Scottsdale, AZ
Microsemi
Progress Powered by Technology

8700 E. Thomas Road
Scottsdale, AZ 85252
(602) 941-6300

TSPD™ Transients of Protection

TSMBJ0505C thru TSMBJ0527C

Bi-Directional 50 Amp 50-270 Volts Thyristor Surge Protective Device (TSPD)

Features

- Bidirectional Transient Voltage Protection
- Surge Capabilities up to 50 Amps @ 10/1000µs or 200 Amps @ 8/20µs (note 2, 5)
- Initial Breakdown Voltages from 60 to 335 Volts
- Positive Resistance Breakover Voltages from 100 to 440 Volts
- Clamping Speeds of Nanoseconds
- Oxide-Glass Passivated Junctions
- High Off-State Impedance (low leakage) and Low On-State Voltage (crowbar action)
- Encapsulating material meets UL94VO Requirements
- UL497B Recognized/UL File No. E152273
- ISO 9001 Certified

Maximum Ratings

- Operating Temperature: -40°C to + 150°C (note 5)
- Storage Temperature: -65°C to + 150°C
- Repetitive Off-State Voltage (both directions): See Electrical Characteristics for V_{DRM}
- Non-Repetitive Peak Impulse Current (I_{PPS}): 50 A @ 10/1000µs or 200 A @ 8/20µs (note 5)
- Non-Repetitive Peak On-State Current (I_{TSM}) @ 8.3ms (one-half cycle): 30 Amps

Electrical Characteristics @ 25°C Unless otherwise specified

Rated Peak Impulse Current 50 Amps @ 10/1000ms	Rated Repetitive Off-State Voltage (see note 3)	Off-State Leakage Current @V_{DRM}	Breakdown Voltage @ $I_{(BR)}$ = 1mA (see note 4)	Breakover Voltage (see note 1)	On-State Voltage @I_T = 1A (pulsed)	Holding Current		Capacitance (1MHz)	
Part Numbers (see note 6)	V_{DRM} Volts	I_{DRM} mA	$V_{(BR)}$ Volts	$V_{(BO)}$ Volts	V_T Volts	I_H mA	I_H mA	Co @ 0v pF	Co @ 50v pF
	MAX.	MAX.	MIN.	MAX.	MAX.	MIN.	MAX.	MAX.	MAX.
TSMBJ0505C	50	5	60	100	4.0	150	750	200	100
TSMBJ0508C	80	5	70	110	4.0	150	750	200	100
TSMBJ0507C	70	5	85	145	4.0	150	750	200	100
TSMBJ0509C	90	5	115	155	4.0	150	750	200	100
TSMBJ0510C	100	5	125	200	4.0	150	750	200	100
TSMBJ0511C	110	5	135	210	4.0	150	750	200	100
TSMBJ0512C	120	5	150	215	4.0	150	750	200	100
TSMBJ0514C	140	5	175	250	4.0	150	750	200	100
TSMBJ0516C	160	5	190	265	4.0	150	750	200	100
TSMBJ0518C	180	5	220	300	4.0	150	750	200	100
TSMBJ0522C	220	5	275	350	4.0	150	750	200	100
TSMBJ0524C	240	5	300	400	4.0	150	750	200	100
TSMBJ0527C	270	5	335	440	4.0	150	750	200	100

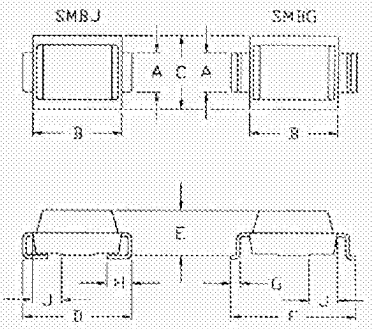
Consult factory for additional voltage and holding current tolerance options.

Notes:

1. For rise times less than 1 kV/ms. For very fast rise times up to 1 kV/µs, $V_{(BO)}$ will be 110% of $V_{(BO)}$ Max. The Max $I_{(BO)}$ is 750mA.
2. Critical rate of rise of on-state current is 100A/µs Max.
3. Maximum rate of rise of off-state voltage V_{DRM} that will not trigger device is 5kV/µs (TJ=70°C).
4. Breakdown voltage $V_{(BR)}$ has a positive temperature coefficient of +0.1%/°C.
5. Above 70°C, derate linearly to zero @ 150°C lead temperature.
6. For different packages or die options replace part number prefix as follows:
   - "TSMBJ" for surface mount DO-214AA with J-bend (as shown)
   - "TSMBG" for surface mount DO-215AA with Gull Wing
   - "TSH" for DO-13 hermetic axial lead metal package
   - "TSF" for T-18 axial lead plastic
   - "TSEP" for Case 1 axial, 0.040" diameter leads
   - "TSES" for Case 2 axial, 0.030" diameter leads
   - "TCD" for cellular die package
   - "TCH" for chip equivalent in hybrid applications

MECHANICAL CHARACTERISTICS

CASE STYLE: SMBJ (DO-214AA) and SMBG (DO-215AA)



	INCHES MIN/MAX	MILLIMETERS MIN/MAX
A	.077/.083	1.96/2.10
B	.160/.180	4.06/4.57
C	.130/.155	3.30/3.94
D	.205/.220	5.21/5.59
E	.075/.095	1.91/2.41
F	.235/.255	5.97/6.48
G	.015/.030	0.38/0.76
H	.035/.060	0.76/1.52
J	.038/.058	0.97/1.47

ADDITIONAL PACKAGE STYLES:
For other package styles contact Microsemi Scottsdale's TSPD Group for detail package dimensions

LEAD FINISH: Solder Dip or Lead Tin Plate

POLARITY: Bi-directional