

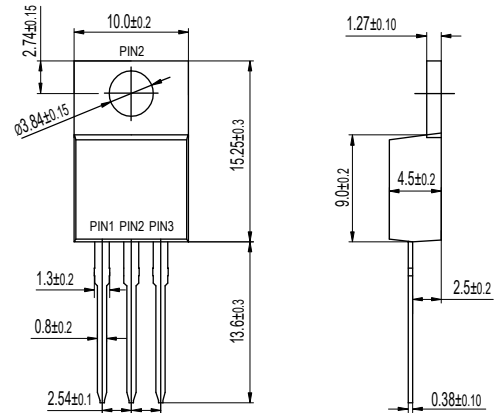
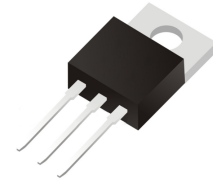
**VOLTAGE RANGE: 45V**  
**CURRENT: 30A**

### Features

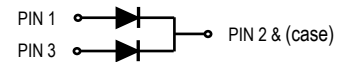
- Ultra low vf
- High efficiency operation
- Low power loss
- Low stored charge majority carrier conduction
- High forward surge capability
- Lead free in compliance with EU RoHS 2011/65/EU directive

### Mechanical Data

- Circuit figure: Common cathode
- Leads: Solderable per mil-std-202, Method 208
- Polarity: as marked
- Mounting torque: 5 in-lbs maximum
- Terminals: Puretin plated
- Weight: TO-220AB 1.85 grams



TO-220AB



### Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise specified

| RATINGS  | SYMBOL            | STPS3045CT  | UNIT |
|--|-------------------|-------------|------|
| Maximum repetitive reverse voltage   | VRRM              | 45          | V    |
| Maximum RMS voltage  | VRMS              | 31.5        | V    |
| Maximum DC blocking voltage  | VDC               | 45          | V    |
| Maximum average forward current<br>per device<br>per diode                         | I <sub>AV</sub>   | 30<br>15    | A    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>  | 300         | A    |
| Typical thermal resistance per diode (Note 1)                                      | R <sub>θ-JC</sub> | 4.5         | °C/W |
| Operating junction temperature range   | T <sub>J</sub>    | -55 to +150 | °C   |
| Storage temperature range  | T <sub>STG</sub>  | -55 to +150 | °C   |

Notes: 1. Thermal resistance from junction to case.



**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise specified

| PARAMETER                               | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---|--------|-----------------|------|------|------|------|
| Breakdown voltage per diode             | VBR    | IR=0.5mA        | 45   | -    | -    | V    |
| Instantaneous forward voltage per diode | VF     | IF=15A TJ=25°C  | -    | -    | 0.52 | V    |
|   |        | IF=15A TJ=125°C | -    | -    | 0.48 | V    |
| Reverse current per diode               | IR     | TJ=25°C         | -    | -    | 200  | uA   |
|   |        | TJ=125°C        | -    | -    | 100  | mA   |

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

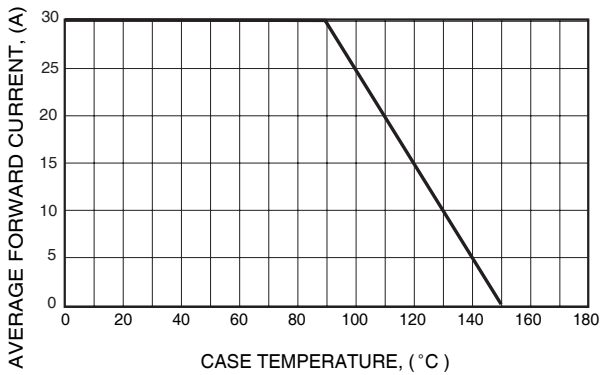


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

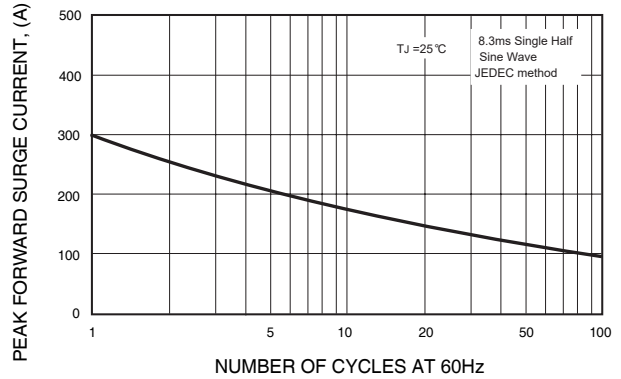


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

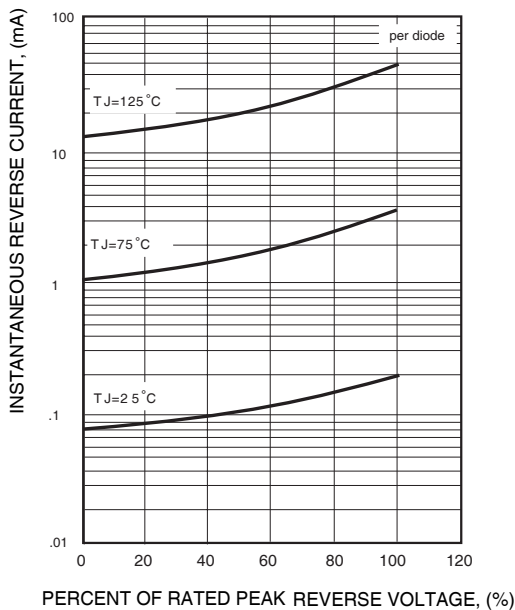


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

