100 GRID TERMINAL RELAY DPDT

● Basic   ● Suppression

Series MGA2

Product Description

A series of ultra miniature hermetically sealed relays with .100 inch grid spaced terminations. These relays are similar to MA series TO-5 relays construction.

The following construction features ensure the highest reliability in extreme environments:

- All welded relay construction
- Cleaning and sealing techniques ensures maximum internal cleanliness
- Low level to 1 ampere switching
- 2 form C, DPDT contacts, special metal alloy with gold plating
- Frame design and force / mass ratio provides exceptional shock and vibration immunity

Low intercontact capacitance and contact circuit losses, provides also a reliable switching functions in demanding RF applications, combined with small size and low coil power dissipation (see figure 1).

Series Types

- **MGA2**   Basic Relay, 2 form C, DPDT
- **MGAD2**   Basic Relay combined with an internal diode for coil transient suppression

CECC 16207 - 007

Environmental and Physical Specifications

Temperature (Ambient)	- 65°C to + 125°C
Shock	100 g, 6 ms., half sine wave
Vibration (sinusoidal)	30 g, 10 to 3000 Hz, 2,5 amplitude peak
Vibration (random)	$0,2g^2$ / Hz, 20 to 2000 Hz
Bump	40 g, 6 ms., half sine wave
Sealing	All welded, Hermetic
Weight	0,09 oz. (2,55 grams) max.
Finish	Bright tin lead plated terminations and case

## Electrical Characteristics (over the Temperature range. Unless otherwise noted)

Coil Data	See Typical Characteristics chart		
Contact Rating	**Type Load**	**Contact Load**	**Cycles min.**
(Note: All ratings with grounded case)	Low Level	30 µA / 30 mV	1.000.000
	Resistive	1 A / 28 Vdc	100.000
	Inductive	200 mA / 28 Vdc (320 mH)	100.000
	Lamp	0,1 A / 28 Vdc	100.000
	Intermediate	0,1 A / 28 Vdc	50.000
	Resistive overload	2 A / 28 Vdc	100
	Inductive overload	0,4 A / 28 Vdc (320 mH)	100
Contact Resistance	0,1 Ω max. initial, 0,2 Ω max. after life		
Operate Time	2,0 ms. max.		
Release Time	1,5 ms. max. Series: MGA2	4,0 ms. max. Series: MGAD2	
Contact Bounce	1,5 ms. max.		
Contact Stabilisation Time	2,5 ms. max.		
Dielectric Strength	500 Vrms min., 60 Hz, all points at sea level	250 Vrms min., 60 Hz, all points at 26.000 mt.	
Insulation Resistance	10.000 MΩ min. all points at 500 Vdc		
Intercontact Capacitance	0,4 pF typical		
Sensitivity	140 mW at pick-up, 500 mW at nominal rated coil voltage, at 25 °C		
Diode P.I.V.	100 Vdc min. Series: MGAD2		
Negative Coil Transient	1,0 Vdc max. Series: MGAD2		

Figure 1 - Radio Frequency Curves

Note:
Radio frequency curves are typical characteristics based on factory knowledge. Tests to ensure compliance on RF performance, are not performed.

A – Insertion loss
B – Return loss (VSWR)
C – Isolation across contacts

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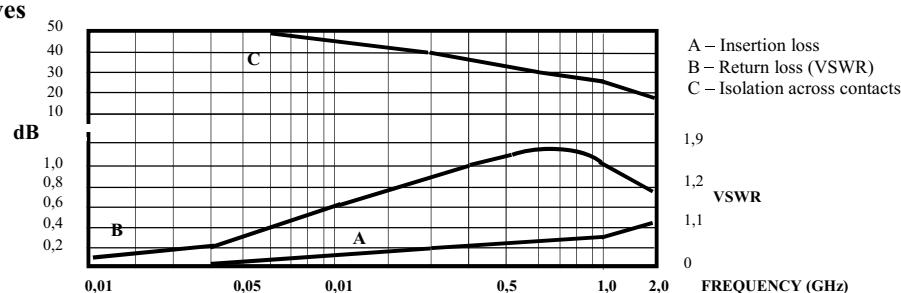
100 GRID TERMINAL RELAY DPDT

• Basic   • Suppression

Series MGA2

Typical Characteristics

Identification letter of the Coil	Coil Voltage Vdc		Coil resistance Ω ± 10% at 23°C	Must Operated Voltage Vdc		Release Voltage Vdc				Coil Transient Suppression Code No. *
						Max.		Min.		
	Rated	Max.		23°C	125°C	23°C	125°C	23°C	- 65°C	
A	5,0	5,8	50	2,7	3,5	1,4	2,3	0,22	0,14	1
B	6,0	8,0	98	3,5	4,5	2,0	3,2	0,28	0,18	1
C	9,0	12,0	220	5,3	6,8	3,0	4,9	0,54	0,35	1
D	12,0	16,0	390	7,0	9,0	4,0	6,5	0,63	0,41	1
E	18,0	24,0	880	10,5	13,5	6,0	10,0	0,91	0,59	1
G	28,0	29,0	1560	14,2	18,0	8,0	13,0	1,37	0,89	1
Note: - * Without the Coil Transient Suppression Diode, the Code Number is 0										

Terminal and Mounting Variants

| 2 O | 4 O | 4 J* | 2 P | 4 P | 4 K* | 2 T | 4 T | 4 L* |

Ground Pin

.300 (7,6) max.

.187 (4,75)

.500 (12,7) min.

.315 (8,0) max.
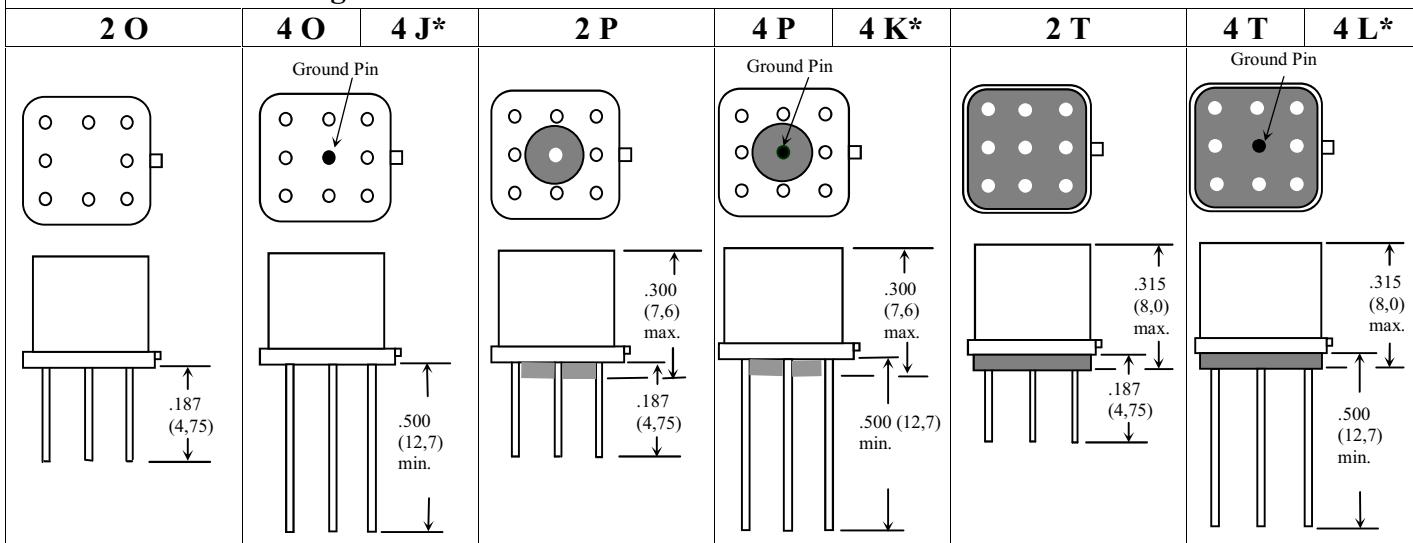
Note: Dimensions are shown in inches (millimetres)
   * - Relay with ground Pin

Schematic Diagrams
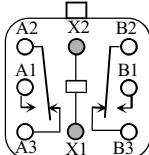
Basic
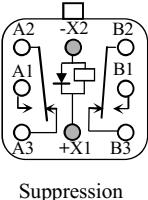
Suppression

Note:
- Schematics are viewed from terminals
- Diagram references are not marked on the relay

Outline Dimensions

.035 (0,9)

.031 (0,8)

.335 (8,51) sq. max.

.280 (7,1) max.

.100 (2,54) Typ.

.375 (9,53) sq. max.

Ø .017 (0,43) + .002 (0,05) - .001 (0,03)
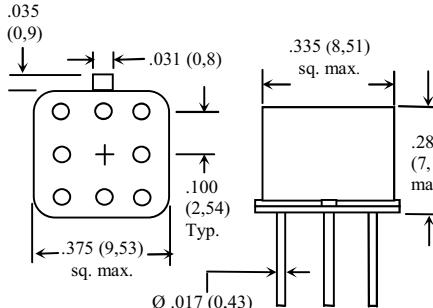
Note:
Dimensions are shown in inches (millimetres)

Spacer Pads

A   B

Ø .047 (1,19)

Ø .047 (1,19)

Ø .040 (1,00)

.375 (9,53) sq. max.

.100 (2,54) Typ.

.170 (4,32) ± .005 (0,13)

.014 (0,36) ± .003 (0,08)

.031 (0,80) max.
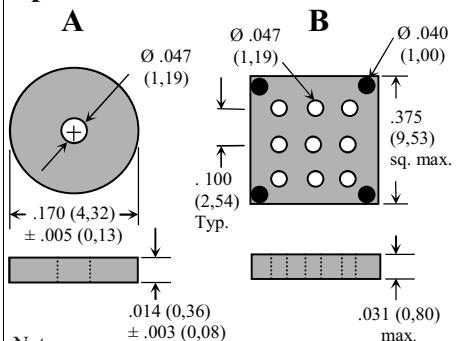
Notes:
- Spacer Pad type A: material Polyester
- Spacer Pad type B: Diallyl Phthalate
- Dimensions are shown in inches (millimetres)

How to Order

CECC 16207   - 007   Y   A   2   P   1

CECC Specification No.
Type Code (CECC registration No.)
Assessment Level
Coil Variant Code (Identification letter, see table)

Coil transient suppression
Mounting Variant
Terminal Variant