



**THSMCJ0518C
and
THSMCJ0522C**

**Bi-Directional
50 AMP
Thyristor Surge
Protective Devices
(TSPD)**

FEATURES

- Bidirectional Transient Voltage Protection
- Initial Breakdown Voltage of 220 and 275 volts
- Positive Resistance Breakover Voltages of 300 and 350 volts maximum
- Clamping speeds of nanoseconds
- High Off-State Impedance (low leakage) and low on-state voltage (crowbar action)
- Encapsulating material meets UL94V-O requirements

MAXIMUM RATINGS

- Operating Temperatures: -40°C to +150°C
- 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_{PP}): 50A @ 10/560µs or 150 A @ 8/20µs (see Note 1 for derating)
- Non-Repetitive Peak On-State Current (I_{TSM}): @ 8.3 ms (one-half cycle); 30 Amps (see Figure 5 and Note 1 for derating)

MECHANICAL

- Soldering temperature 260°C (10 sec maximum)
- Weight: .525 grams(approximate)
- Marked with logo and marking code

PACKAGING

- Tape & Reel EIA Standard 481-1-A
- 13 inch reel 2,500 pieces

Electrical Characteristics @ 25°C

| Rated Peak Pulse Current 50Amps @ 10/1000 µs (see note 1) | Product Marking | Rated Repetitive Off-State Voltage | Off-State Leakage Current @ V_{DRM} | Breakdown Voltage @ I_{BR} = 1mA (see note 2) | Breakover Voltage | On-State Voltage @ I_T = 1A (pulsed) | Holding Current | | Capacitance (1 MHz) | |
|--|--------------------|---|--|--|----------------------------|---|--------------------|--------------|----------------------------|-----------------------------|
| | | | | | | | I_H mA | I_H mA | C_o @ 0v pF MAX | C_o @ 50v pF MAX |
| Part Number | Marking | V_{DRM} Volts MAX | I_{DRM} µA MAX | $V_{(BR)}$ Volts MIN | $V_{(BO)}$ Volts MAX | V_T Volts MAX | I_H MIN | I_H MAX | C_o @ 0v pF MAX | C_o @ 50v pF MAX |
| THSMCJ0518C | TH0518C | 180 | 5 | 220 | 300 | 4.0 | 150 | 750 | 200 | 100 |
| THSMCJ0522C | TH0522C | 220 | 5 | 275 | 350 | 4.0 | 150 | 750 | 200 | 100 |

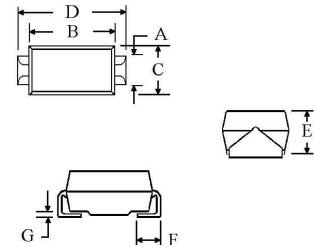
Surge Ratings

| I_{PP} 8x20µs Amps | I_{PP} 10x160µs Amps | I_{PP} 10x560µs Amps |
|----------------------------|------------------------------|------------------------------|
| 150 | 100 | 50 |

NOTES:

1. Above 70°C, derate linearly to zero @ 150°C lead temperature.
2. Breakdown voltage $V_{(BR)}$ has a positive temperature coefficient of + 0.1%/°C.

**MECHANICAL
CHARACTERISTICS**



| | DIMENSIONS | | | |
|---|------------|------|---------|------|
| | INCH | | MM | |
| | MIN | MAX | MIN | MAX |
| A | .165 | .238 | 4.20 | 6.05 |
| B | .239 | .243 | 6.08 | 6.18 |
| C | .234 | .238 | 5.95 | 6.05 |
| D | .309 | .322 | 7.85 | 8.18 |
| E | .202 | .207 | 5.12 | 5.25 |
| F | .047 | .056 | 1.20 | 1.42 |
| G | .010 TYP | | .25 TYP | |

PAD DIMENSIONS

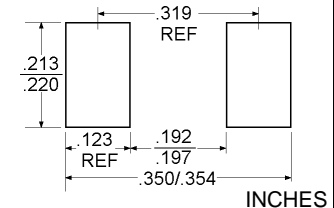


Figure 1
Pulse Wave Form
(10/1000µs)

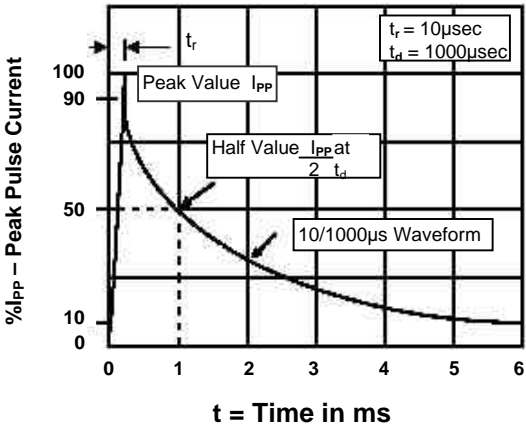


Figure 2
Pulse Wave Form
(8/20µs)

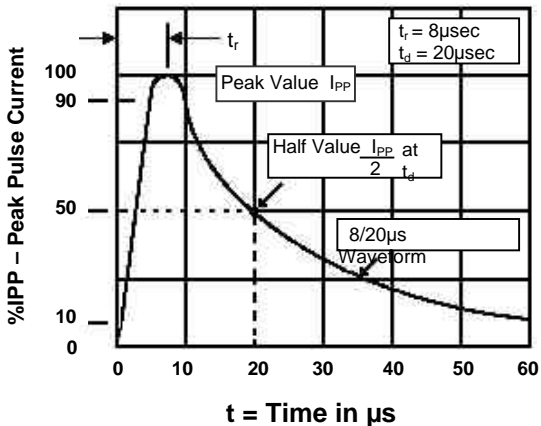


Figure 3
Typical normalized dc Holding Current
vs. Case Temperature

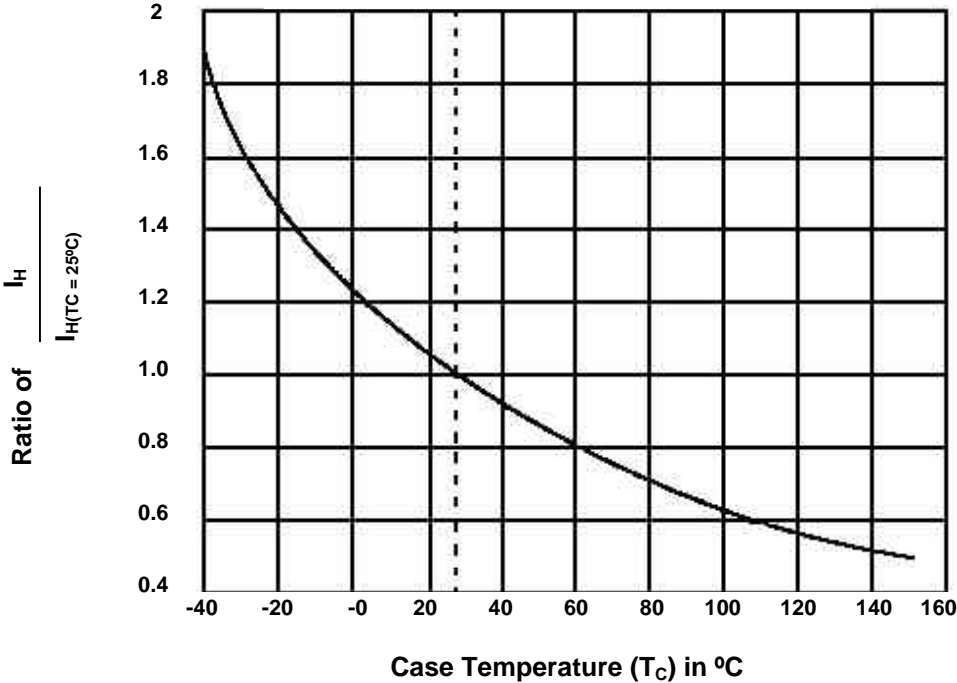


Figure 4
Normalized Off-State Current
vs. Junction Temperature

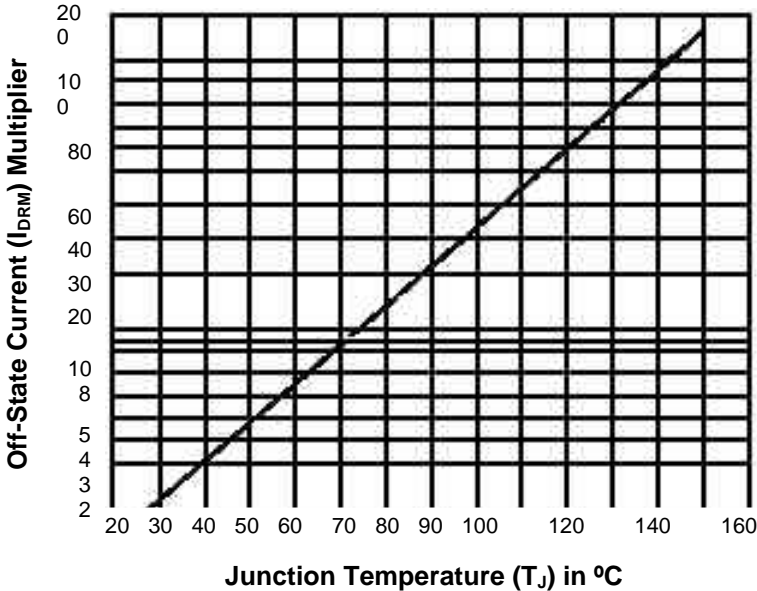


Figure 5
Peak Surge On-State Current vs.
Number of Full Cycles at T_c = 25°C

