

THYRISTOR SURGE PROTECTIVE DEVICE

$V_{DRM}: 58 - 320 V$

$I_{PP}: 100 A$

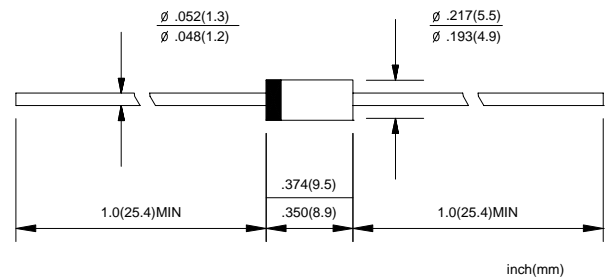
FEATURES

- ◇ Oxide glass passivated junction
- ◇ Bidirectional protection in a single device
- ◇ Surge capabilities up to 50A @10/1000us or 150A @8/20us
- ◇ High off state impedance and low on state voltage
- ◇ Plastic material has U/L flammability classification 94V-0

MECHANICAL DATA

- ◇ Case: JEDEC DO-27 molded plastic
- ◇ Polarity: Denotes none cathode band
- ◇ Weight: 0.041ounce, 1.17 grams

DO - 27



MAXIMUM RATINGS

| CHARACTERISTICS | SYMBOL | VALUE | UNIT |
|---|-----------|--------------|------|
| Non-repetitive peak impulse current @ 10/1000us | I_{PP} | 100 | A |
| Non-repetitive peak on-state current @ 8.3ms (one half cycle) | I_{TSM} | 50 | A |
| Junction temperature range | T_J | -55 --- +150 | °C |
| Storage temperature range | T_{STG} | -55 --- +150 | °C |

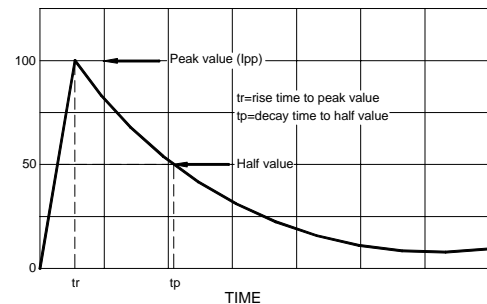
THERMAL RESISTANCE

| CHARACTERISTICS | SYMBOL | VALUE | UNIT |
|--|-----------------|-------|------|
| Junction to leads | $R_{\theta JL}$ | 20 | °C/W |
| Junction to ambient on print circuit (on recommended pad layout) | $R_{\theta JA}$ | 100 | °C/W |
| Typical positive temperature coefficient for brekdown voltage | V_{BR}/T_J | 0.1 | %/°C |

MAXIMUM RATED SURGE WAVEFORM

| WAVEFORM | STANDARD | $I_{PP}(A)$ |
|------------|---------------|-------------|
| 2/10 us | GR-1089-CORE | 500 |
| 8/20 us | IEC 61000-4-5 | 400 |
| 10/160 us | FCC Part 68 | 250 |
| 10/700 us | ITU-T K20/21 | 200 |
| 10/560 us | FCC Part 68 | 160 |
| 10/1000 us | GR-1089-CORE | 100 |

I_{PP} , PEAK PULSE CURRENT (%)



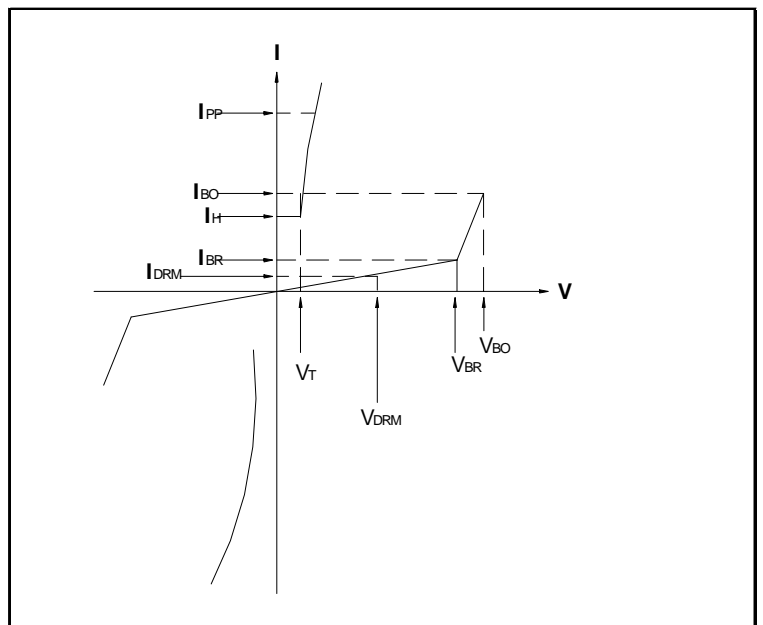
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RATINGS AND CHARACTERISTIC CURVES

P064H --- P350H

| PARAMETER | RATED REPETITIVE OFF-STATE VOLTAGE | OFF-STATE LEAKAGE CURRENT @ V_{DRM} | BREAKOVER VOLTAGE | ON-STATE VOLTAGE @ $I_T=1.0A$ | BREAKOVER CURRENT | | HOLDING CURRENT | | OFF-STATE CAPACITANCE |
|-----------|------------------------------------|---------------------------------------|-------------------|-------------------------------|-------------------|-----------|-----------------|----------|-----------------------|
| | | | | | I_{BO-} | I_{BO+} | I_{H-} | I_{H+} | |
| SYMBOL | V_{DRM} | I_{DRM} | V_{BO} | V_T | I_{BO-} | I_{BO+} | I_{H-} | I_{H+} | C_o |
| UNITS | Volts | μA | Volts | Volts | mA | mA | mA | mA | pF |
| LIMIT | Max | Max | Max | Max | Min | Max | Min | Max | Typ |
| P064H | 58 | 5 | 77 | 3.5 | 50 | 800 | 150 | 800 | 200 |
| P072H | 65 | 5 | 88 | 3.5 | 50 | 800 | 150 | 800 | 200 |
| P090H | 75 | 5 | 98 | 3.5 | 50 | 800 | 150 | 800 | 200 |
| P110H | 90 | 5 | 130 | 3.5 | 50 | 800 | 150 | 800 | 120 |
| P130H | 120 | 5 | 160 | 3.5 | 50 | 800 | 150 | 800 | 120 |
| P150H | 140 | 5 | 180 | 3.5 | 50 | 800 | 150 | 800 | 120 |
| P180H | 160 | 5 | 220 | 3.5 | 50 | 800 | 150 | 800 | 120 |
| P230H | 190 | 5 | 265 | 3.5 | 50 | 800 | 150 | 800 | 80 |
| P260H | 220 | 5 | 300 | 3.5 | 50 | 800 | 150 | 800 | 80 |
| P310H | 275 | 5 | 350 | 3.5 | 50 | 800 | 150 | 800 | 80 |
| P350H | 320 | 5 | 400 | 3.5 | 50 | 800 | 150 | 800 | 80 |

| SYMBOL | PARAMETER |
|-----------|--------------------------------------|
| V_{DRM} | Stand-off voltage |
| I_{DRM} | Leakage current at stand-off voltage |
| V_{BR} | Breakdown voltage |
| I_{BR} | Breakdown current |
| V_{BO} | Breakover voltage |
| I_{BO} | Breakover current |
| I_H | Holding current Note:1 |
| V_T | On state voltage |
| I_{PP} | Peak pulse current |
| C_O | Off state capacitance Note:2 |



NOTES: 1. $I_H > (V_L/R_L)$ if this criterion is not obeyed, the T_{SPD} triggers but does not return correctly to high-resistance state. The surge recovery time does not exceed 30ms.
 2. Off-state capacitance measured at $f=1.0MHz$; $1.0V_{RMS}$ signal; $V_R=2V_{DC}$ bias.

FIG.1 – OFF STATE CURRENT vs JUNCTION TEMPERATURE

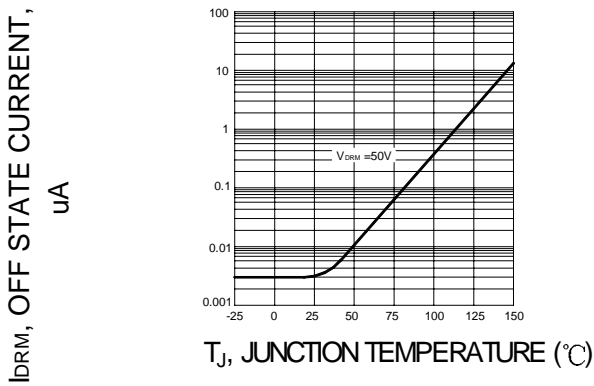


FIG.2- RELATIVE VARIATION OF BREAKDOWN VOLTAGE vs JUNCTION TEMPERATURE

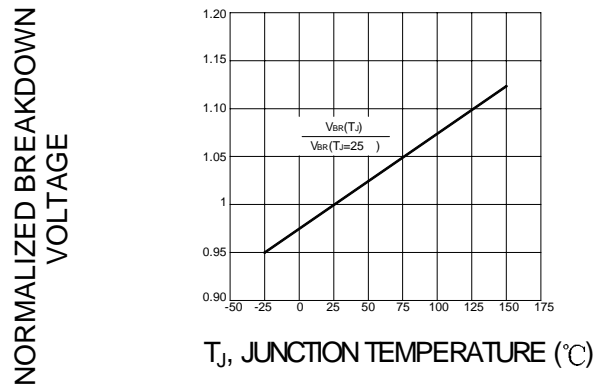


FIG.3 – RELATIVE VARIATION OF BREAKOVER VOLTAGE vs JUNCTION TEMPERATURE

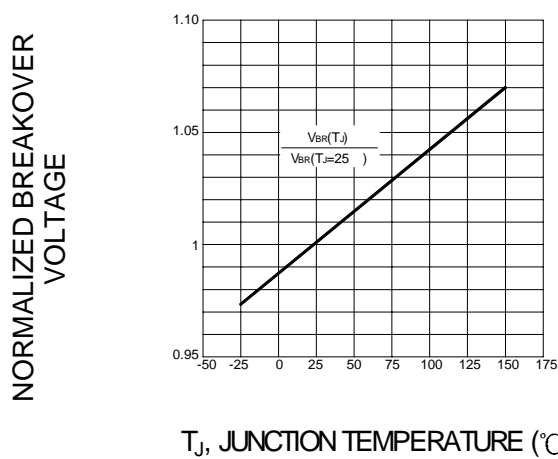


FIG.4 – ON STATE CURRENT vs ON STATE VOLTAGE

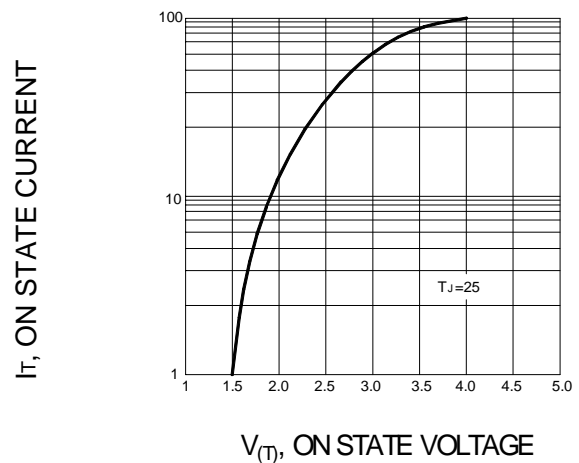


FIG.5 – RELATIVE VARIATION OF HOLDING CURRENT vs JUNCTION TEMPERATURE

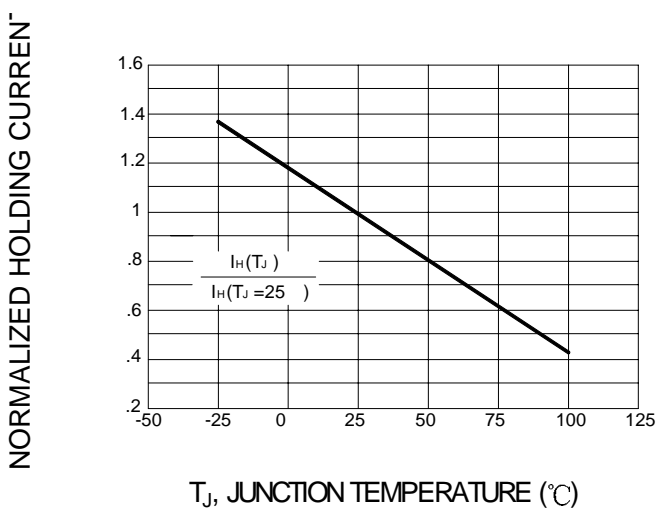
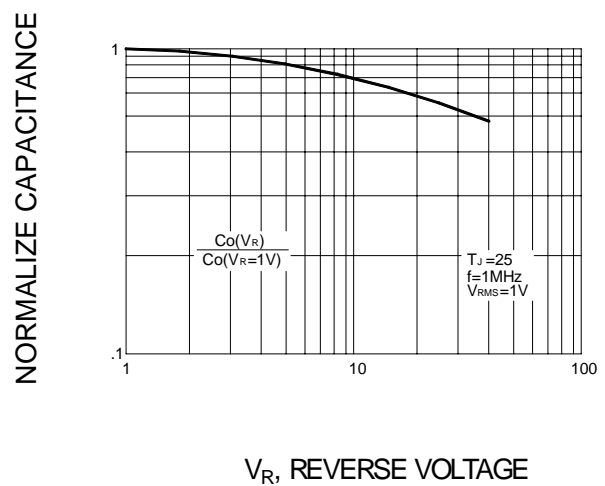
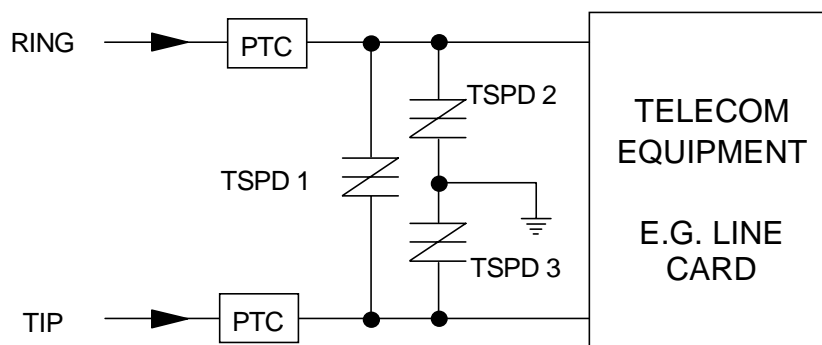
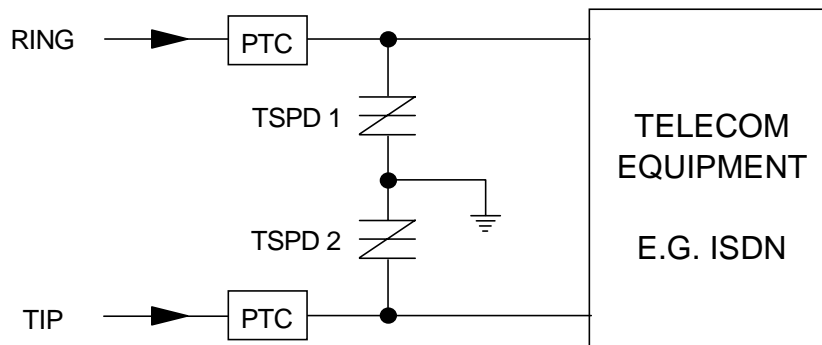
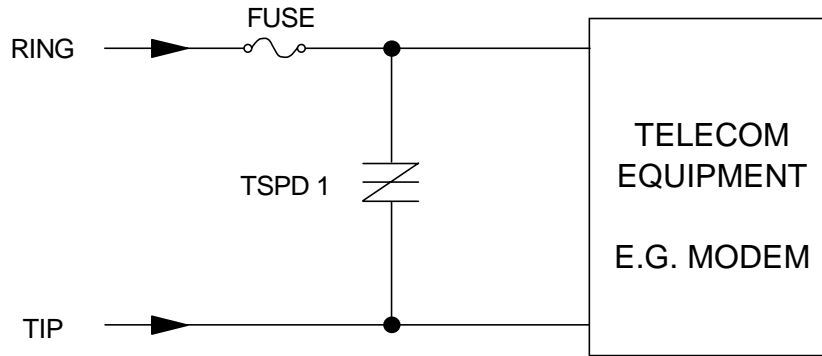


FIG.6 – RELATIVE VARIATION OF JUNCTION CAPACITANCE vs REVERSE VOLTAGE BIAS





The PTC (Positive Temperature Coefficient) is an overcurrent protection device