

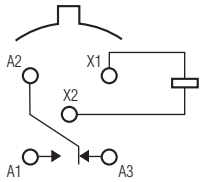
1MS • 1MSD • 1MSDD • 1MST

TO-5 HIGH-PERFORMANCE RELAYS

1MS

**SENSITIVE TO-5
HIGH-PERFORMANCE RELAY**

**QUALIFIED TO
MIL-R-39016/10**



TERMINAL VIEW

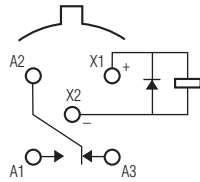
FEATURES

- Hermetically sealed
- High shock & vibration ratings
- Spreader pad
- Excellent RF switching

1MSD

**SENSITIVE TO-5
DIODE SUPPRESSED
HIGH-PERFORMANCE RELAY**

**QUALIFIED TO
MIL-R-39016/25**



TERMINAL VIEW

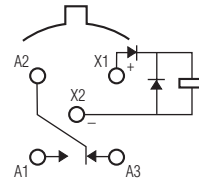
FEATURES

- Suppression diode
- Hermetically sealed
- High shock & vibration ratings
- Spreader pad
- Excellent RF switching

1MSDD

**SENSITIVE TO-5 DIODE
SUPPRESSED/PROTECTED
HIGH-PERFORMANCE RELAY**

**QUALIFIED TO
MIL-R-39016/26**



TERMINAL VIEW

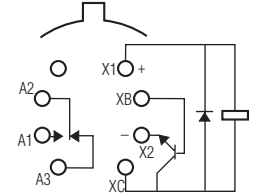
FEATURES

- Suppression & protection diodes
- Hermetically sealed
- High shock & vibration ratings
- Spreader pad
- Excellent RF switching

1MST

**SENSITIVE TO-5 DIODE
SUPPRESSED/TRANSISTOR DRIVEN
HIGH-PERFORMANCE
RELAY**

**QUALIFIED TO
MIL-R-28776/4**



TERMINAL VIEW

FEATURES

- 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 40 Vdc

COIL POWER
506 mW max. @ 25°C

DUTY CYCLE
Continuous

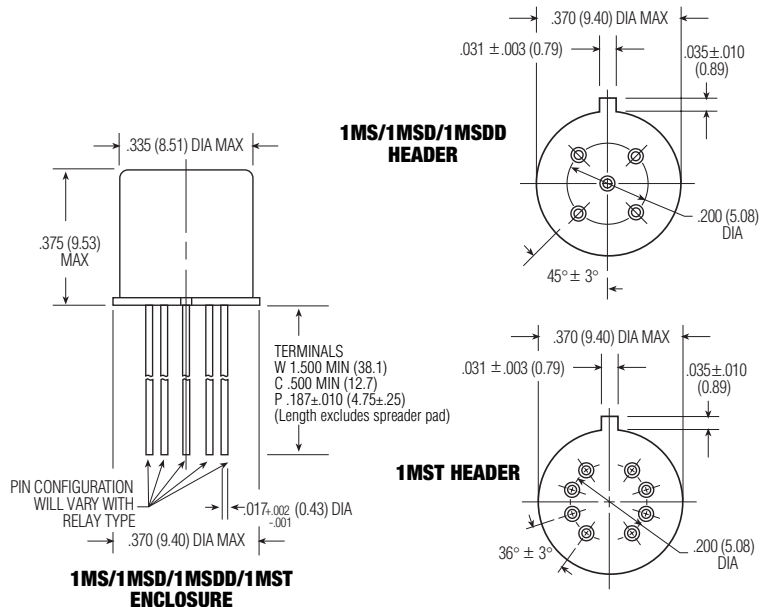
PICK-UP VOLTAGE
Approximately 50% of nominal coil voltage

PICK-UP SENSITIVITY
40 mW max. @ 25°C



CONTACT RATINGS

CONTACT LOAD	TYPE	OPERATIONS MIN.
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 mA @ 50 mVdc	Low Level	1,000,000
0.1 A @ 28 Vdc	Intermediate Current	50,000



OPERATING CHARACTERISTICS

TIMING

Operate Time:
4.0 ms max.
1MST: 3.5 ms max.
(transistor driven)
Release Time:
1MS: 2.5 ms max.
1MSD/1MSDD: 7.5 ms max.
(suppression diode,
suppression/steering diodes)
1MST: 7.5 ms max .
(transistor driven)

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

0.10 oz. (2.84 grms)
0.11 oz. (3.09 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-39016/10 (J1MS)
MIL-R-39016/25 (J1MSD)
MIL-R-39016/26 (J1MSDD)
MIL-R-28776/4 (J1MST)

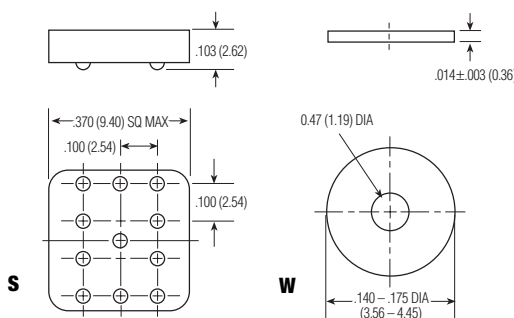
SEMICONDUCTOR CHARACTERISTICS

DIODE

100 Vdc peak inverse voltage (PIV)
1.0 Vdc max. transient voltage

TRANSISTOR

0.3 Vdc min. base turn off voltage
6.0 Vdc min. emitter-base
breakdown voltage (BV_{EBO}) @ 25°C
80.0Vdc min. collector-base
breakdown voltage (BV_{CBO}) @ 25°C
& I_C=100 mA



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 (MIN.) (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 (MIN.) @ 25°C (Note 2)	DROP-OUT VOLTAGE Vdc (MIN.) @ -65°C (Note 2)	NOM. COIL POWER (mW) @ 25°C	MAX. COIL VOLTAGE	COIL DESIG.
1MS/1MSD												
5.0	125	n/a	n/a	2.8	n/a	3.7	n/a	0.23	0.15	200	8.0	5
6.0	255	n/a	n/a	3.5	n/a	4.5	n/a	0.28	0.18	141	11.0	6
9.0	630	n/a	n/a	5.3	n/a	6.8	n/a	0.54	0.35	129	12.0	9
12.0	1,025	n/a	n/a	7.0	n/a	9.0	n/a	0.63	0.40	140	22.0	12
18.0	2,300	n/a	n/a	10.5	n/a	13.5	n/a	0.91	0.59	141	24.0	18
26.5	4,000	n/a	n/a	14.2	n/a	18.0	n/a	1.37	0.89	176	45.0	26
32.0	6,500	n/a	n/a	18.7	n/a	24.0	n/a	1.59	1.0	158	57.0	32
40.0	11,000	n/a	n/a	23.3	n/a	30.0	n/a	2.0	1.3	145	75.0	40
1MSDD												
5.0	100	50.0	36.3	3.5	n/a	4.5	n/a	0.23	0.15	250	8.0	5
6.0	200	30.6	22.7	4.1	n/a	5.5	n/a	0.28	0.18	180	11.0	6
9.0	630	15.0	11.5	6.3	n/a	7.8	n/a	0.54	0.35	129	16.0	9
12.0	1,025	12.5	9.7	8.0	n/a	10.0	n/a	0.63	0.40	140	22.0	12
18.0	2,300	8.5	6.7	11.6	n/a	14.5	n/a	0.91	0.58	141	33.0	18
26.5	4,000	7.2	5.7	15.4	n/a	19.0	n/a	1.37	0.89	176	45.0	26
32.0	6,500	5.4	4.3	17.0	n/a	21.0	n/a	1.5	0.95	158	57.0	32
40.0	11,000	4.0	3.2	22.0	n/a	27.0	n/a	2.0	1.28	145	75.0	40
1MST												
5.0	125	47.8	34.7	2.6	0.28	3.6	1.20	0.22	0.15	200	8.0	5
6.0	255	27.7	21.2	3.5	0.20	4.8	0.78	0.28	0.18	141	11.0	6
9.0	630	16.8	11.8	5.4	0.13	7.8	0.48	0.54	0.35	129	16.0	9
12.0	1,025	13.6	10.1	6.6	0.10	10.0	0.39	0.63	0.41	140	22.0	12
18.0	2,300	9.1	6.7	9.8	0.07	14.5	0.26	0.91	0.58	141	33.0	18
26.5	4,000	7.7	5.7	12.8	0.05	19.0	0.20	1.37	0.89	176	45.0	26
32.0	6,500	5.8	4.2	18.7	0.04	24.0	0.16	1.60	1.00	158	57.0	32
40.0	11,000	4.3	3.1	23.3	0.03	30.0	0.13	2.10	1.30	145	75.0	40

Note 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.
Note 2: Set base current at 3 mA to 15 mA during measurements.

SPECIFYING A PART NUMBER EXAMPLE:

TYPE 1MS **TERMINALS** C **DIODES TRANSISTOR** D **COIL** -26 **SPREADER/MOUNTING PADS** S

