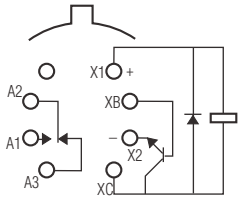
## Single Pole, Electrically Held, 1 Amp and Less (Continued)

**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

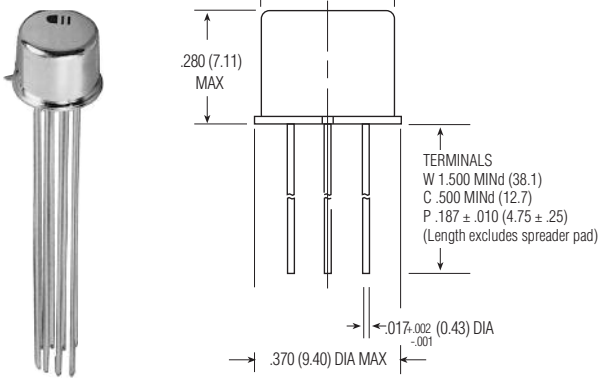
**Duty Cycle** — Continuous

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

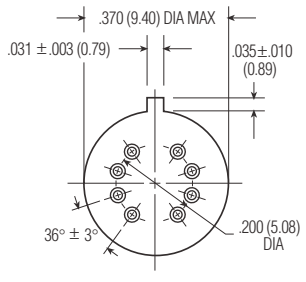
**Pick-up Sensitivity** — 100 mW max. @ 25°C

### 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**



Catalog 5-1773450-5
Revised 3-13

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Dimensions are shown for reference purposes only. Specifications subject to change.

Dimensions are in millimeters unless otherwise specified.

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Asia Pacific: +86 0 400 820 6015
UK: +44 800 267 666

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## 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

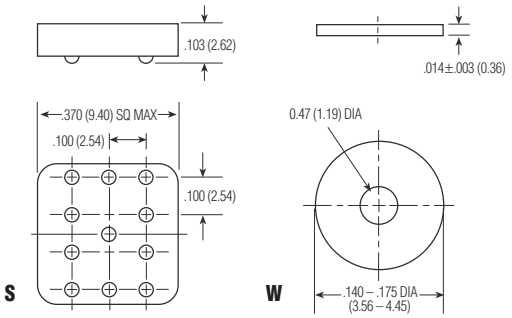
**Shock Resistance** —
75 G's, 6 ±1 ms max.

**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 ($BV_{EBO}$) @ 25°C;
80.0 Vdc min. collector-base breakdown voltage ($BV_{CBO}$) @ 25°C & $I_C$=100 µA




**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: | Type | Terminal | Diodes | Coils | Spreader/Mounting Pads |
|---|---|---|---|---|---|
| | 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.



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Revised 3-13

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## TE Connectivity:

1-962915-1 1393431-1 2377783-2 3-1393225-0 917696-1 936348-1 CPF0402B37K4E1 2310537-1 2834055-1 CRGCQ2010J3K3 1-794222-0 1743455-2 1969656-1 MPT100C18RF 2005330-1 650075-000 SBCHE154R7K TE50BR39J 141991-2 2-292161-3 2380312-2 3631B101LL SBCHE64R7K 175977-2 1903112-2 3430B2F51RTDF ROX05SJ18R U5254-000005-030PA RH73H2A40MKTN SMW73R0JT