

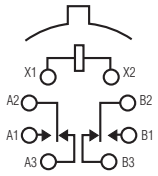
MS · MSD · MSDD · MST

T0-5 HIGH-PERFORMANCE RELAYS

MS

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

**QUALIFIED TO
MIL-R-39016/11**



TERMINAL VIEW

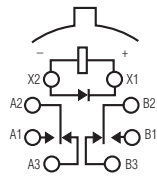
FEATURES

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

MSD

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

**QUALIFIED TO
MIL-R-39016/16**



TERMINAL VIEW

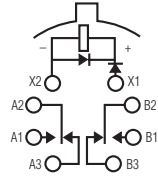
FEATURES

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

MSDD

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

**QUALIFIED TO
MIL-R-39016/21**



TERMINAL VIEW

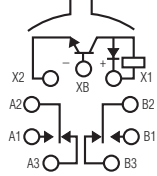
FEATURES

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

MST

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

**QUALIFIED TO
MIL-R-28776/3**



TERMINAL VIEW

FEATURES

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

ELECTRICAL CHARACTERISTICS

CONTACT ARRANGEMENT
2 Form C (DPDT)

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 48 Vdc

COIL POWER
565 mW max. @ 25°C

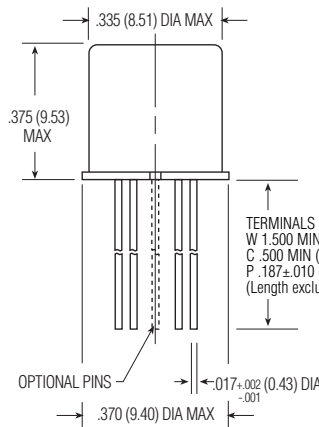
DUTY CYCLE
Continuous

PICK-UP VOLTAGE
Approximately 50% of nominal coil voltage

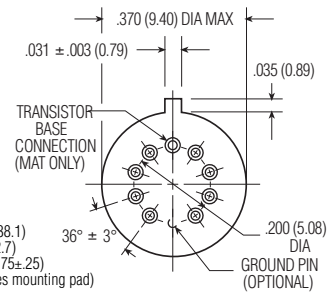
PICK-UP SENSITIVITY
60 mW max. @ 25°C

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 µA @ 50 mVdc	Low Level	1,000,000
0.1 A @ 28 Vdc	Intermediate Current	50,000



ENCLOSURE



HEADER



OPERATING CHARACTERISTICS

TIMING

Operate Time:
4.0 ms max.

Release Time:
MS: 2.0 ms max.
MSD/MSDD: 7.5 ms max.
(suppression diode,
suppression/steering diodes)
MST: 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 min. @ 500 Vdc
1,000 megohms @ 500 Vdc
(coil to case @ +125°C)

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE

-65°C to +125°C

WEIGHT

0.12 oz. (3.40 gms)
0.13 oz. (3.45 gms) 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-39016/11 (JMS)
MIL-R-39016/16 (JMSSD)
MIL-R-39016/21 (JMSSDD)
MIL-R-28776/3 (JMST)

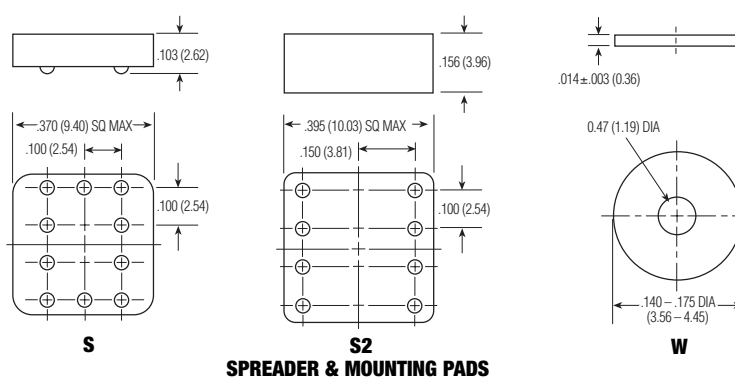
SEMICONDUCTOR CHARACTERISTICS

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 µA



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.
MS/MSD												
5.0	100	n/a	n/a	2.6	n/a	3.5	n/a	0.23	0.12	250	7.5	5
6.0	200	n/a	n/a	3.4	n/a	4.5	n/a	0.28	0.18	180	10.0	6
9.0	400	n/a	n/a	4.85	n/a	6.8	n/a	0.55	0.35	203	15.0	9
12.0	850	n/a	n/a	7.0	n/a	9.0	n/a	0.64	0.41	169	20.0	12
18.0	1,600	n/a	n/a	9.8	n/a	13.5	n/a	0.92	0.59	203	30.0	18
26.5	3,300	n/a	n/a	14.0	n/a	18.0	n/a	1.4	0.89	213	40.0	26
36.0	6,500	n/a	n/a	20.0	n/a	27.0	n/a	1.8	1.25	199	57.0	36
48.0	11,000	n/a	n/a	25.8	n/a	36.0	n/a	2.4	1.60	209	75.0	48
MSDD												
5.0	64	78.1	56.8	2.9	n/a	3.7	n/a	0.8	0.7	391	7.0	5
6.0	125	48.9	36.3	4.0	n/a	4.8	n/a	0.9	0.8	288	10.0	6
9.0	400	23.6	18.1	6.1	n/a	8.0	n/a	1.1	0.9	203	15.0	9
12.0	850	15.0	11.7	7.8	n/a	11.0	n/a	1.3	1.0	169	20.0	12
18.0	1,600	12.2	9.6	11.3	n/a	14.5	n/a	1.5	1.1	203	30.0	18
26.5	3,300	8.8	7.0	15.2	n/a	19.0	n/a	1.7	1.3	213	40.0	26
36.0	6,500	6.1	4.9	21.7	n/a	27.2	n/a	2.3	1.7	199	57.0	36
48.0	11,000	4.8	3.9	27.8	n/a	34.8	n/a	2.8	2.0	209	75.0	48
MST												
5.0	100	59.3	43.5	2.8	0.37	3.6	1.50	0.22	0.14	250	7.0	5
6.0	200	35.4	26.4	3.8	0.25	4.8	1.00	0.28	0.18	180	10.0	6
9.0	400	25.8	19.7	5.2	0.18	7.8	0.75	0.54	0.35	203	15.0	9
12.0	850	16.7	12.2	7.4	0.12	11.0	0.47	0.63	0.41	169	20.0	12
18.0	1,600	13.1	9.7	10.0	0.09	14.5	0.38	0.91	0.59	203	30.0	18
26.5	3,300	9.5	6.9	14.2	0.06	19.0	0.24	1.37	0.89	213	40.0	26
36.0	6,500	6.4	4.8	20.0	0.034	27.0	0.17	1.80	1.25	199	57.0	36
48.0	11,000	5.1	3.7	25.8	0.026	36.0	0.13	2.40	1.60	209	75.0	48

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	TERMINALS	DIODES	GROUND PINS	COILS	SPREADER/MOUNTING PADS
	MS	C	D	G	-26	S

