Omron's advanced HF relay designs... apply innovative triplate microstrip type transmission line design to achieve optimal high frequency characteristics within the smallest possible package. The ***G6K-RF***, for example is just 5.4mm high, yet within this case size, it offers superior 1GHz characteristics such as an isolation of 20 dB min between contacts of the same polarity, 0.2dB insertion loss, and power consumption of just 100mW.

New Co-axial relay... With a revival in the telecommunications infrastructure market, the new ***G9YA*** 26.5GHz coaxial relay is capable of carrying 120W at 3GHz for mobile communications base station and antenna applications. They feature low power consumption and space-saving size. The fail-safe model requires just 700mW, whilst the latching version saves even more power because it requires only a set or reset pulse to change operating state.

Small size, low power consumption... The ***G6Z, G6Y*** and ***G6W*** 10W RF relays all use microstrip technology to achieve small size and low power consumption combined with excellent RF performance. All three have low power consumption of 200mW feature good isolation characteristics. At 1GHz, the isolation for the G6Y is 60dB. At 2.5GHz, the isolation for the G6Z is 45dB(Y-TH) and the G6W is 60dB.

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For a Small World

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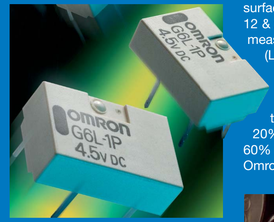
SIGNAL RELAY
Selector Guide

PCB Signal Relays

Omron supplies one of the widest ranges of signal relays in Europe and is at the forefront of development in specialist products, RF switching and surface mount technology.



Optimised design... Our investment in R&D is focused on development of signal relays to achieve cleaner load switching and we continue to lead the field in developing relays with improved package sizes for optimised PCB design and reducing coil power consumption for lower power applications. For example the footprint of the new Omron ***G6J-Y*** series measures 5.7 x 10.6 mm, creating a slim device that also achieves a low profile of 9.0 mm allowing relays to be closely stacked in rack-mount systems.

Thinnest relays in the world... The ***G6L*** family is one of the thinnest relays in the world, making it ideal for applications where compact component mounting is necessary. Available in both through-hole and surface mount versions, with 3, 4.5, 12 & 24VDC coil voltages, the G6L measures just 7.0mm (W) x 10.6mm (L); the SMD version is 4.5mm high, while the TH version is only 4.1mm high. The compact dimensions mean that the G6L can save typically 20% in mounting area and over 60% in volume compared with the Omron's G5V-1 relays.

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SIGNAL RELAY SELECTOR GUIDE

OMRON

Model	G5V-1	G6E	G6L	G6H	G6J-Y	G6K	G6S	G5A
Characteristics	Ultra-miniature relay	Sub-miniature, sensitive relay	Ultra-thin flat relay	Ultra-small relay with 5mm height	Ultra compact and slim relay	Sub-miniature surface mounting relay	Surface mounting relay with 2.5kV surge voltage	Sub-miniature relay
	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant
Dimensions (LxWxH)	12.5 x 7.5 x 10.0	16.0 x 10.0 x 8.0	G6L-1P: 10.6 x 7.0 x 4.1 G6L-1F: 10.6 x 7.0 x 4.5	G6H-2F: 14.3 x 9.3 x 6.6 G6H-2: 14.3 x 9.3 x 5.4	G6J-2FS-Y: 10.6 x 5.7 x 10.0 G6J-2FL-Y: 10.6 x 5.7 x 10.0 G6J-2P-Y: 10.6 x 5.7 x 9.0	G6K-2F: 10.0 x 6.5 x 5.4 G6K-2G: 10.0 x 6.5 x 5.4 G6K-2P: 10.0 x 6.5 x 5.0	G6S-2F: 14.8 x 7.3 x 9.2 G6S-2: 14.8 x 7.3 x 9.2 G6S-2G: 14.8 x 7.3 x 9.2	16.0 x 9.9 x 8.4
Contact Ratings – Contact Form	SPDT	SPDT	SPST-NO	DPDT	DPDT	DPDT	DPDT	DPDT
Contact Type	Single Crossbar	Bifurcated Crossbar	Single Crossbar	Single Crossbar	Bifurcated Crossbar	Bifurcated Crossbar	Bifurcated Crossbar	Bifurcated Crossbar
Contact Material	Ag (Au-alloy)	Ag (Au-alloy))	Ag (Au-alloy)	Ag (Au-alloy)	Ag (Au alloy)	Ag (Au alloy)	Ag (Au alloy)	Ag (Au-alloy)
Resistive Load	0.5 A at 125 VAC 1 A at 24 VDC	0.4 A at 125 VAC 12 A at 30 VDC	0.3 A at 125 VAC 1 A at 24 VDC	0.5 A at 125 VAC 1 A at 30 VDC	0.3 A at 125 VAC 1 A at 30 VDC	0.3 A at 125 VAC 1 A at 30 VDC	0.5 A at 125 VAC 1 A at 30 VDC	0.5 A at 30 VAC 1 A at 30 VDC
Max. Switching Current	1 A	3 A	1 A	1 A	10 μA	1 A	2 A	1 A
Min. Permissible load	1 mA at 5 VDC	10 μA at 10 mVDC	1 mA at 5 VDC	10 μA at 10 mVDC	1 μA at 10 mVDC	10 μA at 10 mVDC	10 μA at 10 mVDC	10 μA at 10 mVDC
Max. Switching Power	125 VA at 90 W	50 VA, 60 W	37.5 VA, 24 W	62.5 VA, 33 W	37.5 VA, 30 W	37.5 VA, 30 W	62.5 VA, 60 W	37.5 VA, 33 W
Max. Switching Voltage	125 VAC, 60 VDC	250 VAC, 220 VDC	125 VAC, 60 VDC	125 VAC, 110 VDC	125 VAC, 110 VDC	125 VAC, 60 VDC	250 VAC, 220 VDC	125 VAC, 60 VDC
Coil ratings – Rated Voltage	3 to 24 VDC	3 to 48 VDC	3 to 24 VDC	3 to 48 VDC	3 to 24 VDC	3 to 24 VDC	4.5 to 24 VDC	3 to 48 VDC
Power Consumption (Approx.)	150 mW	200 to 400 mW	180 to 230 mW	140 to 280 mW	140 to 230 mW	100 mW	140 to 200 mW	200 to 280 mW
Endurance – Electrical (operations)	100,000 min	500,000 min	100,000 min	200,000 min	100,000 min	100,000 min	100,000 min	100,000 min
Mechanical (operations)	5,000,000 min	100,000,000 min	5,000,000 min	100,000,000 min	50,000,000 min	50,000,000 min	100,000,000 min	50,000,000 min
Dielectric strength – Between coil & contacts	1,000 VAC	1,500 VAC	1,000 VAC	1,000 VAC	1,500 VAC	1,500 VAC	2,000 VAC	1,000 VAC
Between contacts of different polarity	–	–	–	1,000 VAC	1,000 VAC	1,000 VAC	1,500 VAC	1,000 VAC
Between contacts of same polarity	400 VAC	1,000 VAC	750 VAC	750 VAC	750 VAC	750 VAC	1,000 VAC	500 VAC
Ambient temperature (operating)	-40 to 70 °C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-40°C to 85°C	-40°C to 70°C	-40°C to 85°C	-40°C to 70°C
Variations – Single Side Stable	•	•	•	•	•	•	•	•
Single Winding Latching		•		•	•	•	•	•
Double Winding Latching		•		•			•	•
Through Hole	•	•	•	•	•	•	•	•
Surface Mount			•	•	•	•	•	
Fully sealed	•	•	•	•	•	•	•	•
Approved Standards	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
Packaging – Min. Pack Quantity	25 (Tube)	25 (Tube)	50 (Tube)	G6H-2F: 50 (Tube) G6H-2: 25 (Tube)	50 (Tube)	50 (Tube)	50 (Tube)	25 (Tube)
Min. Order Quantity	500	500	500 (Tube), 1,000 (Tape & reel)	G6H-2F: 1,000 (Tube), 400 (T&r) G6H-2: 500	1,000 (Tube), 400 (Tape & reel)	1,000 (Tube), 900 (Tape & reel)	1,000 (Tube), 400 (Tape & reel)	500

Model	G5V-2	G6A	G6Y	G6K(U)-2F-RF	G6Z	G6W	G9YA	G9YB NEW
Characteristics	Miniature relay for signal circuits	Fully sealed relay with high surge dielectric for use in telecommunications equipment	High Frequency Relay High frequency relay with high isolation and low insertion loss	High Frequency Relay Surface mounting 1GHz band high frequency relay	High Frequency Relay Surface mountable 2.6GHz band miniature high frequency relay	High Frequency Relay Surface mountable 2.5GHz band miniature high-frequency relay	Coaxial Switch High frequency co-axial switch to 26.5GHz bandwidth. The carry power is 120W at 3GHz	Coaxial Switch Unit Custom made
	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant	RoHS Compliant
Dimensions (LxWxH)	20.5 x 10.1 x 11.5	G6A-2: 20.2 x 10.1 x 8.4 G6A-4: 35.4 x 10.1 x 8.4	20.7 x 11.7 x 9.2	10.3 x 6.9 x 5.4	G6Z-1F: 20.0 x 8.6 x 9.3 G6Z-1PE: 20.0 x 8.6 x 8.9	G6W-1F: 20.0 x 9.4 x 9.3 G6W-1P: 20.0 x 9.4 x 8.9	34.0 x 13.2 x 39.0	76.2 x 68.9 x 16.0
Contact Ratings – Contact Form	DPDT	G6A-2: DPDT G6A-4: 4PDT	SPDT	DPDT	SPDT	SPDT	SPDT	SP6T/SP4T Transfer
Contact Type	Bifurcated Crossbar	Bifurcated Crossbar	Double-braking contact	Bifurcated Crossbar	Double-braking contact	Double-braking single contact	Single contact	Bifurcated Crossbar
Contact Material	Ag (Au-alloy)	Ag (Au-alloy) / AgPd (Au-alloy) / Ag (Au-alloy) / AgPd (Au-alloy)	Au alloy	Au alloy	Au alloy	Au alloy	Au alloy	Au alloy
Resistive Load	0.5 A at 125 VAC 2 A at 30 VDC	0.5 A at 125 VAC 2 A at 30 VDC / 0.3 A at 125 VAC 1 A at 30 VDC / 0.5 A at 125 VAC 2 A at 30 VDC / 0.3 A at 125 VAC 1 A at 30 VDC	10 mA at 30 VAC 10 mA at 30 VDC	0.3A at 125 VAC 1 A at 30 VDC	10 mA at 30 VAC 10 mA at 30 VDC	10 mA at 30 VAC 10 mA at 30 VDC	–	300 mA at 125 VAC 1 A at 30 VDC
Max. Switching Current	2 A	2 A	0.5 A	1 A	0.5 A	0.5 A	–	1 A
Min. Permissible load	10 μA at 10 mVDC	10 μA at 10 mVDC	10 μA at 10 mVDC	10 μA at 10 mVDC	10 μA at 10 mVDC	10 μA at 10 mVDC	–	–
Max. Switching Power	62.5 VA, 60 W	125 VA, 60 W	10 VA (AC), 10 W (DC)	1 W	10 VA (AC), 10 W (DC)	10 VA (AC), 10 W (DC)	–	1 W
Max. Switching Voltage	125 VAC, 125 VDC	250 VAC, 220 VDC	30 VAC, 30 VDC	125 VAC, 60 VDC	30 VAC, 30 VDC	30 VAC, 30 VDC	–	125 VAC, 60 VDC
Coil ratings – Rated Voltage	3 to 48 VDC	3 to 48 VDC	3 to 24 VDC	3 to 24 VDC	3 to 24 VDC	3 to 24 VDC	4.5 to 28 VDC	5 to 12 VDC
Power Consumption (Approx.)	500 to 580 mW (150 mW high sensitivity version)	G6A-2: 200 to 235 mW G6A-4: 360 mW	200 mW	100 mW	200 mW	G6W-1F: 200 - 360 mW G6W-1P: 360 mW	Failsafe: 700mW Double coil Latching: 500mW	500 mW
Endurance – Electrical (operations)	100,000 min	500,000 min	300,000 min	100,000 min	300,000 min	300,000 min	5,000,000 min	100,000 times min
Mechanical (operations)	15,000,000 min	100,000,000 min	50,000,000 min	50,000,000 min	1,000,000 min	1,000,000 min	5,000,000 min	1,000,000 times min
Dielectric strength – Between coil & contacts	1,000 VAC	1,000 VAC	1,000 VAC	750 VAC	1,000 VAC	1,000 VAC	500 VAC	750 VAC
Between contacts of different polarity	1,000 VAC	1,000 VAC	1,000 VAC	750 VAC	500 VAC	–	500 VAC	750 VAC
Between contacts of same polarity	750 VAC	1,000 VAC	1,000 VAC	750 VAC	500 VAC	500 VAC	500 VAC	750 VAC
Ambient temperature (operating)	-25°C to 65°C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-55°C to 85°C	-20°C to 60°C
Variations – Single Side Stable	•	•	•	•	•	•	•	•
Single Winding Latching		•		•	•	•		•
Double Winding Latching		•			•	•	•	•
Through Hole	•	•	•		•	•		
Surface Mount				•	•	•		
Fully sealed	•	•	•		•	•		
Approved Standards	UL, CSA	UL, CSA	–	–	–	–	–	–
Packaging – Min. Pack Quantity	25 (Tube)	G6A-2: 25 (Tube) G6A-4: 10 (Tube)	100 (Tray)	50 (Tube)	25 (Tube)	25 (Tube)	–	–
Min. Order Quantity	500	500	500	1000	500 (Tube) 300 (Tape & reel)	500	–	–

Standard Terminal Arrangeme
(for other variations refer to data)

Standard Mounting Holes
(for other variations refer to data)

*The characteristics and drawing are DPDT type

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