THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Operating Temperature Range Blocking or Conducting State	T_{J1}	−40 to +125	°C
Overload Junction Temperature − Maximum Conducting State Only	T_{J2}	+175	°C
Instantaneous Peak Power Dissipation (I_{pk} = 50 A, 10x1000 μsec @ 25°C)	P_{PK}	2000	W
Maximum Lead Temperature for Soldering Purposes 1/8″ from Case for 10 Seconds	T_L	260	°C

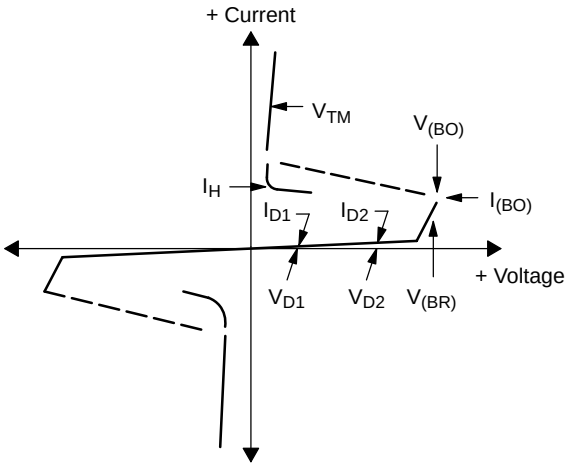
ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise noted) Devices are bidirectional. All electrical parameters apply to forward and reverse polarities.

Characteristics		Symbol	Min	Typ	Max	Unit
Breakover Voltage (Both polarities)		$V_{(BO)}$				V
(dv/dt = 100 V/μs, I_{SC} = 1.0 A, Vdc = 1000 V)	MMT05B230T3		−	−	265	
	MMT05B260T3		−	−	320	
	MMT05B310T3		−	−	365	
(+65°C)						
	MMT05B230T3		−	−	280	
	MMT05B260T3		−	−	340	
	MMT05B310T3		−	−	400	
Breakover Voltage (Both polarities)		$V_{(BO)}$				V
(f = 60 Hz, I_{SC} = 1.0 A(rms), V_{OC} = 1000 V(rms),	MMT05B230T3		−	−	265	
R_I = 1.0 kΩ, t = 0.5 cycle) (Note 3)	MMT05B260T3		−	−	320	
	MMT05B310T3		−	−	365	
(+65°C)						
	MMT05B230T3		−	−	280	
	MMT05B260T3		−	−	340	
	MMT05B310T3		−	−	400	
Breakover Voltage Temperature Coefficient		$dV_{(BO)}/dT_J$	−	0.08	−	%/°C
Breakdown Voltage ($I_{(BR)}$ = 1.0 mA) Both polarities		$V_{(BR)}$				V
	MMT05B230T3		−	190	−	
	MMT05B260T3		−	240	−	
	MMT05B310T3		−	280	−	
Off State Current (V_{D1} = 50 V) Both polarities		I_{D1}	−	−	2.0	μA
(V_{D2} = V_{DM}) Both polarities		I_{D2}	−	−	5.0	
On−State Voltage (I_T = 1.0 A)		V_T	−	1.53	3.0	V
(PW ≤ 300 μs, Duty Cycle ≤ 2%) (Note 3)						
Breakover Current (f = 60 Hz, V_{DM} = 1000 V(rms), R_S = 1.0 kΩ) − Both polarities		I_{BO}	−	230	−	mA
Holding Current (Both polarities) (Note 3)		I_H	150	340	−	mA
V_S = 500 V; I_T (Initiating Current) = ±1.0 A						
Critical Rate of Rise of Off−State Voltage		dv/dt	2000	−	−	V/μs
(Linear waveform, V_D = Rated V_{BR}, T_J = 25°C)						
Capacitance (f = 1.0 MHz, 50 Vdc, 1.0 V rms Signal)		C_O	−	22	−	pF
(f = 1.0 MHz, 2.0 Vdc, 15 mV rms Signal)			−	53	75	

3. Measured under pulse conditions to reduce heating.

Voltage Current Characteristic of TSPD (Bidirectional Device)

Symbol	Parameter
I_{D1}, I_{D2}	Off State Leakage Current
V_{D1}, V_{D2}	Off State Blocking Voltage
V_{BR}	Breakdown Voltage
V_{BO}	Breakover Voltage
I_{BO}	Breakover Current
I_H	Holding Current
V_{TM}	On State Voltage



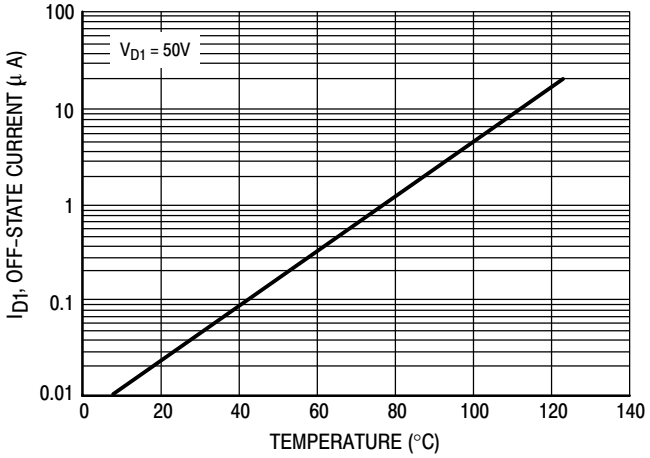


Figure 1. Off−State Current versus Temperature

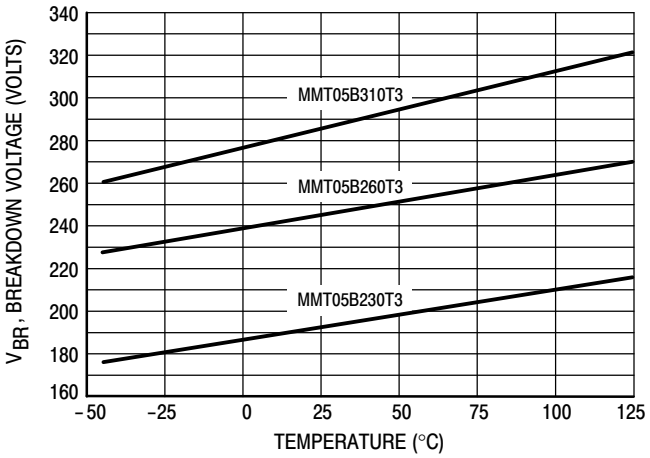


Figure 2. Breakdown Voltage versus Temperature

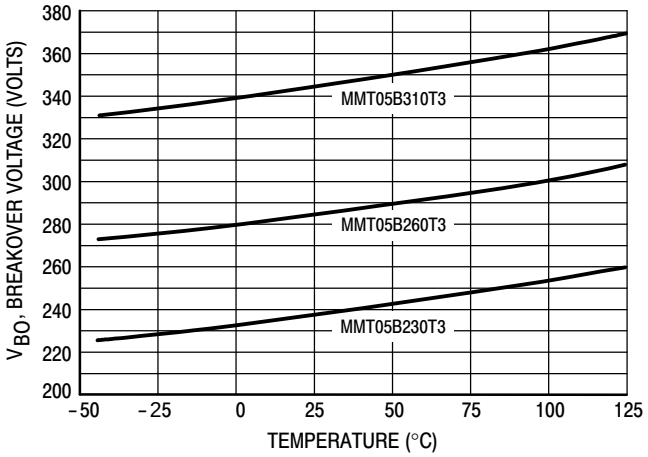


Figure 3. Breakover Voltage versus Temperature

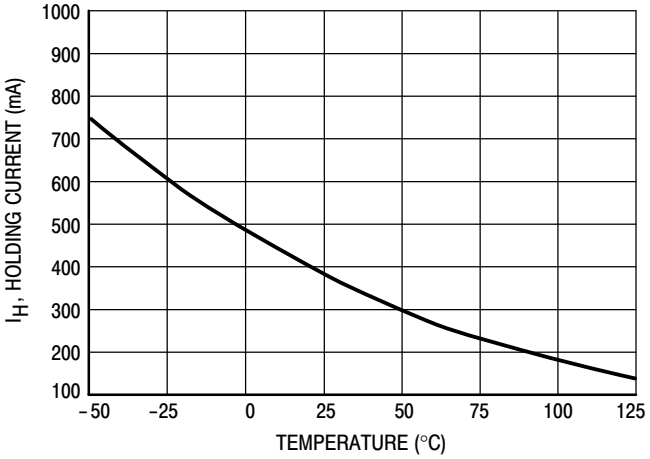


Figure 4. Holding Current versus Temperature

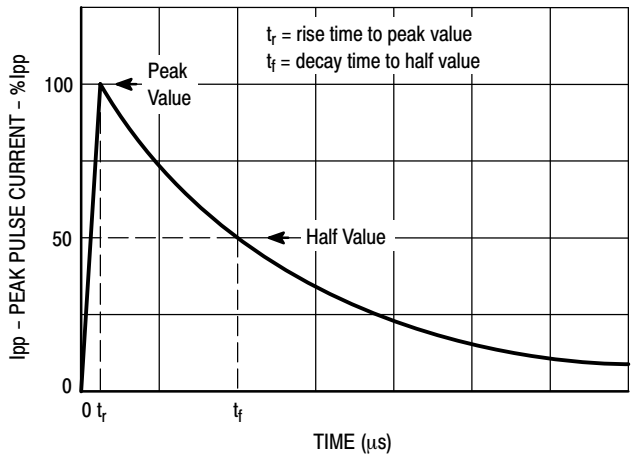


Figure 5. Exponential Decay Pulse Waveform

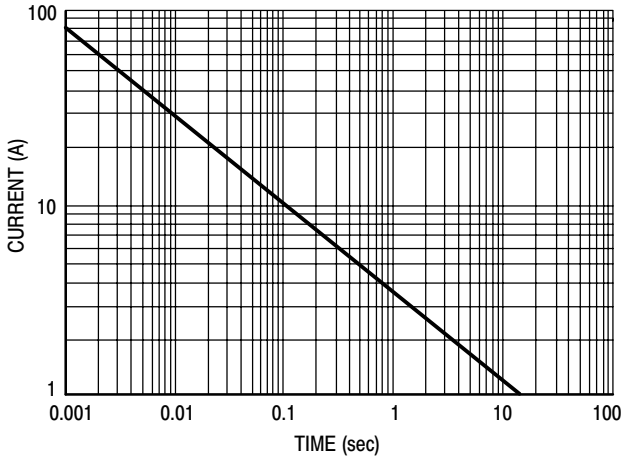
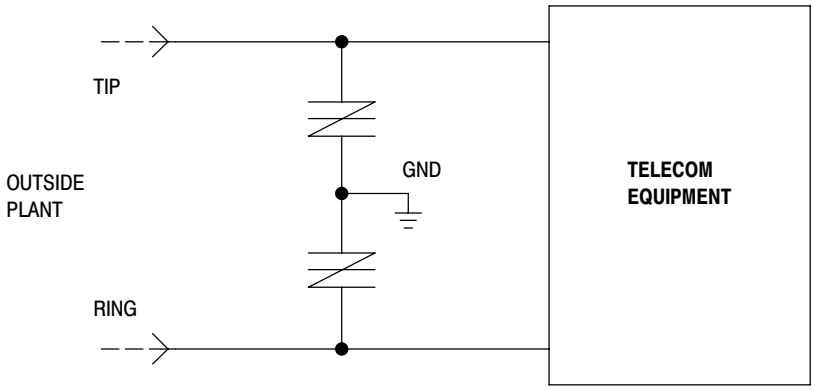
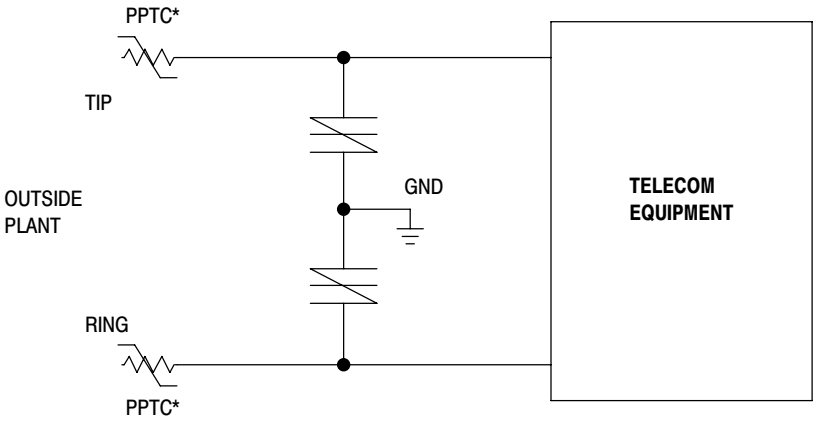
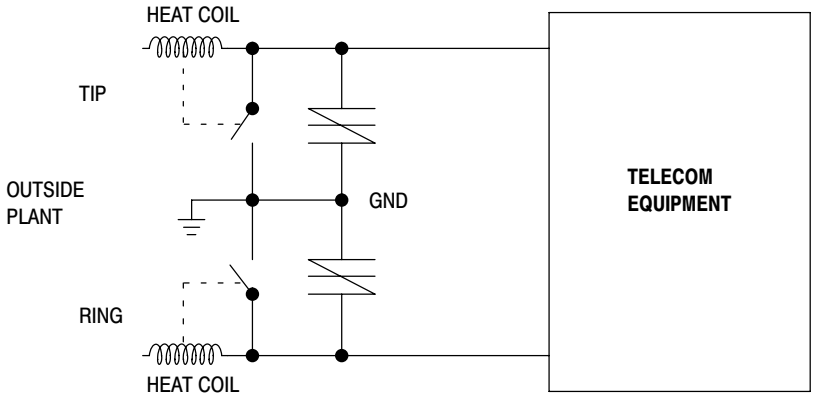


Figure 6. Peak Surge On−State Current versus Surge Current Duration, Sinusoidal Waveform





*Polymeric PTC (positive temperature coefficient) overcurrent protection device



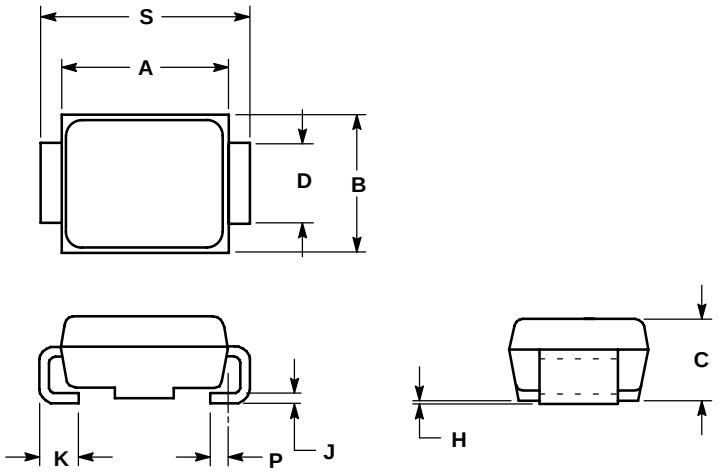
ORDERING INFORMATION

Device	Package	Shipping†
MMT05B230T3	SMB	2500 / Tape & Reel
MMT05B230T3G	SMB (Pb−Free)	
MMT05B260T3	SMB	
MMT05B260T3G	SMB (Pb−Free)	
MMT05B310T3	SMB	
MMT05B310T3G	SMB (Pb−Free)	

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

PACKAGE DIMENSIONS

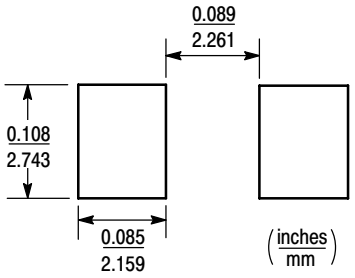
SMB
(No Polarity)
(Essentially JEDEC DO−214AA)
CASE 403C−01
ISSUE A



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.160	0.180	4.06	4.57
B	0.130	0.150	3.30	3.81
C	0.075	0.095	1.90	2.41
D	0.077	0.083	1.96	2.11
H	0.0020	0.0060	0.051	0.152
J	0.006	0.012	0.15	0.30
K	0.030	0.050	0.76	1.27
P	0.020 REF		0.51 REF	
S	0.205	0.220	5.21	5.59

SOLDERING FOOTPRINT*



*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800−282−9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81−3−5773−3850

ON Semiconductor Website: **www.onsemi.com**

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

MMT05B230T3/D

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

onsemi:

MMT05B230T3 MMT05B230T3G MMT05B260T3 MMT05B260T3G MMT05B310T3 MMT05B310T3G