

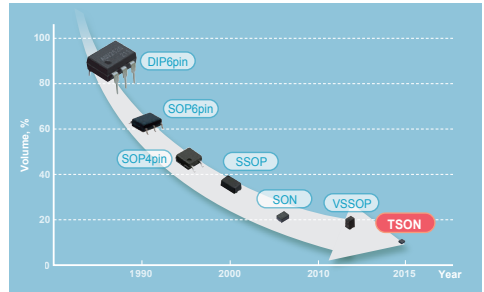
Overview

PHOTOMOS RELAYS



What makes PhotoMOS® relays so successful?

Modern semiconductor technology enables fast, quiet, bounce-free switching, even in miniature sizes. PhotoMOS relays nevertheless enjoy an almost unlimited lifetime if used according to the specifications. Moreover, they are extremely reliable, unaffected by vibrations, and their ON-resistance remains stable throughout their entire lifetime.

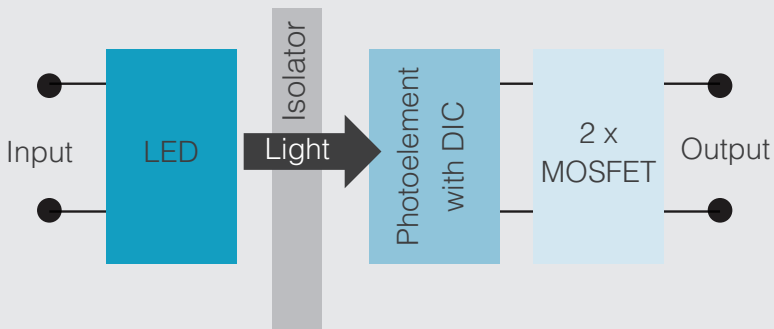


Package size change

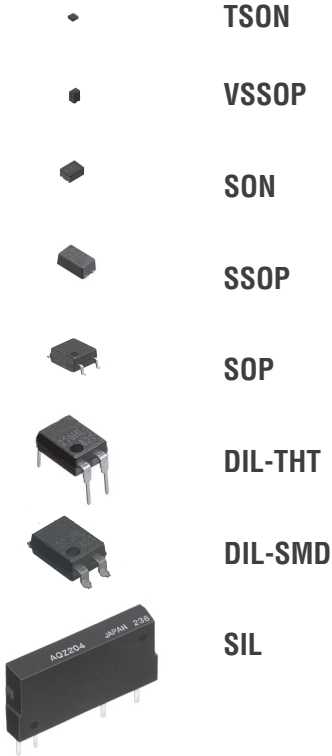
PhotoMOS® technology

The basic construction of the PhotoMOS relay can be seen in the illustration. Light emitted from an LED on the input side passes through an isolator permeable to light and is detected by a solar cell. Via a trigger circuit, the solar cell's output voltage controls the gates of two

source-coupled MOSFETs at the output. This arrangement allows PhotoMOS relays to switch both AC and DC loads. The integration of MOSFET technology in PhotoMOS relays differentiates them significantly from semiconductor relays with triacs or transistors at the output.



PACKAGE VARIATIONS



TSON

VSSOP

SON

SSOP

SOP

DIL-THT

DIL-SMD

SIL

NEW

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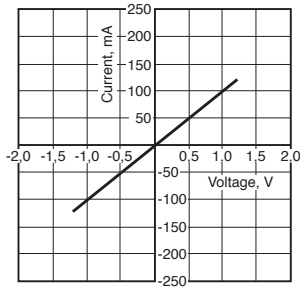
The most important advantages at a glance

- › Linear output characteristics
- › No threshold voltage
- › Low operate current (sensitive type $\leq 0.31\text{mA}$)
- › Low output capacitance (RF type $\leq 1\text{pF}$)
- › Absolute minimum leakage current (pA)
- › Extremely long lifetime
- › Stable ON-resistance over the entire lifetime
- › Extremely compact design (TSON, VSSOP, SON, SSOP)
- › No contact bounce
- › Highly resistant to shock and vibration
- › Flexible mounting orientation

A FEW DISTINGUISHING FEATURES

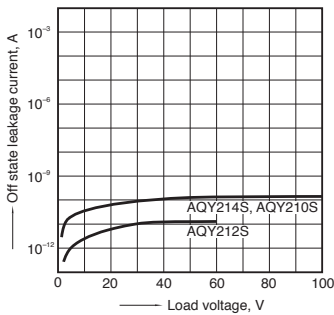
1. Linear output characteristics

(e.g. AQY225R2V)



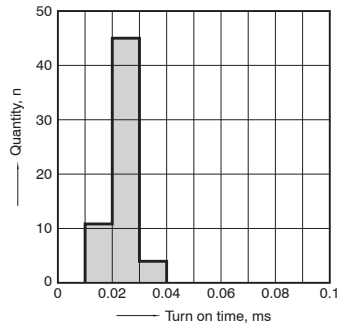
2. Low off-state leakage current

in the pA range (e.g. AQY21*S)



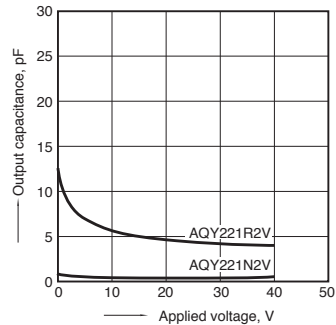
3. Fast switching times

with little variation (e.g. AQY221N3V)



4. Low output capacitance




(e.g. AQY221*V)



Typical applications

- › Measuring devices and technology
- › IC and PC board testers
- › Multiplexers
- › Medical technology
- › Industrial control systems
- › Battery management
- › Signal/alarm contacts
- › Outputs for programmable controllers
- › Pulse and counter outputs
- › Isolation monitoring

POPULAR TYPE SELECTION TABLE

	Type ¹⁾	Package	Contact	Voltage (V) ²⁾	Current (A) ²⁾	R _{on} ³⁾ (Ω)	C _{out} ³⁾ (pF)	Info
	AQY212EH(A)	DIP4	1a	60	0.55	0.85	80	General use
	AQY212GH(A)				1.1	0.34	220	
	AQY210EH(A)			350	0.13	18	45	
	AQY214EH(A)			400	0.12	26	45	
	AQY216EH(A)			600	0.05	52	35	
	AQY212S	SOP4		60	0.5	0.83	80	
	AQY212GS				1.0	0.34	220	
	AQY210S			350	0.12	17	45	
	AQY214S			400	0.1	25	45	
	AQY412S	SOP4	1b	60	0.5	1	450	
	AQY410S			350	0.12	18	110	
	AQY414S			400	0.1	26	100	
	AQY232S			60	0.5	0.85	80	
	AQY230S			350	0.12	19	45	
AQY234S	400	0.1	27	45				
	AQV112KL(A)	DIP6	1a	60	0.5	0.55	300	Short circuit protected
	AQY210KS	SOP4		350	0.12	23	42	
	AQV251G	DIP6	1a	30	3.5	0.035	350	High power
	AQV252G2S	SOP6		50	3	0.04	360	
	AQV252G	DIP6		60	2.5	0.08	240	
	AQV255GS	SOP6		80	1.25	0.09	300	
	AQV259H(A)	DIP6		1.000	0.03	85	80	
	AQV258H(A)	DIP6		1.500	0.02	345	80	
	AQY2C1R6P	TSOP	1a	30	0.75	0.22	40	Low CxR for high frequencies
	AQY2C1R2P			40	0.3	0.9	14.5	
	AQY2C2R2P			60	0.3	1.0	27	
	AQY221N3T	VSSOP		25	0.15	5.5	1.1	
	AQY221N2T			40	0.12	9.5	1.1	
	AQY222R2T			60	0.4	0.8	27	
	AQY225R3T			100	0.12	8.8	5.8	
	AQY221N3M	SON	1a	25	0.15	5.5	1.1	
	AQY221N2M			40	0.12	9.5	1.1	
	AQY221R2M			40	0.25	0.8	14	
	AQY221N2V	SSOP		40	0.12	9.5	1	
	AQY221R2V			40	0.25	0.75	12.5	
	AQY221R4V			40	0.5	0.55	24	
	AQY225R2V			80	0.12	10.5	4.5	
	AQY225R3V			100	0.12	8.8	5.8	
	AQZ202	SIL	1a	60	3.0	0.11	1400	AC and DC
	AQZ205			100	2.0	0.23	1400	
	AQZ204			400	0.5	2	600	
	AQZ404		1b	400	0.5	2.8	2000	

1) A = SMD type, 2) Maximum values (DC or peak AC), 3) Typical value



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