

## MR602 Series



The NEC MR602 offers such characteristics as, low power consumption, and high breakdown voltage in a compact through hole design.

This MR602 is available in a polarized 2 form C (DPDT) or 2 form D (DPDT-MB) contact arrangements in a through hole DIP terminal design.

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### FEATURES

- Low power consumption
- Small package for automatic insertion
- Plastic sealed for wave soldering
- Variation (single side stable bistable operations, form C or D contacts)
- 1500 V FCC surge, 1000 Vac breakdown voltage
- Tubes for automated insertion machine
- Stable contact resistance at high temperature (at 85°C)
- UL recognized (E73266), CSA certified (LR46266)

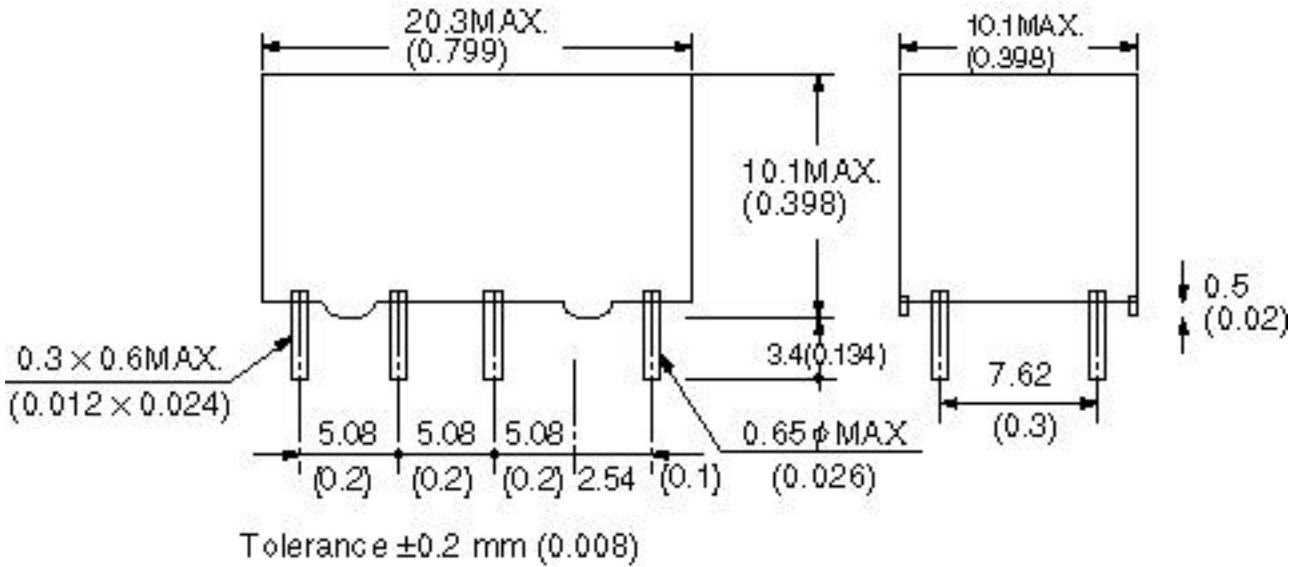
**SPECIFICATIONS**

Contact Form		2 form C or 2 form D
Contact Material		Silver alloy with gold alloy overlay
Contact Ratings	Maximum switching power	60 W, 125 VA
	Maximum switching voltage	220 Vdc, 250 Vac
	Maximum switching current	2 A
	Maximum carrying current	2 A
Minimum Contact Ratings		100 mVdc, 100 $\mu$ A
Initial Contact Resistance		50 mOhm typical
Nominal Operating Power		200 mW 100 mW (Latch type)
Operate Time (Excluding bounce)		Approximately 3.5 ms without diode
Release Time (Excluding bounce)		Approximately 2 ms without diode
Insulation Resistance		1000 MOhm at 500 Vdc
Breakdown Voltage	Between open contacts	1000 Vac (for one minute): 2 form C contact 500 Vac (for one minute): 2 form D contact
	Between adjacent contacts	1000 Vac (for one minute)
	Between coil to contacts	1000 Vac (for one minute) 1500 V surge (10 x 160 $\mu$ s*)
Shock Resistance		294 m/s <sup>2</sup> (30 G) (misoperating) 980 m/s <sup>2</sup> (100G) (destructive failure)
Vibration Resistance		10 to 55 Hz, double amplitude 1.5 mm (10 G) (misoperating) 10 to 55 Hz, double amplitude 5 mm (30 G) (destructive failure)
Ambient Temperature		-40 to +85°C
Coil Temperature Rise at Nominal Voltage		20°C
Running Specifications	Nonload	1 x 10 <sup>7</sup> operations
	Load	50 Vdc, 0.1 A (resistive) 1 x 10 <sup>6</sup> operations at 85°C
		10 Vdc, 10 mA (resistive) 1 x 10 <sup>6</sup> operations at 85°C
Weight		Approximately 3.5 g

\* rise time: 10 $\mu$ s,  
fall time: 160 $\mu$ s

## DIMENSIONS

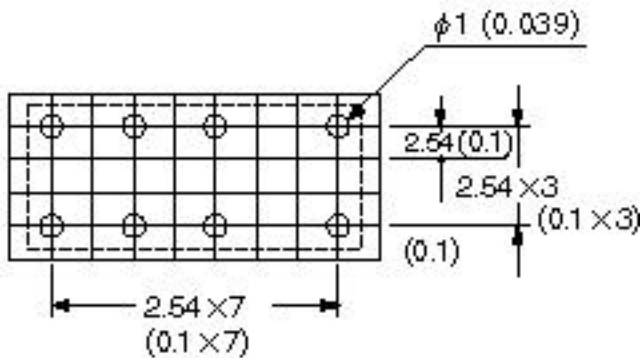
mm (inch)



## PCB PAD LAYOUT

(bottom view) mm (inch)

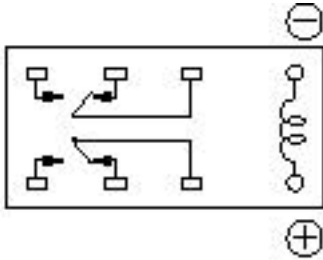
(Bottom view)



Tolerance ±0.1 mm (0.004)

## SCHEMATICS

(bottom view)



Not energized position  
(Reset position for latch type)

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## PART NUMBER SYSTEM

MR602 - L 5 U S 2 R  
① ② ③ ④ ⑤ ⑥ ⑦

- ① Relay Series
- ② Latching Type
  - Blank: Nonlatch Type
  - L: Latching Type (single wound coil)
- ③ Nominal Coil Voltage (See part numbers)
- ④ Safety Standard
  - Blank: Standard Type
  - U: UL Recognized CSA Certified Type
- ⑤ Sealed Type (Washable)
- ⑥ Contact Arrangement
  - Blank: 2 Form C
  - 2: Form D
- ⑦ Contact Material
  - Blank: Silver-palladium alloy with gold alloy overlay
  - R: Silver-nickel alloy with gold alloy overlay

**PART NUMBERS****Standard Type at 25° C (77° F)**

2 form C		2 form D		Nominal Voltage (Vdc)	Coil Resistance (Ohm) ±10%	Must Operate Voltage (Vdc)		Must Release Voltage (Vdc)	
Standard	Special	Standard	Special			2 form C	2 form D	2 form C	2 form D
MR602-1.5SR	MR602-1.5S	MR602-1.5S2R	MR602-1.5S2	1.5	11.3	1.05	1.2	0.15	0.15
MR602-3SR	MR602-3S	MR602-3S2R	MR602-3S2	3	45	2.1	2.4	0.3	0.3
MR602-4.5SR	MR602-4.5S	MR602-4.5S2R	MR602-4.5S2	4.5	101.3	3.15	3.6	0.45	0.45
MR602-5SR	MR602-5S	MR602-5S2R	MR602-5S2	5	125	3.5	4.0	0.5	0.5
MR602-6SR	MR602-6S	MR602-6S2R	MR602-6S2	6	180	4.2	4.8	0.6	0.6
MR602-9SR	MR602-9S	MR602-9S2R	MR602-9S2	9	405	6.3	7.2	0.9	0.9
MR602-12SR	MR602-12S	MR602-12S2R	MR602-12S2	12	720	8.4	9.6	1.2	1.2
MR602-24SR	MR602-24S	MR602-24S2R	MR602-24S2	24	2880	16.8	19.2	2.4	2.4
MR602-48SR	MR602-48S	MR602-48S2R	MR602-48S2	48	11050	33.6	38.4	4.8	4.8

**Latching Type (Single Wound Coil) at 25° C (77° F)**

2 form C		2 form D		Nominal Voltage (Vdc)	Coil Resistance (Ohm) ±10%	Must Operate Voltage (Vdc)		Must Release Voltage (Vdc)
Standard	Special	Standard	Special			2 form C	2 form D	2 form C
MR602-L1.5SR	MR602-L1.5S	MR602-L1.5S2R	MR602-L1.5S2	1.5	22.5	1.05	1.2	1.05
MR602-L3SR	MR602-L3S	MR602-L3S2R	MR602-L3S2	3	90	2.1	2.4	2.1
MR602-L4.5SR	MR602-L4.5S	MR602-L4.5S2R	MR602-L4.5S2	4.5	202.5	3.15	3.6	3.15
MR602-L5SR	MR602-L5S	MR602-L5S2R	MR602-L5S2	5	250	3.5	4.0	3.5
MR602-L6SR	MR602-L6S	MR602-L6S2R	MR602-L6S2	6	360	4.2	4.8	4.2
MR602-L9SR	MR602-L9S	MR602-L9S2R	MR602-L9S2	9	810	6.3	7.2	6.3
MR602-L12SR	MR602-L12S	MR602-L12S2R	MR602-L12S2	12	1440	8.4	9.6	8.4
MR602-L24SR	MR602-L24S	MR602-L24S2R	MR602-L24S2	24	5760	16.8	19.2	16.8
MR602-L48SR	MR602-L48S	MR602-L48S2R	MR602-L48S2	48	12700	33.6	38.4	33.6

## SAFETY STANDARD AND RATING

UL Recognized (UL508)* File No. E73266	CSA Certified (CSA C22.2 No. 14) File No. LR46266
30 Vdc, 2 A (Resistive) 110 Vdc, 0.6 A (Resistive) 125 Vac, 0.5 A (Resistive)	

\* Spacing: UL114, UL478

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