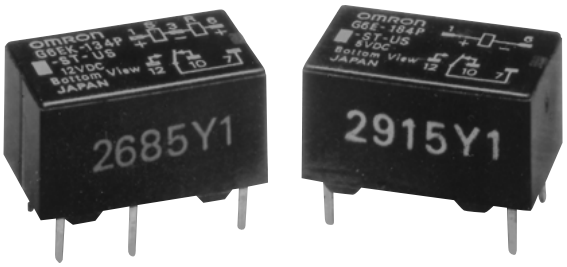
OMRON

Low Signal Relay

G6E

- Subminiature 7.87 H x 9.91 W x 16 L mm (0.31 H x 0.39 W x 0.63 L in)
- High sensitivity with pick-up coil power of 98 mW
- Surge withstand voltage meets FCC Part 68 rule and Bellcore 2.5 kV
- Packaged for automatic insertion
- Unique moving loop armature reduces relay size, magnetic interference, and contact bounce time
- Bifurcated crossbar contact assures high reliability
- Minimal loss of latching capability due to highly efficient magnetic circuit; also, highly resistant to shock and vibration
- Sealed construction allows automatic solder and cleaning; assures high reliability even in adverse environments
- Terminal arrangement fits international standard 100-mil grid



Ordering Information

To Order: Select the part number and add the desired coil voltage rating, (e.g., G6E-134P-ST-US-*DC6*).

■ NON-LATCHING

Type	Contact form	Part number	
		Standard	Low sensitivity
PCB	SPDT	**G6E-134P-ST-US**	**G6E-134PL-ST-US**

■ LATCHING

Type	Contact form	Part number			
		Single coil latching		Dual coil latching	
		Standard	Low sensitivity	Standard	Low sensitivity
PCB	SPDT	**G6EU-134P-ST-US**	**—**	**G6EK-134P-ST-US**	**G6EK-134PL-ST-US**

Specifications

■ CONTACT DATA

Load	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)
Rated load	0.40 A at 125 VAC, 2 A at 30 VDC	0.20 A at 125 VAC, 1 A at 30 VDC
Contact material	Ag (Au clad)	
Carry current	3 A	
Max. operating voltage	250 VAC, 220 VDC	
Max. operating current	3 A (AC), 3 A (DC)	1.50 A (AC), 1.50 A (DC)
Max. switching capacity	50 VA, 60 W	25 VA, 30 W
Min. permissible load	10 μA, 10 mVDC	

■ COIL DATA

Standard non-latching (G6E-134P-ST-US)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON	% of rated voltage			
3	66.70	45	0.08	0.06	70% max.	10% min.	190% max. at 23°C (73°F) 115% max. at 70°C (158°F)	Approx. 200
5	40	125	0.18	0.17				
6	33.30	180	0.31	0.24				
9	22.20	405	0.62	0.50				
12	16.70	720	1.20	0.99				
24	8.30	2,880	4.70	3.90				
48	8.30	5,760	5.35	5.12				Approx. 400

Low-sensitivity non-latching type (G6E-134PL-ST-US)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON	% of rated voltage			
3	133	22.50	0.03	0.03	70% max.	10% min.	190% max. at 23°C (73°F) 115% max. at 70°C (158°F)	Approx. 400
5	79.40	63	0.08	0.07				
6	66.60	90	0.12	0.10				
9	44.30	203	0.21	0.19				
12	33.30	260	0.45	0.42				
24	16.70	1,440	1.77	1.65				

Standard single coil latching type (G6EU-134P-ST-US)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON	% of rated voltage			
3	66.70	4.50	0.05	0.04	70% max.	70% min.	190% max. at 23°C (73°F) 130% max. at 70°C (158°F)	Approx. 200
5	40	125	0.13	0.12				
6	33.30	180	0.19	0.17				
9	22.20	405	0.45	0.40				
12	16.70	720	0.84	0.79				
24	8.30	2,880	3.56	3.10				

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of ±10%.
2. The operating characteristics are measured at a coil temperature of 23°C (73°F).

■ COIL DATA (continued)

Standard dual coil latching type (G6EK-134P-ST-US)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON	% of rated voltage			
3	66.70	45	0.03	0.03	70% max.	70% min.	190% max. at 23°C (73°F) 130% max. at 70°C (158°F)	Approx. 200
5	40	125	0.09	0.08				
6	33.30	180	0.12	0.11				
7	22.20	405	0.25	0.22				
12	16.70	720	0.44	0.41				
24	8.30	2,880	1.66	1.62				

Low-sensitivity dual coil latching type (G6EK-134PL-ST-US)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON	% of rated voltage			
3	133	22.50	0.02	0.01	70% max.	70% min.	170% max. at 23°C (73°F) 115% max. at 70°C (158°F)	Approx. 400
5	79.40	63	0.04	0.03				
6	66.60	90	0.06	0.04				
9	44.30	203	0.12	0.09				
12	33.30	360	0.21	0.15				
24	16.70	1,440	0.80	0.58				

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of ±10%.
2. The operating characteristics are measured at a coil temperature of 23°C (73°F).

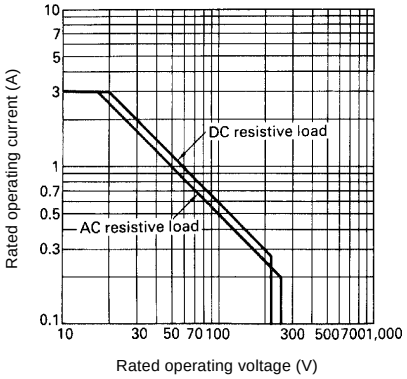
■ CHARACTERISTICS

Contact resistance		50 mΩ max.
Operate (set) time		5 ms max. (mean value approx. 2.90 ms, 48 VDC type, approx. 2.40 ms)
Release (reset) time		5 ms max. (mean value approx. 1.30 ms)
Bounce time	Operate	Approx. 3 ms (mean value 0.37 ms)
	Release	Approx. 3 ms (mean value 1.12 ms)
Operating frequency	Mechanical	36,000 operations/hour
	Electrical	1,800 operations/hour (under rated load)
Insulation resistance		1,000 MΩ min. (at 500 VDC)
Dielectric strength		1,500 VAC, 50/60 Hz for 1 minute between coil and contacts
		1,000 VAC, 50/60 Hz for 1 minute between contacts of same pole
Surge withstand voltage		1,500 V 10 x 160 μs (conforms to part 68 of FCC Rules)
		2,500 V 2 x 10 μs (Bellcore Requirement)
Vibration	Mechanical durability	10 to 55 Hz; 5 mm (0.20 in) double amplitude
	Malfunction durability	10 to 55 Hz; 3.3 mm (0.13 in) double amplitude
Shock	Mechanical durability	1,000 m/s^2 (approx. 100 G)
	Malfunction durability	300 m/s^2 (approx. 30 G)
Ambient temperature		-40 to 70°C (-40° to 158°F)
Humidity		45% to 85% RH
Service life	Mechanical	1 million operations min. (at 36,000 operations/hour)
	Electrical	See “Characteristic Data”
Weight		Approx. 2.7 g (0.10 oz)

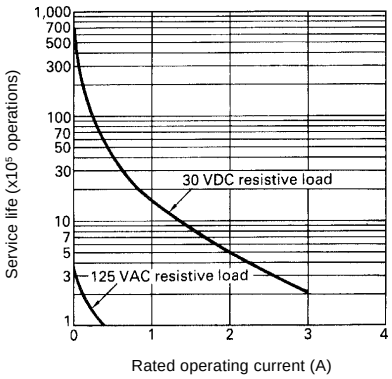
Note: Data shown are of initial value.

■ CHARACTERISTIC DATA

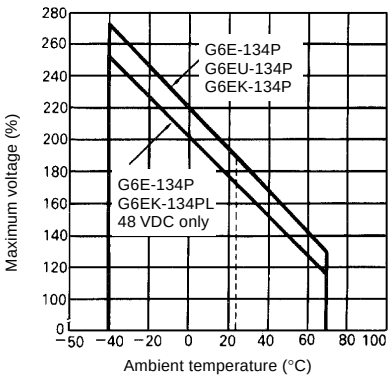
Maximum switching capacity



Electrical service life



Ambient temperature vs. maximum voltage (reference only)

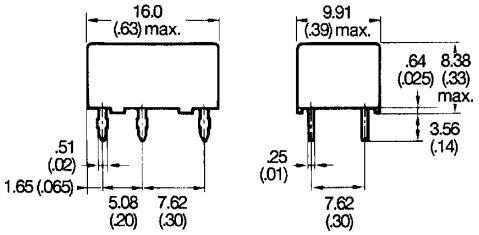


Dimensions

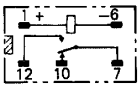
Unit: mm (inch)

■ NON-LATCHING

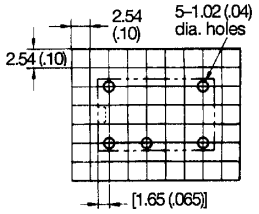
G6E-134P-ST-US, G6E-134PL-ST-US



Terminal arrangement/ Internal connections
(Bottom view)

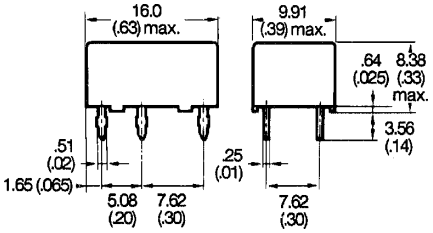


Mounting holes
[Bottom view, tolerance: ±.10 (0.004)]

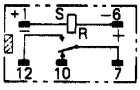


■ LATCHING

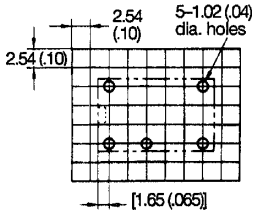
G6EU-134P-ST-US



Terminal arrangement/ Internal connections
(Bottom view)

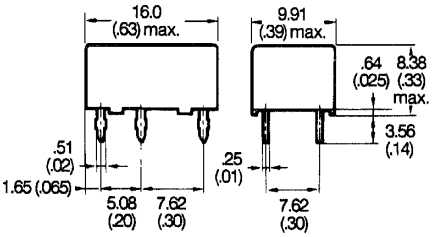


Mounting holes
(Bottom view)

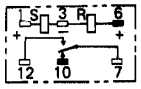


Note: 1. ▨ and [ ] indicate mounting orientation marks.
2. Pay attention to the polarity of the coil.

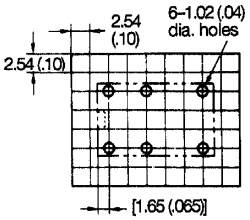
G6EK-134P-ST-US, G6EK-134PL-ST-US



Terminal arrangement/ Internal connections
(Bottom view)



Mounting holes
(Bottom view)



Note: 1. ▨ and [ ] indicate mounting orientation marks.
2. Pay attention to the polarity of the coil.

■ APPROVALS

UL (File No. E41515)/CSA (File No. LR31928)

Type	Contact form	Coil ratings	Contact ratings
G6E-134P-ST-US	SPDT	1.5 to 48 VDC	0.2 A, 250 VAC (General purpose)
G6E-134PL-ST-US			0.6 A, 125 VAC (General purpose)
G6EU-134P-ST-US			2 A, 30 VDC (Resistive)
G6EK-134P-ST-US			0.6 A, 125 VDC (Resistive)
G6EK-134PL-ST-US			

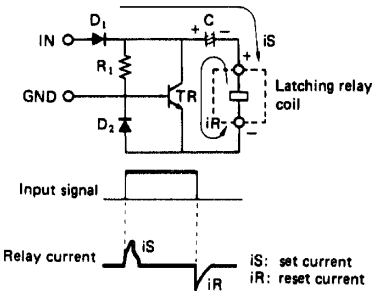
Note: 1. The rated values approved by each of the safety standards (e.g., UL, CSA, TUV) may be different from the performance characteristics individually defined in this catalog.
2. In the interest of product improvement, specifications are subject to change.

Hints on Correct Use

Avoid ultrasonic cleaning at 28 kHz, 13 mW/cm^3 for a period of more than 30 seconds.

Single-winding type (G6EU)
Example of low-power consumption driver circuit

1. This is an example of a driver circuit that allows Model G6E to function as a normal relay with a normal switching pulse input.
2. The relay is set by an abrupt current charged to capacity C. This current flows in the relay via diode D_1 and C and out via diode D_2.
3. The relay is reset by the discharge current of C flowing in the relay via transistor TR and C.



Notes:

1. Give adequate consideration to the circuit constant when actually using this circuit, confirming the set and reset status of the relay.
2. OMRON owns the patent on this circuit. Consult OMRON when using this circuit.

OMRON

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