 V				Input reverse voltage: 3 V																	
• Input		Peak forward current		1 A				—				—																	
		Power dissipation*		75 mW				300 mW				300 mW																	
• Input		LED operate current [LED operate (OFF) current]		Typical		1.0 mA		3.0 mA		Operate voltage: 1.4 V		4 V		Operate voltage: 1.4 V		4 V													
		LED turn off current [LED reverse (ON) current]		Minimum		0.4 mA		0.9 mA		Turn off voltage: 0.8 V		1.3 V		Turn off voltage: 0.8 V		1.3 V													
• Input		LED dropout voltage (I _F = 5 mA)		Typical		1.25 V		1.5 V		Input current (typ.): 6.5 mA				Input current (typ.): 6.5 mA															
		Switching speed		Turn on time [Operate (OFF) time]		Typical		2.46 ms		2.40 ms		1.12 ms		1.65 ms		5.8 ms		4.2 ms		2.7 ms		2.3 ms		3.3 ms		2.2 ms		1.5 ms	
• Input		Turn off time [Reverse (ON) time]		Typical		0.22 ms		0.21 ms		0.10 ms		0.08 ms		0.2 ms		0.2 ms		0.1 ms		0.1 ms		0.2 ms		0.2 ms		0.1 ms		0.1 ms	
		Total power dissipation*		1.6 W				1.6 W				1.35 W																	
• Input		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 +60°C -40°F to +140°F		-20°C to +75°C -40°F to +167°F		-40°C to +100°C -40°F to +212°F		-20°C to +75°C -40°F to +167°F		-40°C to +100°C -40°F to +212°F											
• Input		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		1.5 pF		0.8 pF		1.5 pF		0.8 pF		1.5 pF													
• Input		Initial I/O isolation resistance		Min. 1,000 MΩ				Min. 1,000 MΩ				Min. 1,000 MΩ																	
		Terminal layout (.100, inch grid)																											
• Standards		UL (E43149), CSA (LR26550), TÜV																											
• Mounting method																													
• Page		210				214				214																			

• Type of relay		Power PhotoMOS High capacity Type		
		1a Type		
		AC/DC Type		
mm inch				
				• High capacity • Low on-resistance • Controls low-level input signals
• Features		Part No.	AQZ262	AQZ264
• Output	Load voltage*	Peak AC	60 V	400 V
		DC	60 V	400 V
• Output	Continuous load current	6 A	6.0 A	
		1 A		1.0 A
	Peak load current	10.0 A	3.0 A	
	Power dissipation*	3.0 W		
	ON resistance	Typical	0.036 Ω	1.0 Ω
		Maximum	0.05 Ω	1.4 Ω
	Output capacitance (Typical)		1,400 pF	600 pF
Off state leakage current		10 μA		
• Input	LED forward current*	50 mA		
	LED reverse voltage*	3 V		
	Peak forward current	1 A		
	Power dissipation*	75 mW		
	LED operate current [LED operate (OFF) current]	Typical	1.0 mA	
		Maximum	3.0 mA	
LED turn off current [LED reverse (ON) current]	Minimum	0.4 mA		
	Typical	0.9 mA		
LED dropout voltage (I _F = 5 mA)	Typical	1.25 V		
	Maximum	1.5 V		
• Switching speed	Turn on time [Operate (OFF) time]	Typical	5 ms	4 ms
		Maximum	10 ms	10 ms
• Switching speed	Turn off time [Reverse (ON) time]	Typical	0.32 ms	0.14 ms
		Maximum	3.0 ms	3.0 ms
• Total power dissipation*		3.0 W		
• 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	2.0 pF		
	Maximum	4.0 pF		
• Initial I/O isolation resistance		Min. 1,000 MΩ		
• Terminal layout (.100, inch grid)	Mounting hole location (Bottom view)			
mm inch		Tolerance: ±0.1 ±.004		
• Standards < >: pending				
• Mounting method				
• Page		219		

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