

Features

- Through hole or surface mount terminals
- Meets Bellcore GR 1089, FCC Part 68 and ITU-T K20.
- · For applications in telecommunications, office automation, consumer electronics, medical equipment, measurement and control equipment. · Immersion cleanable, plastic sealed case.
- 100mW coil for latching models, 140mW coil for non-latching.
- Ultrasonic cleaning not recommended.

Contact Data @ 23°C (except as noted)

Arrangement: 2 Form C (DPDT) bifurcated contacts. Material: Stationary: Palladium-Ruthenium, gold covered. Ratings: Max. Switched Current: 2A. Max. Carry Current: 2A (at max ambient temperature. Max. Switched Voltage: 220VDC, 250VAC Max. Switched Power: 60W DC or 62.5VA AC UL/CSA Ratings: 250mA @ 250VAC; 2A @ 30VDC; 500mA @ 120VDC; 270mA @ 220VDC. Initial Contact Resistance: <70 milliohms @ 10mA / 20mV. Expected Mechanical Life: 100 million operations. Expected Electrical Life: 2.5 million operations @ 10mA / 30mVDC 2 million operations @ cable load open end. 500,000 operations @ 240mA / 125VDC, res. 500,000 operations @ 1A / 30VDC, res 100,000 operations @ 270mA / 220VDC, res. 100,000 operations @ 2A / 30VDC, res. 100,000 operations @ 250mA / 250VDC, res.

Thermoelectric potential: <10µV.

High Frequency Data

Capacitance: Between Open Contacts: 1pF, max. Between Coil and Contacts: 2pF, max. Between Poles: 2pF, max. RF Characteristics: Isolation at 100 / 900 MHz: -37.0 db / -18.8 db. Insertion loss at 100 / 900 MHz: -0.03 db / -0.33 db. V. S. W. R. at 100 / 900 MHz: 1.06 / 1.49.

Initial Dielectric Strength

Between Open Contacts: 1,000Vrms for 1 minute. Between Coil and Contacts: 1,800Vrms for 1 minute. Between Poles: 1,000Vrms for 1 minute. Surge Voltage Resistance per Bellcore 1089 (2 / 10 µs), FCC 68 (10 / 160 µs) and IEC (10 / 700 µs): Between Open Contacts: 1,500V Between Coil and Contacts: 2,500V. Between Poles: 1,500V.

Initial Insulation Resistance

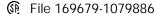
Between Contact and Coil: 10⁹ ohms or more @ 500VDC.

Dimensions are in inches over (millimeters) unless otherwise specified.

IM series

DPDT Slimline and Low Profile Telecom/Signal PC Board Relays

File E111441



16501-003

Users should thoroughly review the technical data before selecting a product part number. It is recommended that users also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

Coil Data @ 23°C

Voltage: 1.5 to 24VDC. Nominal Power: 100mW for 1.5 - 12VDC latching models; 140mW for 1.5 - 12VDC non-latching models;

200mW for all 24VDC models.

Duty Cycle: Continuous

Coil Data @ 23°C

Nominal	Operate/Set Range		Minimum	Resistance	Part
Voltage (VDC)	Minimum Voltage (VDC)	Maximum Voltage (VDC)	Release/Reset Voltage (VDC)	±10% (Ohms)	Number
Non-latchin	g 1 coil versi	ons			
1.5 3 4.5 5 6 9 12 24 Latching 1 6	1.13 2.1 3.15 3.5 4.2 6.3 8.4 16.8 coll versions	3.4 6.8 10.3 11.4 13.7 20.4 27.3 45.6	0.15 0.3 0.45 0.5 0.6 0.9 1.2 2.4	16 64 145 178 257 574 1,028 2,880	IM00 IM01 IM02 IM03 IM04 IM05 IM06 IM07
1.5 3 4.5 5 6 9 12 24	1.13 2.25 3.38 3.75 4.5 6.75 9.0 18.0	4.1 8.1 12.1 13.5 16.2 24.2 32.3 41.9	-1.13 -2.25 -3.38 -3.75 -4.5 -6.75 -9.0 -18.0	23 90 203 250 360 810 1,440 2,880	IM40 IM41 IM42 IM43 IM44 IM45 IM46 IM47

Operate Data @ 23°C

Operate and Release Voltage: See values in chart above. Operate Time (at nominal voltage): 1 ms, typ.; 3 ms, max. Reset Time [latching](at nominal voltage): 1 ms, typ.; 3 ms, max. Release Time [non-latching] (without diode in parallel): 1 ms, typ.; 3 ms, max

Release Time [non-latching] (with diode in parallel): 3 ms, typ.; 5 ms, max.

Bounce Time (at contact close): 1 ms, typ.; 5 ms, max. Maximum Switching Rate (no load): 50 operations/s.

Environmental Data

Temperature Range: -55°C to +85°C. Maximum Allowable Coil Temperature: 125°C. Thermal Resistance: < 150K/W Shock, half sinus, 11 ms: Functional: 50g. Shock, half sinus, 0.5 ms: Destructive: 500g Vibration, 10-1000 Hz.: Functional: 20g. Needle Flame Test: Application Time 20s. Resistance to Soldering: 260°C for 10s.

Mechanical Data

Termination: Through-hole printed circuit terminals or gull-wing or J-leg surface mount printed circuit terminals

Mounting Position: Any. Enclosure Type: Immersion cleanable (IP67) plastic case. Weight: 0.03 oz. (.75g) approximately.

> Specifications and availability subject to change.

tyco C.		Catalog 1308242		
Electronics		Issued 3-03		
		1.6	, 🗌	
U ₁ =	Minimum voltage at 23° C after pre-energizing	1.5	5	+
	with nominal voltage without contact current	1.4	1	+
U ₁₁ =	Maximum continous voltage at 23°	1.3	3	_
The energy	ting voltage limits // and // depend on	1.2	2	-
	The operating voltage limits $U_{\rm I}$ and $U_{\rm II}$ depend on			
the tempe	erature according to the formula:	1.1		
		1		+
$U_{I tamb} =$	$K_1 \cdot U_{123^{\circ}C}$	0.9	, L	$ \bot$
and				ſ.
U _{II tamb} =	$K_{\parallel} \cdot U_{\parallel 23^{\circ}C}$	0.8	3	+
t _{amb}	= Ambient temperature	0.7	, 🔔	\rightarrow
U _{L tamb}	 Minimum voltage at ambient temperature, t_{amb} 			
U _{II tamb}	= Maximum voltage at ambient temperature, t _{amb}	0.6	,	
$k_{\rm I}, k_{\rm II}$	= Factors (dependent on temperature), see diagram	0.0	5	+
1 11		0.4	1 L	
		0.	-60	-40

Ordering Information

See "Part Number" column in Coil Data chart on previous page for available base part numbers in the IM series.

For THT versions, add the suffix "TS" to the base part number. For gull-wing SMT versions, add the suffix "GR" to the base part number. For J-leg SMT versions, add the suffix "JR" to the base part number.

Packaging Information

KI 41

-20

THT IM series relays are shipped in tubes of 50. There are 1,000 relays in a full carton. SMT IM series relays are shipped in reels of 1,000. There are 1,000 or 5,000 relays in a full carton.

130°C

100

0

20

40

Ambient temperature t_{amb} [°C]

60

80

100

120

AXICOM

alloth

\ku_1/

atching 22

Our authorized distributors are more likely to stock the following items for immediate delivery. None at present.

Outline Dimensions THT Version SMT Version w/ Gull Wings SMT Version w/ J Legs .236 ± .003 393 ± .003 .236 ± .003 .393 ± .003 .236 ± .003 .393 ± .003 $(6 \pm .08)$ (10 ± .08) (6 ± .08) $(10 \pm .08)$ (6 ± .08) $(10 \pm .08)$ A .222 - .008 .222 - .008 .222 - .008 (5.65 - .2 (5.65 - .2) (5.65 - .2) ŧ ŧ 브 пеплег 2 + 0.04D1 D2 D2 <T1+ D1 D2 (5.08 ± .1 D .125 T2 2 ± .004 (3.2)D1 D2 D2 .015 .126 ± .006 .015 $D1 = \frac{.126 \pm .006}{(3.2 \pm .15)}$.295 + .011 .110 ± .007 (5.08 ± .1) D1= .015 T1-(3.2 ± .15) (.4) (.4) (2.8 ± .2) $(7.5 \pm .3)$ 126 ± .006 D1= (.4) $D2 = \frac{.087 \pm .006}{(2.2 \pm .15)}$ $(3.2 \pm .15)$ $D2 = \frac{.087 \pm .006}{(2.2 \pm .15)}$.2 + .004T2= (5.08 ± .1) D2= .087 ± .006 (2.2 ± .15) PC Board Layout (Bottom View) Solder Pad Layout (Bottom Views) Wiring Diagram (Bottom View) SMT Version w/ Gull Wings **THT Version** SMT Version w/ J Legs .126 .087 .087 .087.087 (2.2) 126 (3.2) (2.2)(2.2) 126 .087.087 (3.2)(22)(22).2 ± .006 .018 ± .006 1 2 3 4 1 2 3 4 315 (.46 ± .15) 234 094 252 (5.08 ± .15) 236 .157 173 5 (8) 7 8 6 (2.4) (6.4)(6) (4) (4.4)V 7 8 65 8 17 6 5 ŧ .030 (.75) DIA .047 ± .006 .028 ± .004 .047 ± .006 MIN. (1.2 ± .15) $(1.2 \pm .15)$.047 ± .006 $(.7 \pm .1)$.028 ± .004 $(1.2 \pm .15)$ $(.7 \pm .1)$ Recommended Soldering Conditions (according to CECC 00802) Vapor Phase Soldering: Temperature/Time Profile Infrared Soldering: Temperature/Time Profile (Lead Temperature) (Lead Temperature) 10 sec 300 300 20-40 sec 250 max. 245°C 250 215°C 215°C ••••• ca. 40 sec 200 200 180°C ပ Temperature °C 180°C



Temperature

150

100

50

0

50

www.tycoelectronics.com Technical support: Refer to inside back cover.

Solid Line: Typical Dotted Line: Process Limits

150

Time (s)

200

••••••

250

Dimensions are shown for 322 reference purposes only.

150

100

50

0

c

130°C

external preheating

100°C

50

100

Dimensions are in inches over (millimeters) unless otherwise specified.

200

Solid Line: Typical Dotted Line: Process Limits

150

Time (s)

forced

cooling

250