OMRON

A diverse lineup of over 200 different models available in a wide range of packages, contact forms and functions

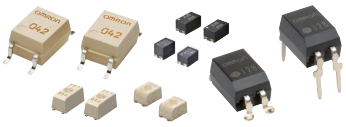
G3VM

MOS FET Relay

MOS FET Relay Module

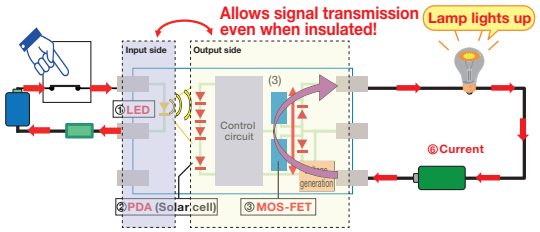
MOS FET Relay Product Selection

SPST — **NC** / **NO**



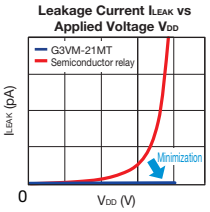
MOS FET Relay

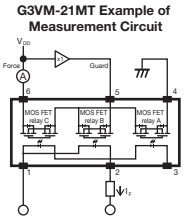
A relay function is achieved through combination of LED, PDA and MOS-FET



① Current flows through the LED, causing it to light up. ▶ ② PDA (solar cell) generates power. ▶ ③ MOS FET turns ON.

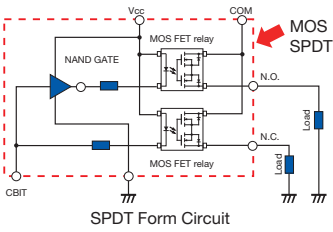
MOS FET Relay Module with Low Leakage Current Function





SPDT

MOS FET Relay Module with 1c Changeover Function



SPDT Form Circuit

Comparison with Contact Relays

Module details: P3

	Reed relay	Mechanical relay	T-module 21MT	SPDT module 66M	MOS FET relay
Contact reliability (ON resistance)	Average	Average	Excellent	Excellent	Excellent
Durability	Good	Average	Excellent	Excellent	Excellent
Leakage current	Excellent	Excellent	Excellent	Average	Average
Isolation	Excellent	Excellent	Excellent	Poor	Poor
1c contact	Excellent	Excellent	—	Excellent	—

MOS FET Relay Model Number / Packaging / Package Legend

MOS FET Relay

MOS FET Relay Model Number Legend

G3VM-□□ ① □ ② □ ③ □ ④ □ ⑤ □ ⑥

① Load voltage
2: 20 V 8: 80 V
3: 30 V 10: 100 V
4: 40 V 20: 200 V
5: 50 V 35: 350 V
6: 60 V 40: 400 V
7: 75 V 60: 600 V

② Contact form
1: 1a contact
2: 2a contact
3: 1b contact
4: 2b contact
5: 1a1b contact

③ Appearance
A: DIP 4-pin PCB terminal
B: DIP 6-pin PCB terminal
C: DIP 8-pin PCB terminal
D: DIP 4-pin surface-mount terminal
E: DIP 6-pin surface-mount terminal
F: DIP 8-pin surface-mount terminal
G: SOP 4-pin
H: SOP 6-pin
J: SOP 8-pin
L: SSOP 4-pin
P: USOP 4-pin
Q: S-VSON 4-pin
U: VSON 4-pin
V: SOP 4-pin (special)
W: P-SON 4-pin

④ Additional functions
L: Current limit
R: Low ON-resistance type
Y: Dielectric strength between I/O above 2.5 kV type
V: Voltage driving type

⑤ Serial code
When specifications overlap, a serial code (number) is added.

⑥ Input forward voltage
H: High input forward voltage
L: Low input forward voltage
*Some voltage driving types only

Note 1: Some products may have a different model number structure.
Note 2: In order to avoid confusion of I (English letter) and 1 (number), I (English letter) is not used here.
Note 3: For 4-pin SOP models, where the available marking space is insufficient to clearly differentiate model numbers with 6 or more suffix digits, the package type code ③ is omitted.

MOS FET Relay Packaging Types

General purpose packages

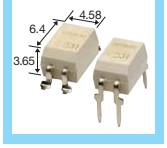
Package types	A DIP4 Through-hole	B DIP6 Through-hole	C DIP8 Through-hole	D DIP4 Surface-mount	E DIP6 Surface-mount	F DIP8 Surface-mount	G SOP4 Surface-mount	V SOP4 (special) Surface-mount	H SOP6 Surface-mount	J SOP8 Surface-mount
Reel packaging				TR: 1,500 pcs TR05: 500 pcs	TR: 1,500 pcs	TR: 1,500 pcs	TR: 2,500 pcs TR05: 500 pcs	TR: 3,000 pcs TR05: 500 pcs	TR: 2,500 pcs TR05: 500 pcs	TR: 2,500 pcs
Stick packaging	100 pcs per stick	50 pcs per stick	50 pcs per stick	100 pcs per stick	50 pcs per stick	50 pcs per stick	100 pcs per stick	125 pcs per stick	75 pcs per stick	50 pcs per stick

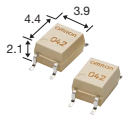
Small packages (moisture-proof)

Package types	L SSOP Surface-mount	W P-SON Surface-mount	P USOP Surface-mount	U VSON Surface-mount	Q S-VSON Surface-mount
Reel packaging	TR05: 500 pcs	TR05: 500 pcs	TR05: 500 pcs	TR05: 500 pcs	TR05: 500 pcs
Stick packaging					

Note 1: For packages without stick packaging, cut-tape items can be delivered in small quantities.
Note 2: Reel packaging is not available for through-hole type.
Note 3: Cut-tape items do not have moisture-proof packaging, so they cannot be mounted using reflow soldering (automatic mounting).

Package Types

DIP
Mounting area 100%


SOP
Mounting area 62%


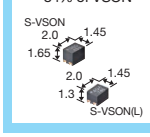
SSOP
Mounting area 24%


USOP
Mounting area 20%


P-SON
Mounting area 19%


VSON(R)
Mounting area 10%


VSON
Mounting area 9%


S-VSON
Mounting area 8%
*84% of VSON


MOS FET Relay Module Model Number Legend

MOS FET Relay Module

G3VM-□□ ① □ ② □ ③ □ ④ □ ⑤

① Load voltages
2: 20 V
6: 60 V
10: 100 V

② Contact forms
1: 1a contact*
6: SPDT contact*

③ Type
M: MOS FET Relay Module

④ Additional functions
None: Standard
T : T switch function

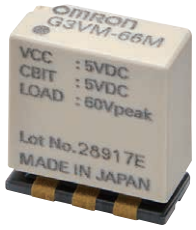
⑤ Others
When specifications overlap, a serial code (number) is added.

*Refer to the datasheet for details.

MOS FET Relay Module SPDT Contact Form Type

MOS FET Relay SPDT Module

OMRON's unique technology* has delivered a semiconductor relay module that enables easy construction of SPDT contact forms on boards where space is limited.



G3VM-26M10 (Low C_{OFF} model)
Ideal for high-frequency (≤ 300 MHz) signal changeover

G3VM-26M11 (Low R_{ON} model)
Supports high current (≤ 1 A) switching

G3VM-66M (General purpose model)
The output rating of 60 V at 0.4 A enables a wide variety of applications

Ideal replacement for contact relays*
*Reed relays, mechanical relays, etc.

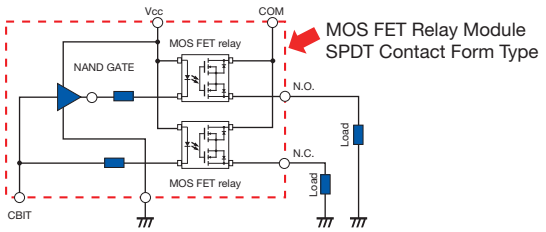
*According to OMRON's research in 2021

Feature 1 Reduced Workload

Problem Complex circuits and multiple components are required to configure SPDT contacts using semiconductor relays

Solution The workload for circuit design and component selection is reduced by using one single package

All of the complex circuits required to configure SPDT contacts are modularized, allowing efficient board design and high-density mounting.



MOS FET Relay Module SPDT Contact Form Type

SPDT Form Circuit

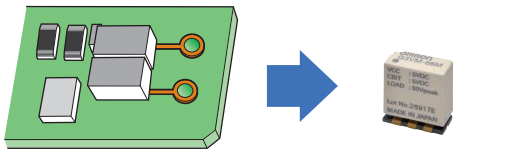
Feature 2 1/5 of Mounting Space

Problem Large boards are required to configure SPDT contacts using semiconductor relays

Solution The space-saving structure based on OMRON's unique package technology* reduces the mounting space

The mounting space is reduced by 78% compared to configuring SPDT circuits on boards.

*According to OMRON's research in 2021



When configured on a board
250 mm²*

Module mounting area
56 mm²

Feature 3 Long Life

Problem Regular maintenance is required for the contacts of existing SPDT contact relays (reed relays, mechanical relays, etc.) due to their limited service life

Solution The frequency of regular maintenance is reduced by using semiconductor relays to extend the service life of the contacts

No arc discharge thanks to the semiconductor-based contactless configuration.
No failures due to mechanical wear.

No physical contacts are used, eliminating failures due to mechanical wear

SPDT Module Product Lineup

SPDT module

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Rated input voltage (V)	Dielectric strength between I/O (Vrms)
20	G3VM-26M10	6	SPDT	200	4.4	2	1	0.3	0.3	5	500
20	G3VM-26M11	6	SPDT	1,000	0.21	2	40	2.5	1.5	5	500
60	G3VM-66M	6	SPDT	400	1	2	20	1	1	5	500

MOS FET Relay Module T-Module Type

OMRON has adopted a "T-shaped circuit structure" consisting of three MOS FET relays in a single package to ensure minimum current leakage, which helps improve measurement accuracy of semiconductor testing devices, etc.

G3VM-21MT (high isolation type)
G3VM-61MT (high current type)
G3VM-101MT (high voltage type)

Ideal replacement for contact relays*
*Reed relays, mechanical relays, etc.

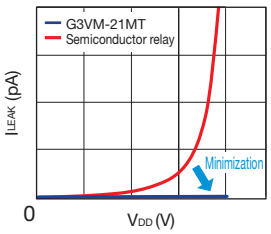
Feature 1 Improved Measurement Accuracy

Problem Current leakage in semiconductor relays causes deterioration of micro-current measurement accuracy

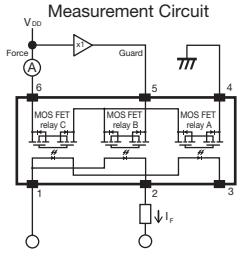
Solution The T-shaped circuit structure ensures leakage current of 1 pA or less, suitable for micro-current measurement

With an actual value of 0.1 pA or less, the impact on the accuracy of the measuring equipment is minimized.

Leakage Current I_{LEAK} vs Applied Voltage V_{DD}



G3VM-21MT Example of Measurement Circuit



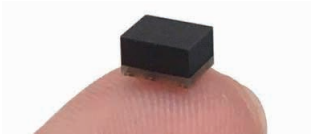
Feature 2 Space Saving

Problem Mechanical relays are large in size and occupy large board space

Solution Space savings are achieved with the subminiature outline dimensions

Its ultra small size contributes to high-density mounting, despite complex circuits in the equipment.

Subminiature Outline Dimensions
5 mm × 3.75 mm × 2.7 mm



Feature 3 Long Life

Problem Regular maintenance is required for the existing relays with contact (reed relays, mechanical relays, etc.) due to limited service life of the contact

Solution The frequency of regular maintenance is reduced by using semiconductor relays to extend the service life of the contacts

No arc discharge thanks to the semiconductor-based contactless configuration.
No failures due to mechanical wear.

No physical contacts are used,
eliminating failures due to mechanical wear

T-Module Product Lineup

T-module										
Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (pA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Dielectric strength between I/O (Vrms)
20	G3VM-21MT *NEW*	6	1a*	200	8	1	0.6	0.3	0.3	500
60	G3VM-61MT *NEW*	6	1a*	Io Main: 800 Io Sub : 400	0.4	1	38	2.5	0.5	500
100	G3VM-101MT *NEW*	6	1a*	550	0.8	1	23	2.5	0.5	500

*Refer to "●Operating mode" in the product datasheet for details

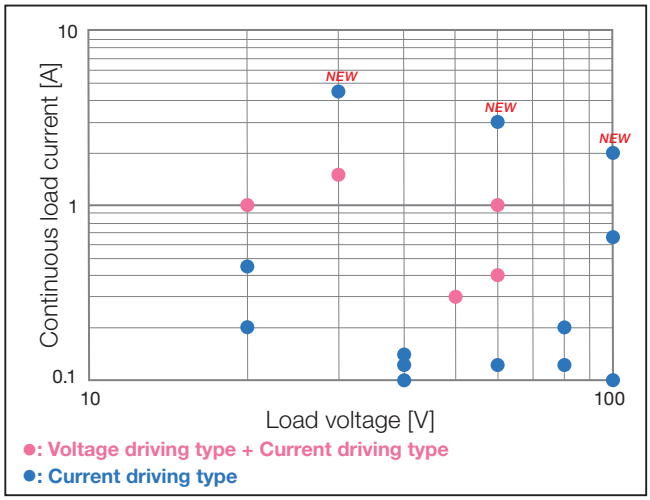
MOS FET Relay Product Selection

MOS FET Relay

Recommended for Semiconductor Inspection Devices

If the mounting area of DIP products is taken to be 100%

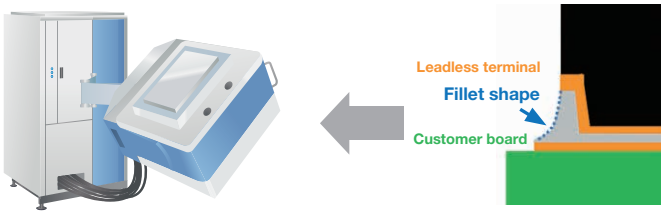
P-SON	VSON(R)	VSON	S-VSON
Mounting area 19%	Mounting area 10%	Mounting area 9%	Mounting area 8% *84% of VSON



We provide MOS FET relays that balance high-density mounting and performance

Easy-to-use 500 pcs/reel compact package size

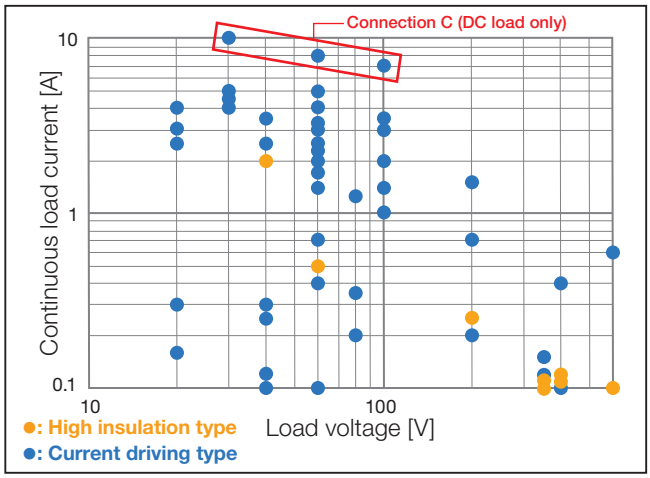
Wettable flank structure



The fillet shape ensures higher mounting strength and better solder visibility after mounting

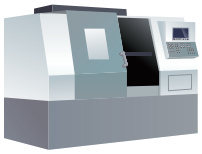
General Purpose (FA, OA, Alarm, Communication)

DIP	SOP	SSOP	USOP
Mounting area 100%	Mounting area 62%	Mounting area 24%	Mounting area 20%



We provide MOS FET relays suitable for FA equipment and a wide variety of applications

*A wide variety of UL certified products are available.

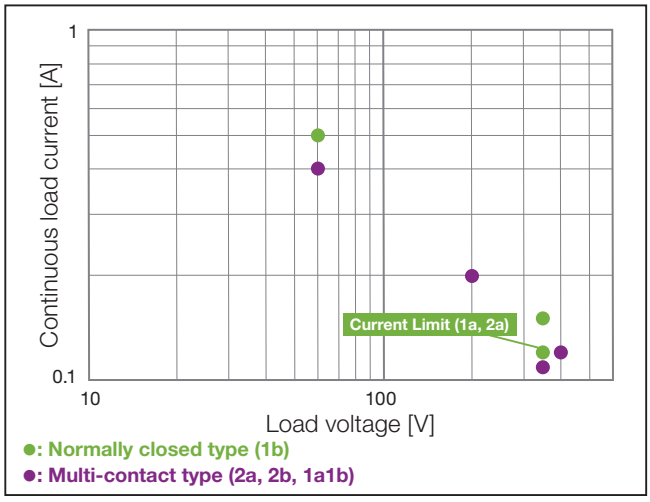


Industrial equipment

Detectors

OA equipment

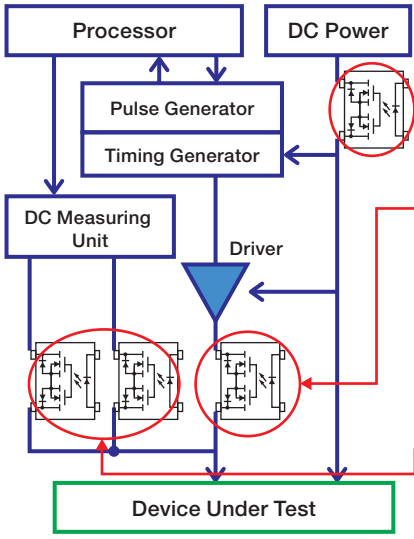
Control panels



Multi-contact type suitable for signal changeover 1b contact type contributing to reduced power consumption when N.O.

Circuit Examples

Semiconductor Inspection Device Circuit



Power supply changeover

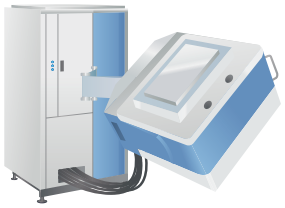
Required functions
High current switching
Low leakage current

Function test signal changeover

Required functions
Low Ron
Low leakage current
Miniature
DC test signal changeover

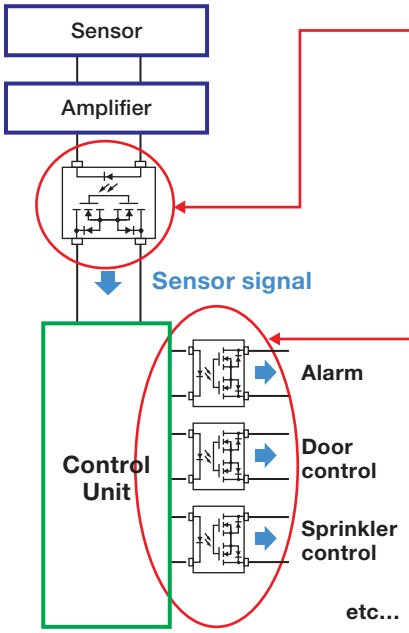
DC Measuring Switching

Required functions
Low Coff　Low leakage current
Miniature



● □ SON package series, etc.

Sensor Circuit



Signal transmission

Required functions
High sensitivity operations
Low power consumption
Normally closed contact form

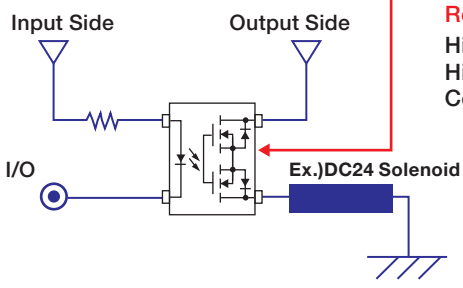
Output signal

Required functions
Normally closed contact form

● High sensitivity type
● Normally closed type (1b)

● Normally closed type (1b)

FA Equipment Circuit



Output signal

Required functions
High insulation
High current
Communication signal control

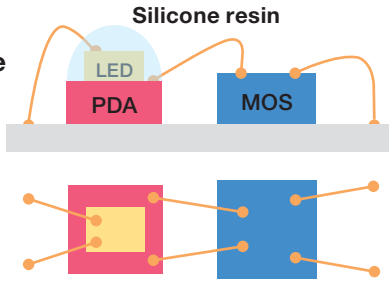
● High insulation type
● High capacity type
● General purpose type

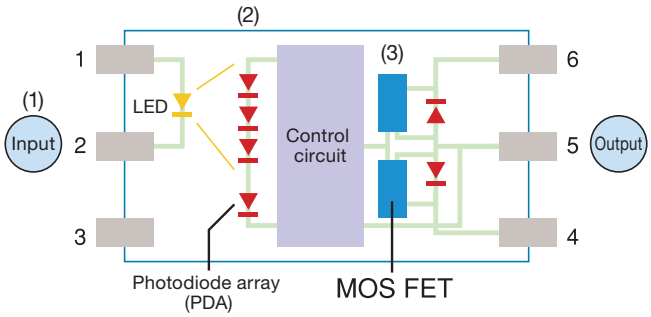
MOS FET Relay

MOS FET relays are optical semiconductor devices that use MOS FET for output elements, and are being increasingly used as a replacement for mechanical relays. OMRON semiconductor relays address problems facing the customers.

Example) VSON

Internal structure circuit diagram





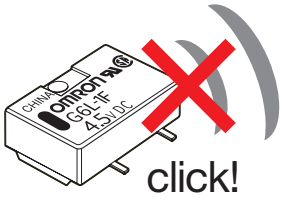
1. The LED lights up when the current flows to the input side.
2. The light sent by the LED will be converted into voltage when it is received by the PDA on the output side.
3. This voltage will be the gate voltage to drive the MOS FET.

Feature 1 Low Noise

Problem I want to get rid of the operating noises from existing mechanical relays

Solution The use of MOS FET relays without mechanical contacts helps ensure silent operation

In contrast with mechanical relays that generate contact noise during ON operations, MOS FET relays are free of mechanical contacts and built with semiconductors, thus eliminating contact noise.



Feature 2 Excellent Linearity Characteristics

Problem When I use phototransistors or phototriacs, the signals on the output side become distorted

Solution Use MOS FET relays to prevent distortion of output signals

As the elements on the output sides of phototransistors and phototriacs have low linearity, signals become distorted when passing between outputs. In contrast, MOS FET relays have excellent linearity characteristics, which help minimize such signal distortion.

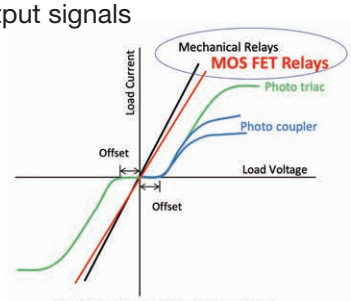


Fig.1 Load current vs Load voltage

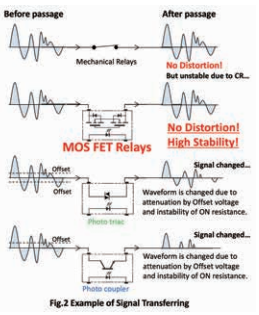


Fig.2 Example of Signal Transferring

Feature 3 Long Life

Problem Regular maintenance is required for the existing relays with contact (reed relays, mechanical relays, etc.) due to limited service life of the contact

Solution The frequency of regular maintenance is reduced by using semiconductor relays to extend the service life of the contacts

No arc discharge thanks to the semiconductor-based contactless configuration.
No failures due to mechanical wear.

No physical contacts are used,
eliminating failures due to mechanical wear

Introduction of the New "P-SON" Product

OMRON has released the P-SON series which are more compact than SOP4, but allow the flowing of even higher currents than SOP4.
OMRON delivers value to customers in two aspects: "Compactness" and "High Current."

Package	Model specification	Contact	Dielectric strength (V)	Current (A)
P-SON4	G3VM-31WR	1a	30	4.5
P-SON4	G3VM-61WR	1a	60	3
P-SON4	G3VM-101WR	1a	100	2

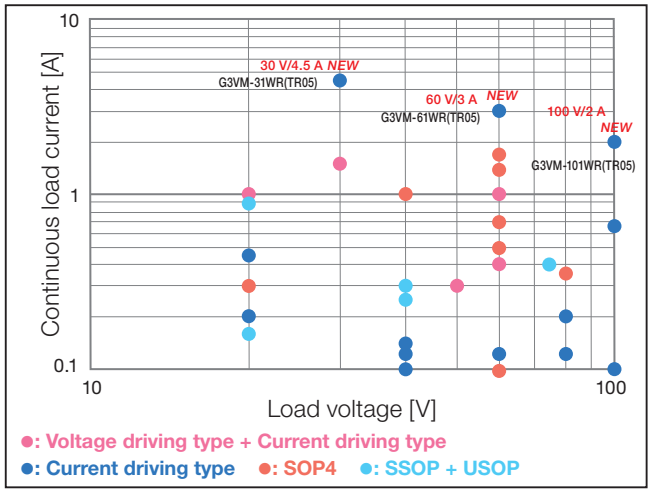
Mounting area reduced by roughly 75%!

27.3 mm²

SOP4

7.1 mm²

P-SON



Product Selection Guide

Contact Form

- 1a
- Non-1a → ● Multi-contact type (2a, 2b, 1a1b)
- Non-1a → ● Normally closed type (1b)

Dielectric Strength Between I/O

- Not Required
- 5 kVrms Required → ● High insulation type (I/O ≥ 5 kVrms)

Simplification of Control Circuits

- Not built-in
- Built-in LED control resistor → ● Voltage driving type

Low power consumption

- Not driven at low power
- Driven at low power → ● High sensitivity type

Style (Outline Dimensions)

- ● General purpose type
- ● High capacity & low ON-resistance type
- ● Current limiting type

Recommended Types

List of characteristics by package (at the end)

DIP	SOP	SSOP	USOP	P-SON	VSON(R)	VSON	S-VSON
Mounting area 100%	Mounting area 62%	Mounting area 24%	Mounting area 20%	Mounting area 19%	Mounting area 10%	Mounting area 9%	Mounting area 8% *84% of VSON

MOS FET Relay Recommended Lineup

Multi-Contact Type (2a, 2b, 1a1b) / Normally Closed Type (1b)

Multi-contact type and normally closed type MOS FET relays are available for use in a variety of different applications.

Multi-contact type

Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)
DIP8	G3VM-62C1/F1	2a	60	0.50
DIP8	G3VM-352C/F	2a	350	0.12
DIP8	G3VM-402C/F	2a	400	0.12
SOP8	G3VM-62J1	2a	60	0.40
SOP8	G3VM-202J1	2a	200	0.20
SOP8	G3VM-352J	2a	350	0.11
SOP8	G3VM-402J	2a	400	0.12
DIP8	G3VM-354C/F	2b	350	0.15
SOP8	G3VM-354J	2b	350	0.12
DIP8	G3VM-355CR/FR	1a1b	350	0.12
SOP8	G3VM-355JR	1a1b	350	0.12

Normally closed type

Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)
SOP4	G3VM-63G	1b	60	0.50
SOP4	G3VM-353G	1b	350	0.12
SOP6	G3VM-353H	1b	350	0.12
DIP4	G3VM-353A/D	1b	350	0.15
DIP6	G3VM-353B/E	1b	350	0.15

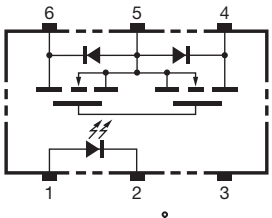
General Purpose Type

General purpose type for use in a variety of applications.
See here if you are uncertain about anything concerning analog signal switching.

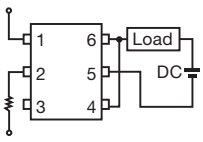
Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)
SOP4	G3VM-41GR8	1a	40	1
SOP4	G3VM-41GR5	1a	40	0.30
SOP4 (special)	G3VM-61VY2	1a	60	0.50
SOP4 (special)	G3VM-61VY3	1a	60	0.70
SOP4	G3VM-201G1	1a	200	0.20
SOP4 (special)	G3VM-351VY	1a	350	0.11
SOP4	G3VM-401G1	1a	400	0.10
SOP4 (special)	G3VM-401VY	1a	400	0.11
SOP4	G3VM-401G	1a	400	0.12

High Capacity & Low ON-resistance Type

Allows even higher current flow.
Helps reduce heat generation and loss in equipment.



Connection C



Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)*
DIP6	G3VM-31BR/ER	1a	30	5.0 (10)
DIP6	G3VM-61BR2/ER2	1a	60	4.0 (8)
DIP6	G3VM-101BR1/ER1	1a	100	3.5 (7)
SOP6	G3VM-31HR1	1a	30	4.5 (9)
SOP6	G3VM-61HR2	1a	60	4.0 (8)
SOP6	G3VM-101HR2	1a	100	3.0 (6)

*The value shown in ( ) is for connection C (DC load only)

Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)
DIP4	G3VM-31AR/DR	1a	30	4
DIP4	G3VM-61AR1/DR1	1a	60	3
DIP4	G3VM-101AR1/DR1	1a	100	2

MOS FET Relay Recommended Lineup

High Insulation Type (I/O ≥ 5 kVrms)

High-insulation type MOS FET relays for customers who require insulation between input and output

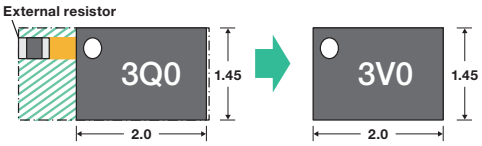
Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)	Dielectric strength between I/O (Vrms)
DIP4	G3VM-41AY1/DY1	1a	40	2	5,000
DIP4	G3VM-61AY1/DY1	1a	60	0.5	5,000
DIP4	G3VM-201AY1/DY1	1a	200	0.25	5,000
DIP4	G3VM-351AY1/DY1	1a	350	0.1	5,000
DIP4	G3VM-401AY1/DY1	1a	400	0.12	5,000
DIP4	G3VM-601AY1/DY1	1a	600	0.09	5,000

Voltage-Driving Type

Voltage driving type MOS FET relays that eliminate the need to select resistance on the input side, targeted for customers who require miniature size

S-VSON (existing)
Use with input current limiting resistor
Mounting area 2.90 mm² + resistor area

S-VSON(L) voltage driven
Built-in input current limiting resistor
Mounting area 2.90 mm²



Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)	Operating input voltage (V)
VSON(R)4	G3VM-21UV11	1a	20	1.0	≤ 5.0
VSON(R)4	G3VM-51UV	1a	50	0.3	≤ 5.0
VSON(R)4	G3VM-61UV	1a	60	0.4	≤ 5.0
S-VSON(L)4	G3VM-31QVH	1a	30	1.5	≤ 5.0
S-VSON(L)4	G3VM-31QVL	1a	30	1.5	≤ 2.5
S-VSON(L)4	G3VM-61QVH	1a	60	0.4	≤ 5.0
S-VSON(L)4	G3VM-61QV2H	1a	60	1.0	≤ 5.0
S-VSON(L)4	G3VM-61QV2L	1a	60	1.0	≤ 2.5

High Sensitivity Type

High sensitivity type MOS FET relays with reduced input current required for ON operations

Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)	Trigger LED forward current (max.) (mA)	Recommended operating LED forward current (typical) (mA)
SOP4	G3VM-61G2	1a	60	0.40	1	2
SOP4	G3VM-61G3	1a	60	0.40	0.2	0.5
SOP4	G3VM-201G1	1a	200	0.20	1	2
SOP4	G3VM-201G2	1a	200	0.20	0.2	0.5
SOP4	G3VM-351G1	1a	350	0.10	1	2
SOP4	G3VM-401G1	1a	400	0.10	0.2	0.5
SOP4	G3VM-601G	1a	600	0.09	1	2
SOP4	G3VM-601G1	1a	600	0.07	0.2	0.5

Current Limiting Type

MOS FET relays equipped with overcurrent protection function

Package	Model specification	Contact	Load voltage (V)	Continuous load current (A)	Limit current (mA)
DIP4	G3VM-2L/2FL	1a	350	0.12	150 to 300
DIP8	G3VM-WL/WFL	2a	350	0.12	150 to 300

MOS FET Relay Product Lineup INDEX

Please refer to our web site or individual catalogs for more information such as measurement conditions

DIP (Dual Inline Package)

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Dielectric strength between I/O (Vrms)	
20	G3VM-21AR/DR	4	1a	3,000	0.04	1,000	300	5.0	1.0	2,500	
20	G3VM-21BR/ER	6	1a	4,000 (8,000) *1	0.02	1,000	1,000	5.0	1.0	2,500	
30	G3VM-31AR/DR	4	1a	4,000	0.025	1,000	450	3.0	1.0	2,500	★
30	G3VM-31BR/ER	6	1a	5,000 (10,000) *1	0.02	1,000	1,100	5.0	0.5	2,500	★
40	G3VM-41AY1/DY1	4	1a	2,000	0.09	1,000	300	5.0	1.0	5,000	
40	G3VM-41AR/DR	4	1a	2,500	0.05	1,000	300	5.0	1.0	2,500	
40	G3VM-41BR/ER	6	1a	3,500 (7,000) *1	0.03	1,000	1,000	5.0	1.0	2,500	
60	G3VM-61AY1/DY1	4	1a	500	0.6	1,000	130	3.0	1.0	5,000	
60	G3VM-61AR/DR	4	1a	2,000	0.08	1,000	250	5.0	1.0	2,500	
60	G3VM-61AR1/DR1	4	1a	3,000	0.045	1,000	250	2.0	1.0	2,500	★
60	G3VM-61B1/E1	6	1a	500 (1,000) *1	1	1,000	130	2.0	0.5	2,500	
60	G3VM-61BR/ER	6	1a	2,500	0.065	10	400	3	0.6	2,500	○
60	G3VM-61BR1/ER1	6	1a	3,000 (6,000) *1	0.04	1,000	1,000	5.0	1.0	2,500	
60	G3VM-61BR2/ER2	6	1a	4,000 (8,000) *1	0.035	1,000	640	5.0	0.5	2,500	★
60	G3VM-61CR1/FR1	8	1a	5,000 (10,000) *1	0.022	10,000	850	5.0	1.0	2,500	
60	G3VM-62C1/F1	8	2a	500	1	1,000	130	2.0	0.5	2,500	
100	G3VM-101AR/DR	4	1a	1,000	0.25	1,000	200	5.0	1.0	2,500	
100	G3VM-101AR1/DR1	4	1a	2,000	0.11	1,000	110	2.0	0.5	2,500	★
100	G3VM-101BR/ER	6	1a	2,000 (4,000) *1	0.1	1,000	1,000	5.0	1.0	2,500	
100	G3VM-101BR1/ER1	6	1a	3,500 (7,000) *1	0.05	1,000	450	5.0	0.5	2,500	★
100	G3VM-101CR/FR	8	1a	3,000 (6,000) *1	0.06	1,000	720	5.0	1.0	2,500	
200	G3VM-201AY1/DY1	4	1a	250	5	1,000	90	3.0	1.0	5,000	
200	G3VM-201AR/DR	4	1a	700	0.9	1,000	110	1.0	0.5	2,500	★
200	G3VM-201CR/FR	8	1a	1,500 (3,000) *1	0.25	1,000	400	5.0	1.0	2,500	
350	G3VM-351AY1/DY1	4	1a	100	35	1,000	30	2.0	1.0	5,000	
350	G3VM-2L/2FL	4	1a	120 *2	22	1,000	40	1.0	1.0	2,500	
350	G3VM-351A/D	4	1a	120	35	1,000	30	1.0	1.0	2,500	
350	G3VM-353A/D	4	1b	150	15	1,000	85	1.0	3.0	2,500	
350	G3VM-351B/E	6	1a	120 (240) *1	35	1,000	30	1.0	1.0	2,500	
350	G3VM-353B/E	6	1b	150 (300) *1	15	1,000	85	1.0	3.0	2,500	
350	G3VM-355CR/FR	8	1a1b	120	15	1,000	65	1.0	3.0	2,500	
350	G3VM-352C/F	8	2a	120	35	1,000	30	1.0	1.0	2,500	
350	G3VM-WL/WFL	8	2a	120 *2	22	1,000	40	1.0	1.0	2,500	
350	G3VM-354C/F	8	2b	150	15	1,000	85	1.0	3.0	2,500	
400	G3VM-401A/D	4	1a	120	18	1,000	40	1.0	1.0	2,500	
400	G3VM-401AY1/DY1	4	1a	120	22	1,000	80	2.0	1.0	5,000	
400	G3VM-401B/E	6	1a	120 (240) *1	17	1,000	40	1.0	1.0	2,500	
400	G3VM-401BY/EY	6	1a	120 (240) *1	17	1,000	40	1.0	1.0	5,000	
400	G3VM-401CR/FR	8	1a	400 (800) *1	3	1,000	410	1.0	1.0	2,500	
400	G3VM-402C/F	8	2a	120	18	1,000	40	1.0	1.0	2,500	
600	G3VM-601AY1/DY1	4	1a	90	45	1,000	75	2.0	1.0	5,000	
600	G3VM-601BY/EY	6	1a	100 (200) *1	30	1,000	120	1.5	1.0	5,000	
600	G3VM-601CR/FR	8	1a	600 (1,200) *1	1.3	10,000	4,300	3.0	1.0	2,500	

*1. The value shown in ( ) is for connection C (DC load only) *2. With current limiting function (limit current: 150 mA to 300 mA)

Note: Ambient operating temperature: ★: -40 to +110°C, ◆: -40 to +105°C, ○: -20 to +85°C, Others: -40 to +85°C

MOS FET Relay Product Lineup INDEX

Please refer to our web site or individual catalogs for more information such as measurement conditions

SOP (Small Outline Package)

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Dielectric strength between I/O (Vrms)	
20	G3VM-21GR	4	1a	160	5	1	1	0.5	0.5	1,500	○
20	G3VM-21GR1	4	1a	300	1	1	5	0.5	0.5	1,500	○
20	G3VM-21HR	6	1a	2,500 (5,000) *1	0.02	10	1,000	5.0	1.0	1,500	
30	G3VM-31HR	6	1a	4,000 (8,000) *1	0.02	1,000	1,100	5.0	1.0	1,500	
30	G3VM-31HR1	6	1a	4,500 (9,000) *1	0.022	1,000	1,200	2.0	0.5	1,500	★
40	G3VM-41GR6	4	1a	120	10	1	1	0.5	0.5	1,500	○
40	G3VM-41GR4	4	1a	250	2	1	5	0.5	0.5	1,500	○
40	G3VM-41GR5	4	1a	300	1	1	10	0.5	0.5	1,500	
40	G3VM-41GR8	4	1a	1000	0.1	1	300	3.0	0.5	1,500	
40	G3VM-41HR	6	1a	2,500 (5,000) *1	0.03	10	1,000	5.0	1.0	1,500	
60	G3VM-61VY1 *3	4	1a	100	25	1,000	10	5.0	5.0	3,750	
60	G3VM-61G2	4	1a	400	1	1,000	130	8.0	3.0	1,500	
60	G3VM-61G3	4	1a	400	1	1,000	130	10.0	5.0	1,500	
60	G3VM-61VY2 *3	4	1a	500	1	1,000	20	2.0	0.5	3,750	★
60	G3VM-61VY3 *3	4	1a	700	0.15	1,000	100	3.0	0.5	3,750	★
60	G3VM-61GR2	4	1a	1,700	0.08	10	250	3.0	0.5	1,500	
60	G3VM-61VR *3	4	1a	1,400	0.13	1,000	100	3.0	1.0	3,750	★
60	G3VM-63G	4	1b	500	1	1,000	100	1.0	3.0	1,500	★
60	G3VM-61H1	6	1a	400 (800) *1	1	1,000	130	2.0	0.5	1,500	
60	G3VM-61HR	6	1a	2,300 (4,600) *1	0.04	10	1,000	5.0	1.0	1,500	
60	G3VM-61HR1	6	1a	3,300 (6,600) *1	0.03	20	700	5.0	1.0	1,500	
60	G3VM-61HR2	6	1a	4,000 (8,000) *1	0.028	1,000	750	2.0	0.5	1,500	★
60	G3VM-62J1	8	2a	400	1	1,000	130	2.0	0.5	1,500	
80	G3VM-81GR	4	1a	40	16	1	2.5	0.5	0.5	1,500	○
80	G3VM-81GR1	4	1a	200	5	1	6.5	0.5	0.5	1,500	○
80	G3VM-81G1	4	1a	350	1	1	30	0.5	0.5	1,500	○
80	G3VM-81HR	6	1a	1,250 (2,500) *1	0.11	1.5	460	3.0	1.0	1,500	○
100	G3VM-101HR	6	1a	1,400 (2,800) *1	0.1	10	1,000	5.0	1.0	1,500	
100	G3VM-101HR1	6	1a	2,000 (4,000) *1	0.045	1,000	500	5.0	1.0	1,500	
100	G3VM-101HR2	6	1a	3,000 (6,000) *1	0.05	1,000	460	2.0	0.5	1,500	★
200	G3VM-201G	4	1a	50	40	1	15	0.5	0.2	1,500	
200	G3VM-201G1	4	1a	200	5	1,000	90	8.0	3.0	1,500	
200	G3VM-201G2	4	1a	200	5	1,000	90	10.0	5.0	1,500	
200	G3VM-S5	4	1a	200	5	1,000	100	1.5	1.0	1,500	
200	G3VM-201H1	6	1a	200 (400) *1	5	1,000	100	1.5	1.0	1,500	
200	G3VM-202J1	8	2a	200	5	1,000	100	1.5	1.0	1,500	
350	G3VM-351G1	4	1a	100	35	1,000	35	5.0	3.0	1,500	
350	G3VM-351VY *3	4	1a	110	35	1,000	30	1.0	0.5	3,750	★
350	G3VM-351GL	4	1a	120 *2	15	1,000	70	1.0	1.0	1,500	
350	G3VM-353G	4	1b	120	15	1,000	65	1.0	3.0	1,500	
350	G3VM-351H	6	1a	110 (220) *1	35	1,000	30	1.0	1.0	1,500	
350	G3VM-353H	6	1b	120 (240) *1	15	1,000	65	1.0	3.0	1,500	
350	G3VM-355JR	8	1a1b	120	15	1,000	65	1.0	3.0	1,500	
350	G3VM-352J	8	2a	110	35	1,000	30	1.0	1.0	1,500	
350	G3VM-354J	8	2b	120	15	1,000	65	1.0	3.0	1,500	
400	G3VM-401G1	4	1a	100	18	1,000	70	10.0	5.0	1,500	
400	G3VM-401G	4	1a	120	17	1,000	70	1.0	1.0	1,500	
400	G3VM-401VY *3	4	1a	110	40	1,000	30	1.0	0.5	3,750	★
400	G3VM-401H	6	1a	120 (240) *1	17	1,000	70	1.0	1.0	1,500	
400	G3VM-402J	8	2a	120	17	1,000	70	1.0	1.0	1,500	
600	G3VM-601G1	4	1a	70	35	1,000	75	10.0	5.0	1,500	
600	G3VM-601G	4	1a	90	45	1,000	75	8.0	3.0	1,500	

*1. The value shown in ( ) is for connection C (DC load only)
*2. With current limiting function (limit current: 150 mA to 300 mA)
*3. VY1, VY2, VY3 and VR types: SOP 4-pin (special) package
Note: Ambient operating temperature: ★: -40 to +110°C, ◆: -40 to +105°C, ○: -20 to +85°C, Others: -40 to +85°C

MOS FET Relay Product Lineup INDEX

Please refer to our web site or individual catalogs for more information such as measurement conditions

SSOP (Shrink Small Outline Package)

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Dielectric strength between I/O (Vrms)
20	G3VM-21LR	4	1a	160	5	1	1	0.5	0.5	1,500
20	G3VM-21LR10	4	1a	200	3	0.2	0.8	0.2	0.2	1,500
20	G3VM-21LR1	4	1a	450	0.8	1	5	0.5	0.5	1,500
20	G3VM-21LR11	4	1a	900	0.18	1	40	2.0	1.0	1,500
40	G3VM-41LR6	4	1a	120	10	1	1	0.5	0.5	1,500
40	G3VM-41LR10	4	1a	120	12	0.2	0.45	0.2	0.3	1,500
40	G3VM-41LR11	4	1a	140	7	0.2	0.7	0.2	0.2	1,500
40	G3VM-41LR4	4	1a	250	2	1	5	0.5	0.5	1,500
40	G3VM-41LR5	4	1a	300	1	1	10	0.5	0.5	1,500
60	G3VM-61LR	4	1a	400	1	1,000	20	1.0	1.0	1,500
80	G3VM-81LR	4	1a	120	7.5	0.2	5	0.25	0.2	1,500
100	G3VM-101LR	4	1a	80	8	0.2	6	0.3	0.3	1,500

Note: Ambient operating temperature: -20 to +85°C

P-SON (Power Small Outline Non-leaded)

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)*	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Dielectric strength between I/O (Vrms)
30	G3VM-31WR	4	1a	4,500	0.025	10	450	5	1	500
60	G3VM-61WR	4	1a	3,000	0.045	10	250	5	1	500
100	G3VM-101WR	4	1a	2,000	0.13	10	170	3	1	500
200	G3VM-201WR	4	1a	350	4.5	10	75	1	1	500

*Refer to the catalog for measurement conditions

USOP (Ultra Small Outline Package)

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Dielectric strength between I/O (Vrms)
20	G3VM-21PR10	4	1a	200	3	1	0.8	0.2	0.2	500
20	G3VM-21PR1	4	1a	450	0.6	1	5	0.5	0.5	500
20	G3VM-21PR11	4	1a	900	0.18	1	40	2.0	1.0	500
40	G3VM-41PR12	4	1a	100	15	1	0.3	0.2	0.2	500
40	G3VM-41PR10	4	1a	120	12	1	0.45	0.2	0.3	500
40	G3VM-41PR6	4	1a	120	10	0.2	1	0.2	0.3	500
40	G3VM-41PR11	4	1a	140	7	1	0.7	0.2	0.2	500
40	G3VM-41PR5	4	1a	300	1	1	10	0.5	0.3	500
50	G3VM-51PR	4	1a	300	1	1	12	0.5	0.4	500
60	G3VM-61PR1	4	1a	120	10	1	0.7	0.2	0.2	500
60	G3VM-61PR	4	1a	400	1	1	20	0.5	0.5	500
75	G3VM-71PR	4	1a	400	1	1	30	2.0	1.0	500
80	G3VM-81PR	4	1a	120	7	0.02	5	0.5	0.2	500
100	G3VM-101PR	4	1a	100	8	0.2	6	0.3	0.3	500

Note: Ambient operating temperature: -40 to +85°C

VSON(R) (Very Small Outline Package Non-leaded with Resistance) Voltage Driving Type

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Recommended operating input Forward voltage (standard) (V)	Dielectric strength between I/O (Vrms)
20	G3VM-21UV11	4	1a	1,000	0.18	1	40	2.0	1.0	5	500
50	G3VM-51UV	4	1a	300	1	1	12	0.5	0.4	5	500
60	G3VM-61UV	4	1a	400	1	1	20	0.5	0.5	5	500

Note: Ambient operating temperature: -40 to +110°C

VSON (Very Small Outline Package Non-leaded)

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Dielectric strength between I/O (Vrms)
20	G3VM-21UR10	4	1a	200	3	1	0.8	0.2	0.2	500
20	G3VM-21UR1	4	1a	450	0.8	1	5	0.4	0.4	500
20	G3VM-21UR11	4	1a	1,000	0.18	1	40	2.0	1.0	500
40	G3VM-41UR12	4	1a	100	15	1	0.3	0.2	0.2	500
40	G3VM-41UR10	4	1a	120	12	1	0.45	0.2	0.3	500
40	G3VM-41UR11	4	1a	140	5	1	0.7	0.2	0.2	500
50	G3VM-51UR	4	1a	300	1	1	12	0.5	0.4	500
60	G3VM-61UR1	4	1a	120	10	1	0.7	0.2	0.2	500
60	G3VM-61UR	4	1a	400	1	1	20	0.5	0.5	500
80	G3VM-81UR	4	1a	120	7	0.02	5	0.5	0.2	500
80	G3VM-81UR1	4	1a	200	6	1	6.5	0.4	0.4	500
100	G3VM-101UR	4	1a	100	8	0.2	6	0.3	0.3	500

Note: Ambient operating temperature: -40 to +110°C

S-VSON (Super - Very Small Outline Package Non-leaded)

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Dielectric strength between I/O (Vrms)
30	G3VM-31QR	4	1a	1,500	0.1	1	120	2.0	1.0	500
40	G3VM-41QR10 *	4	1a	120	11	1	0.45	0.2	0.3	500
60	G3VM-61QR	4	1a	400	1.1	1	12	0.5	0.3	500
60	G3VM-61QR2	4	1a	1,000	0.2	1	80	2.0	0.3	500
100	G3VM-101QR1	4	1a	650	0.4	1	50	2.0	0.3	500

*The 41QR10 type features a S-VSON(L) low-profile package

Note: Ambient operating temperature: -40 to +110°C

S-VSON (Super - Very Small Outline Package Non-leaded) Voltage Driving Type

Load voltage (max.) (V)	Model	Number of terminals	Contact form	Continuous load current (max.) (mA)	Maximum resistance with output ON (typical) (Ω)	Current leakage when relay is open (max.) (nA)	Capacitance between terminals (typical) (pF)	Turn-ON time (max.) (ms)	Turn-OFF time (max.) (ms)	Recommended operating input Forward voltage (standard) (V)	Dielectric strength between I/O (Vrms)
30	G3VM-31QVH	4	1a	1,500	0.1	1	120	2	0.2	5	500
30	G3VM-31QVL	4	1a	1,500	0.1	1	120	2	0.2	2.5	500
60	G3VM-61QV2H	4	1a	1,000	0.2	1	80	2	0.2	5	500
60	G3VM-61QV2L	4	1a	1,000	0.2	1	80	1	0.2	2.5	500
60	G3VM-61QVH	4	1a	400	1	1	20 (max.)	0.5	0.2	5	500

*S-VSON(L) low-profile package

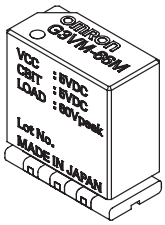
Note: Ambient operating temperature: -40 to +110°C

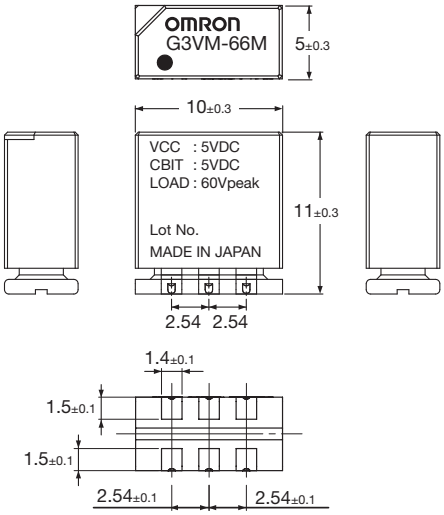
MOS FET Relay Module Package Outline Dimensions / Appearance Example (Unit: mm)

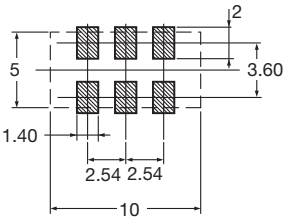
SPDT Module

Surface-mount terminal

Weight: 1 g



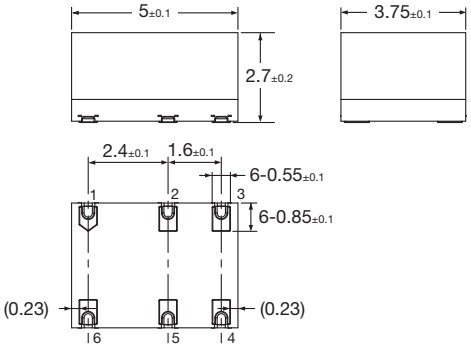




T-Module

Surface-mount terminal

Weight: 0.11 g

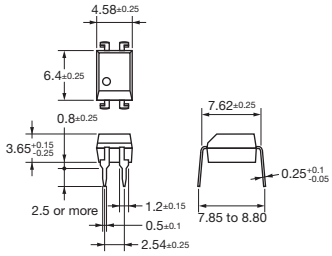


MOS FET Relay Package Outline Dimensions / Appearance Example (Unit: mm)

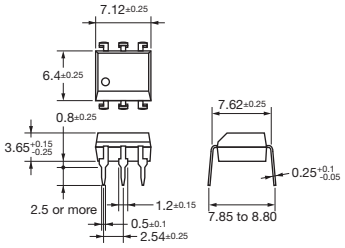
DIP (Dual Inline Package)

PCB terminal

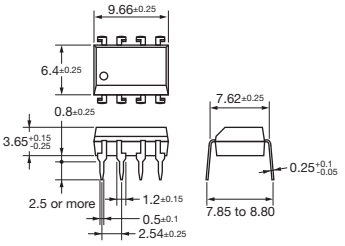
■DIP4-pin Weight: 0.25 g



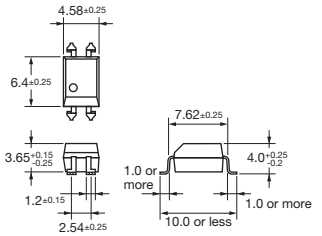
■DIP6-pin Weight: 0.4 g



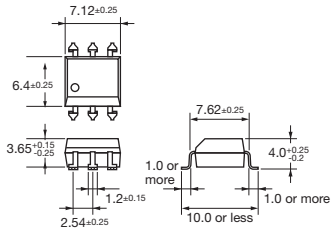
■DIP8-pin Weight: 0.54 g

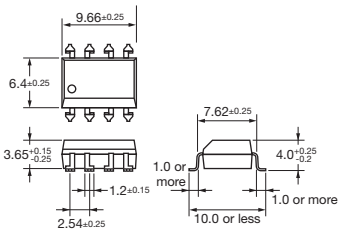


Surface-mount terminal



(Except G3VM-61BR/ER)

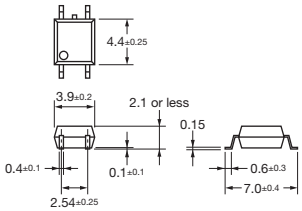




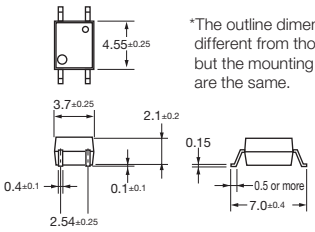
SOP (Small Outline Package)

Surface-mount terminal

■SOP4-pin Weight: 0.1 g

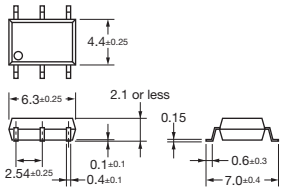


■SOP4-pin (special) Weight: 0.1 g

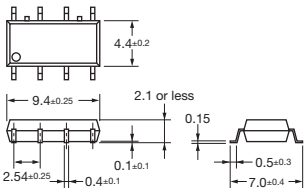


*The outline dimensions are different from those of SOP4, but the mounting pad dimensions are the same.

■SOP6-pin Weight: 0.13 g



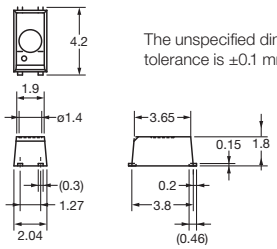
■SOP8-pin Weight: 0.2 g



SSOP (Shrink Small Outline Package)

Surface-mount terminal

■SSOP4-pin Weight: 0.03 g

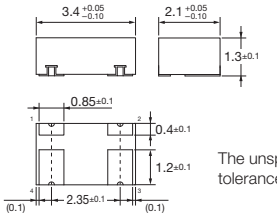


The unspecified dimension tolerance is ±0.1 mm.

P-SON (Power Small Outline Non-leaded)

Surface-mount terminal

■P-SON4-pin Weight: 0.02 g

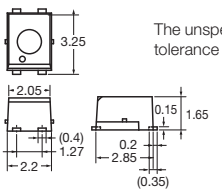


The unspecified dimension tolerance is ±0.1 mm.

USOP (Ultra Small Outline Package)

Surface-mount terminal

■USOP4-pin Weight: 0.03 g

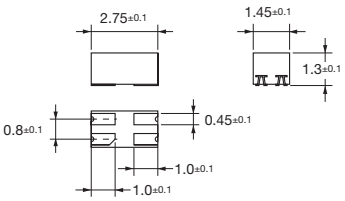


The unspecified dimension tolerance is ±0.2 mm.

VSON(R) (Very Small Outline Non-Leaded with Resistor)

Surface-mount terminal

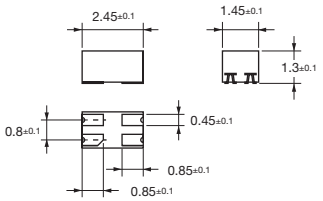
■VSON(R)4-pin Weight: 0.01 g



VSON (Very Small Outline Non-leaded)

Surface-mount terminal

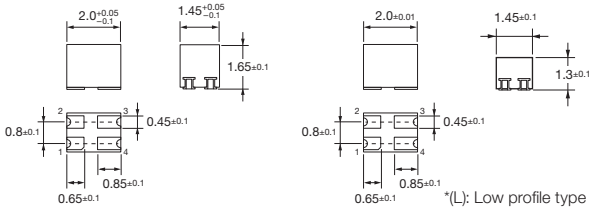
■VSON4-pin Weight: 0.01 g



S-VSON (Super Very Small Outline Non-leaded)

Surface-mount terminal

■S-VSON4-pin Weight: 0.01 g ■S-VSON(L)* 4-pin Weight: 0.01 g



*(L): Low profile type

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