

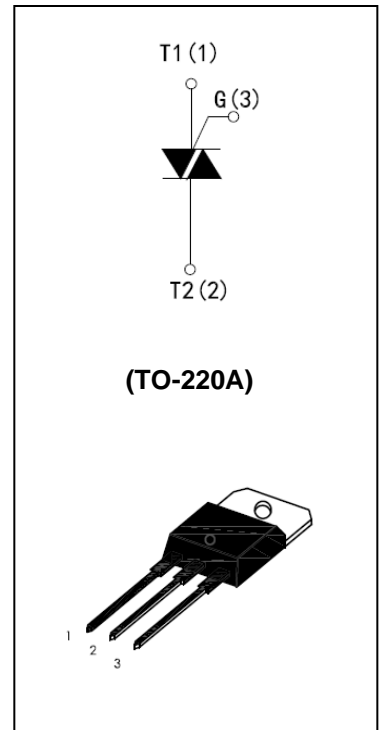


High current density due to double mesa technology; SIPOS and Glass Passivation. IPT0408-xx series are suitable for general purpose AC Switching.

They can be used as an ON/OFF function In application such as static relays, heating regulation, Induction motor stator circuits... or for phase Control operation light dimmers, motor speed Controllers.

IPT0408-xx series is 3 Quadrants triacs, This is specially recommended for use on inductive Loads..

The TO-220A series are 2500V RMS insulating voltage.



MAIN FEATURES

| Symbol | Value | Unit |
|-------------|---------|------|
| IT(RMS) | 4 | A |
| VDRM / VRRM | 800 | V |
| IGT | 5 to 35 | mA |

ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|---|--------------|-------------|------|
| Storage Junction Temperature Range | Tstg | -40 to +150 | °C |
| Operating Junction Temperature Range | Tj | -40 to +125 | °C |
| Repetitive Peak Off-state Voltage Repetitive Peak Reverse Voltage | VDRM VRRM | 800 800 | V |
| Non Repetitive Peak Off-state Voltage Non Repetitive Peak Reverse Voltage | VDSM VRSM | 900 900 | V |
| RMS on-state current (Full sine wave) | IT(RMS) | 4 | A |
| Non repetitive surge peak on-state Current (full cycle, Tj = 25 °C) | ITSM | 38 35 | A |
| I²t Value for fusing | I²t | 6 | A²s |
| Critical Rate of rise of on-state current IG = 2xIGT, tr ≤ 100ns, f = 120Hz, Tj = 125 °C | dl / dt | 50 | A/us |
| Peak gate current | IGM | 4 | A |
| Average gate power dissipation | PG(AV) | 1 | W |

ELECTRICAL CHARACTERISTICS (T_j = 25 °C unless otherwise specified)

| Symbol | Test Condition | Quadrant | | IPT0408-xxA | | | Unit |
|----------------------|--|--------------|-----|-------------|-----|-----|------|
| | | | | 05 | 10 | 35 | |
| I _{GT} | V _D = 12V R _L = 33Ω | I – II – III | MAX | 5 | 10 | 35 | mA |
| V _{GT} | | I – II – III | MAX | 1.3 | | | V |
| V _{GD} | V _D =V _{DRM} , R _L =3.3KΩ, T _j = 125 °C | I – II – III | MIN | 0.2 | | | V |
| I _L | I _G = 1.2 I _{GT} | I – III | MAX | 10 | 25 | 50 | mA |
| | | II | | 15 | 30 | 60 | |
| I _H | I _T = 500mA | | MAX | 10 | 15 | 35 | mA |
| dV/dt | V _D = 67% V _{DRM} gate open T _j = 125 °C | | MIN | 20 | 40 | 400 | V/us |
| (di/dt) _c | (dV/dt) c=0.1V/us T _j = 125 °C | | MIN | 1.8 | 2.7 | - | A/ms |
| | (dV/dt) c=10V/us T _j = 125 °C | | | 0.9 | 2.0 | - | |
| | Without snubber T _j = 125 °C | | | - | - | 2.5 | |

STATIC CHARACTERISTICS

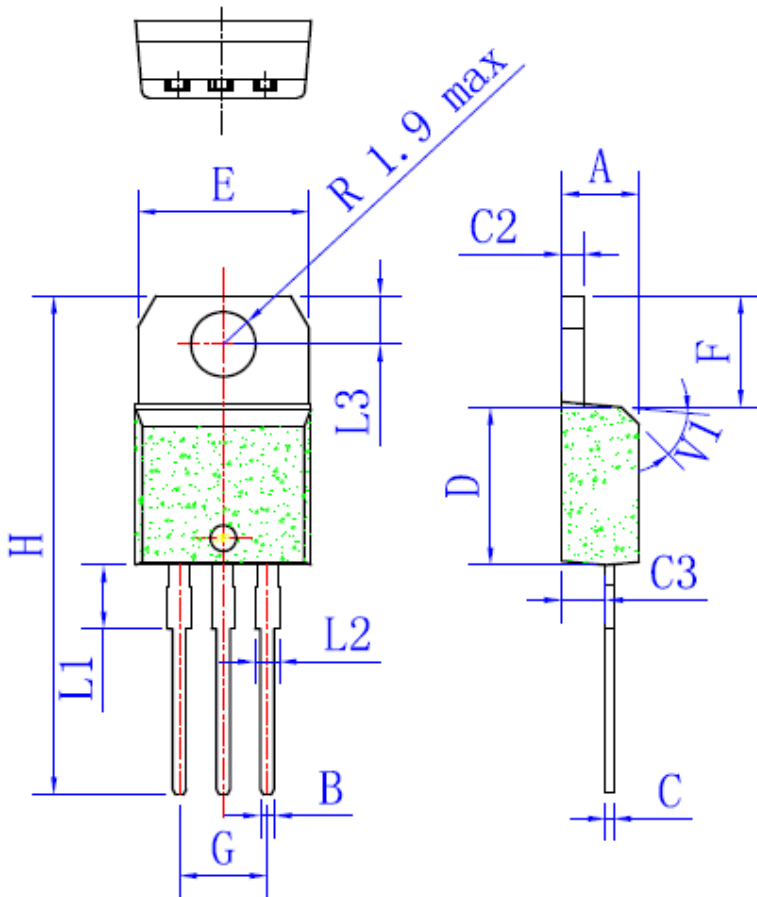
| Symbol | Test Conditions | | Value (MAX) | Unit |
|------------------|--|-------------------------|-------------|------|
| V _{TM} | I _{TM} = 5.5A, t _p = 380uS | T _j = 25 °C | 1.6 | V |
| I _{DRM} | V _D = V _{DRM} | T _j = 25 °C | 5 | uA |
| I _{RRM} | V _R = V _{RRM} | T _j = 125 °C | 1 | mA |

THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|----------------------|-----------------------|-------|------|
| R _{th(j-c)} | Junction to case (AC) | 4.0 | °C/W |

PACKAGE MECHANICAL DATA

TO-220A



| | Millimeters | | |
|----|-------------|------|------|
| | Min | Typ | Max |
| A | 4.4 | | 4.6 |
| B | 0.61 | | 0.88 |
| C | 0.46 | | 0.70 |
| C2 | 1.23 | | 1.32 |
| C3 | 2.4 | | 2.72 |
| D | 8.6 | | 9.7 |
| E | 9.8 | | 10.4 |
| F | 6.2 | | 6.6 |
| G | 4.8 | | 5.4 |
| H | 28 | | 29.8 |
| L1 | | 3.75 | |
| L2 | 1.14 | | 1.7 |
| L3 | 2.65 | | 2.95 |
| V | | 40° | |

FIG.1: Maximum power dissipation versus RMS on-state current(full cycle)

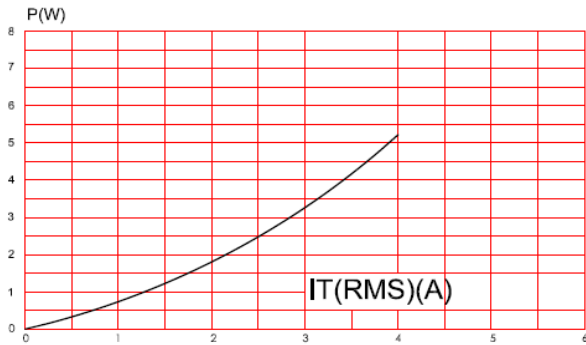


FIG.2: RMS on-state current versus case temperature(full cycle)

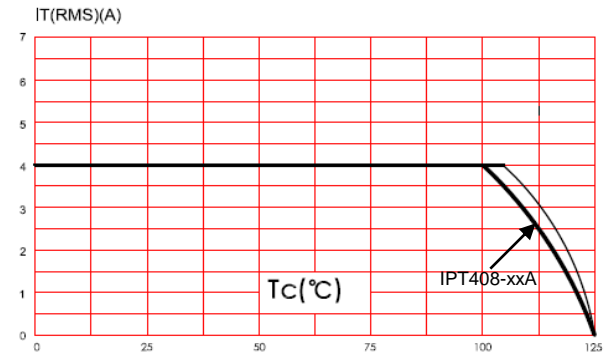


FIG.3: On-state characteristics (maximum values)

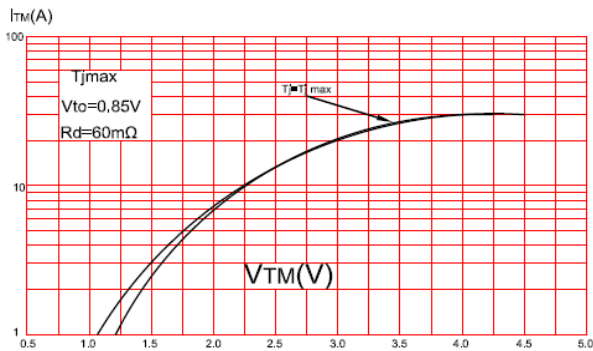


FIG.4: Surge peak on-state current versus number of cycles

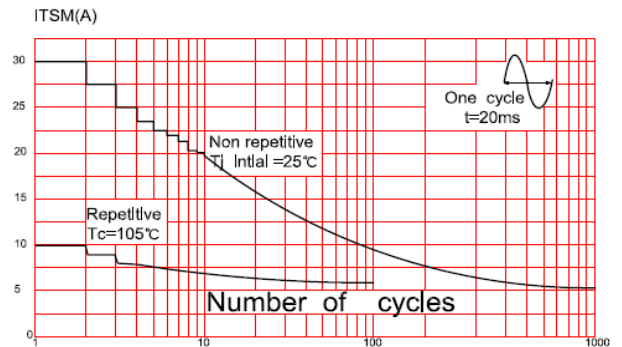


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$.

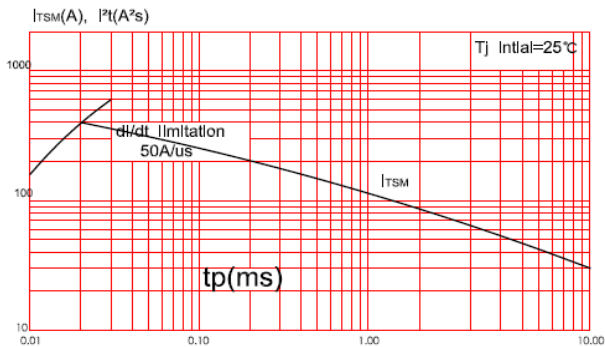


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature(typical values)

