LITE-ON SEMICONDUCTOR

# STPR1010CT thru 1020CT

**SUPER FAST**
**GLASS PASSIVATED RECTIFIERS**

REVERSE VOLTAGE - **100** to **200** Volts
FORWARD CURRENT - **10** Amperes

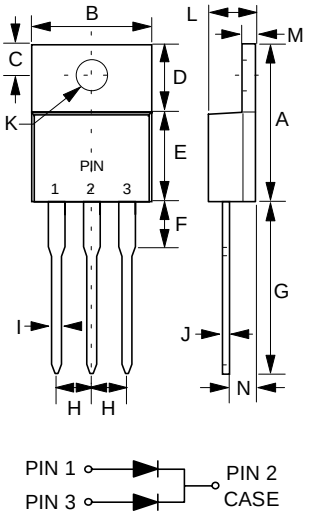
## FEATURES

- Glass passivated chip
- Superfast switching time for high efficiency
- Low forward voltage drop and high current capability
- Low reverse leakage current
- High surge capacity
- Plastic package has UL flammability classification 94V-0

## MECHANICAL DATA

- Case : TO-220AB molded plastic
- Polarity : As marked on the body
- Weight : 0.08 ounces, 2.24 grams
- Mounting position : Any

## TO-220AB




| TO-220AB | | |
|---|---|---|
| DIM. | MIN. | MAX. |
| A | 14.22 | 15.88 |
| B | 9.65 | 10.67 |
| C | 2.54 | 3.43 |
| D | 5.84 | 6.86 |
| E | 8.26 | 9.28 |
| F | - | 6.35 |
| G | 12.70 | 14.73 |
| H | 2.29 | 2.79 |
| I | 0.51 | 1.14 |
| J | 0.30 | 0.64 |
| K | 3.53 ∅ | 4.09 ∅ |
| L | 3.56 | 4.83 |
| M | 1.14 | 1.40 |
| N | 2.03 | 2.92 |
| All Dimensions in millimeter | | |

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%

| CHARACTERISTICS | SYMBOL | STPR1010CT | STPR1020CT | UNIT |
|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | $V_{RRM}$ | 100 | 200 | V |
| Maximum RMS Voltage | $V_{RMS}$ | 70 | 140 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 100 | 200 | V |
| Maximum Average Forward Rectified Current @$T_C$=125˚C | $I_{(AV)}$ | 10 | | A |
| Non Repetitive Peak Forward Surge Current Per Diode Sinusoidal (JEDEC Method) $T_P$=10ms<br>$T_P$=8.3ms | $I_{FSM}$ | 50<br>55 | | A |
| Maximum forward Voltage Pulse Width =300us Duty cycle $I_F$=5A@$T_J$=25℃<br>$I_F$=5A@$T_J$=125℃<br>$I_F$=10A@$T_J$=25℃<br>$I_F$=10A@$T_J$=125℃ | $V_F$ | 0.975<br>0.925<br>1.25<br>1.20 | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage @$T_J$=25˚C<br>@$T_J$=100˚C | $I_R$ | 5<br>100 | | uA |
| Typical Junction Capacitance per element (Note 1) | $C_J$ | 80 | | pF |
| Maximum Reverse Recovery Time (Note 2) | $T_{RR}$ | 30 | | ns |
| Typical Thermal Resistance | $R_{\theta JC}$ | 4.0 | | ˚C/W |
| Operating and Storage Temperature Range | $T_J$ ,$T_{STG}$ | -55 to +150 | | ˚C |

NOTES : 1.Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
2.Reverse Recovery Test Conditions:$I_F$=0.5A,$I_R$=1.0A,$I_{RR}$ 0.25A.

REV. 4, 13-Sep-2001, KTGC04

FIG.1 - FORWARD CURRENT DERATING CURVE

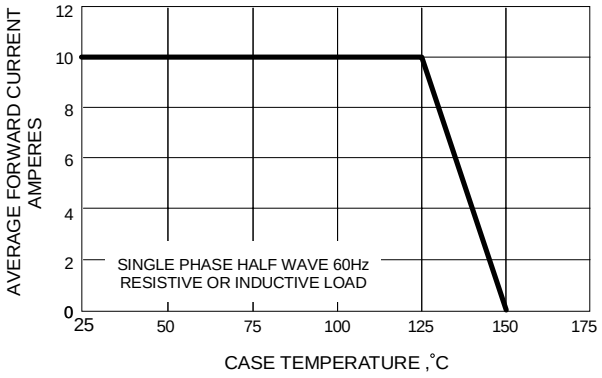



FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

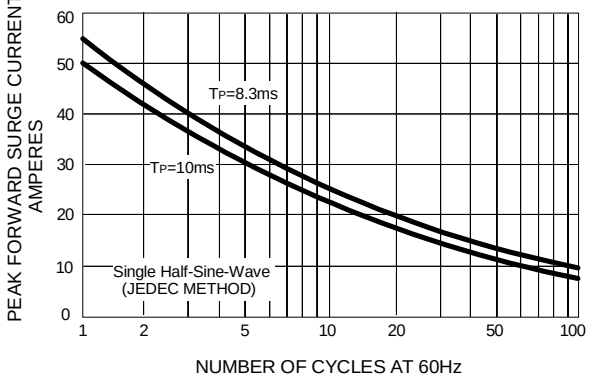



FIG.3 - TYPICAL REVERSE CHARACTERISTICS

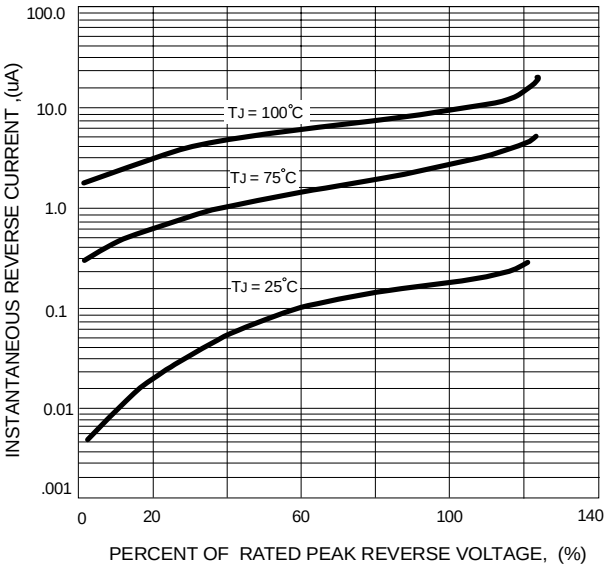



FIG.4 - TYPICAL FORWARD CHARACTERISTICS

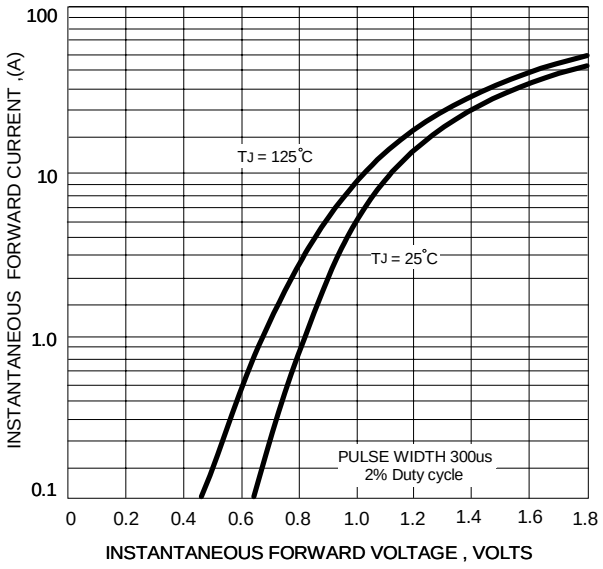



FIG.5 - TYPICAL JUNCTION CAPACITANCE