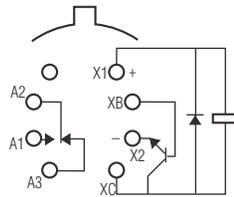


Single Pole, Electrically Held, 1 Amp and Less (Continued)

1MAT

1MAT
Standard TO-5
Diode Suppressed/
Transistor Driven
High Performance Relay
Qualified to
MIL-R-28776/5



Terminal View

Product Facts

- Transistor driver & suppression diode
- Hermetically sealed
- High shock & vibration ratings
- Spreader pad
- Excellent RF switching

Electrical Characteristics

Contact Arrangement —
 1 Form C (SPDT)

Contact Material —
 Stationary —
 Gold/platinum/palladium/silver alloy
 (gold plated)
 Moveable —
 Gold/platinum/palladium/silver alloy
 (gold plated)

Contact Resistance —
 Before Life — 100 milliohms max.
 (measured @ 10 mA @ 6 Vdc)
 After Life — 200 milliohms max.
 (measured @ 1 A @ 28 Vdc)

Mechanical Life Expectancy —
 1 million operations

Coil Voltage — 5 to 26.5 Vdc

Coil Power — 512 mW max. @ 25°C

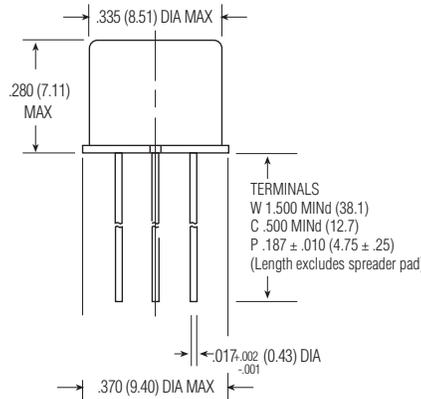
Duty Cycle — Continuous

Pick-up Voltage — Approximately
 50% of nominal coil voltage

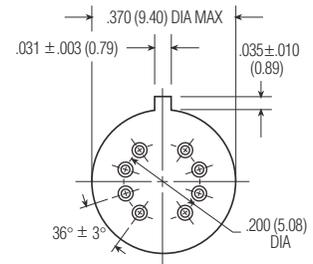
Pick-up Sensitivity —
 100 mW max. @ 25°C

Contact Ratings

Contact Load	Type	Operations MIND.
1.0 A @ 28 Vdc	Resistive	100,000
250 mA @ 115 Vac, 60 Hz & 400 Hz	Resistive (case not grounded)	100,000
100 mA @ 115 Vac, 60 Hz & 400 Hz	Resistive	100,000
0.2 A @ 28 Vdc	Inductive (0.32 Henry)	100,000
0.1 A @ 28 Vdc	Lamp	100,000
30 µA @ 50 mVdc	Low Level	1,000,000
0.1 A @ 28 Vdc	Intermediate Current	50,000



1MAT Enclosure



1MAT Header

Single Pole, Electrically Held, 1 Amp and Less (Continued)

1MAT (Continued)

Operating Characteristics

Timing —
 Operate Time — 2.0 ms max.
 Release Time —
 4.0 ms max.
Contact Bounce — 1.5 ms max
Dielectric Withstanding Voltage —
 Between Open Contacts —
 500 Vrms 60 Hz
 Between Adjacent Contacts —
 500 Vrms 60 Hz
 Between Contacts & Coil —
 500 Vrms 60 Hz
Insulation Resistance —
 10,000 megohms @ 500 Vdc
 1,000 megohms @ 500 Vdc
 (coil to case @ +125°C)

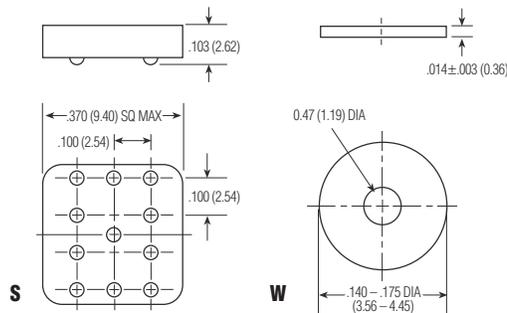
Environmental Characteristics

Temperature Range —
 -65°C to +125°C
Weight —
 0.08 oz. (2.27 grms)
 0.09 oz. (2.52 grms) with spreader pad
 attached
Vibration Resistance —
 30 G's, 10 to 3,000 Hz
Shock Resistance —
 75 G's, 6 ±1 ms max.
QPL Approval —
 MIL-R-28776/5 (J1MAT)

Semiconductor Characteristics

Diode —
 100 Vdc peak inverse voltage (PIV)
 1.0 Vdc max. transient voltage
Transistor —
 0.3 Vdc MINd. base turn off voltage;
 6.0 Vdc min. emitter-base breakdown
 voltage (BV_{EB0}) @ 25°C;
 80.0 Vdc min. collector-base breakdown
 voltage (BV_{CB0}) @ 25°C & I_C=100 µA

1
CII Low Signal Relays



Spreader & Mounting Pads

Coil Data

Nom. Coil Voltage (Vdc)	Coil Resistance in Ohms ±10% @ 25°C (Note 1)	Coil Circuit Current mA (Max.) (Note 1&2)	Coil Circuit Current mA (MINd.) (Note 1&2)	Pickup Voltage Vdc (Max.) @ 25°C (Note 2)	Base Turn On Current mA (Max.) @ 25°C	Pickup Voltage Vdc (Max.) @ 125°C (Note 2)	Base Turn On Current mA (Max.) @ 125°C	Drop-Out Voltage Vdc (MINd.) @ 25°C (Note 2)	Drop-Out Voltage Vdc (MINd.) @ -65°C (Note 2)	Nom. Coil Power (mW) @ 25°C	Max. Coil Voltage	Coil Desig.
1MAT												
5.0	63	89.6	66.6	3.0	0.60	3.9	2.38	0.24	0.15	397	5.8	5
6.0	125	55.5	42.0	3.8	0.42	5.2	1.60	0.31	0.18	288	8.0	6
9.0	280	38.1	28.0	5.6	0.27	7.8	1.07	0.47	0.35	289	12.0	9
12.0	500	28.1	20.9	7.2	0.21	10.0	0.80	0.62	0.40	288	16.0	12
18.0	1,130	18.8	13.8	10.7	0.12	14.5	0.53	0.94	0.58	287	24.0	18
26.5	2,000	15.5	11.5	14.4	0.10	19.0	0.40	1.25	0.89	351	32.0	26

Notes: 1. Coil resistance not directly measurable. Coil current should be within limits shown when tested at nominal voltage at 25°C for 5 seconds max.
 2. Set base current at 3 mA to 15 mA during measurements.

Ordering Instructions

Catalog-selected Relays: The catalog number is derived by choosing the proper CODE for each of the relay characteristics in the order in which the codes are listed.

Specifying a Part Number Example:

<u>Type</u>	<u>Terminal</u>	<u>Diodes</u>	<u>Coils</u>	<u>Spreader/Mounting Pads</u>
1MA	C	T	-26	S

* The part number example shown on this page is for catalog items. For a list of specific QPL part numbers, please see the index in Section 15.