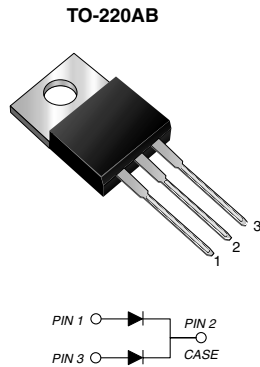


## Dual Common-Cathode Ultrafast Plastic Rectifier



### FEATURES

- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling diodes, dc-to-dc converters, and other power switching application.

### PRIMARY CHARACTERISTICS

|                    |               |
|--------------------|---------------|
| $I_{F(AV)}$        | 16 A          |
| $V_{RRM}$          | 50 V to 200 V |
| $I_{FSM}$          | 125 A         |
| $t_{rr}$           | 35 ns         |
| $V_F$              | 0.895 V       |
| $T_J \text{ max.}$ | 150 °C        |

### MECHANICAL DATA

**Case:** TO-220AB

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

**Polarity:** As marked

### MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

| PARAMETER  | SYMBOL         | GI2401        | GI2402 | GI2403 | GI2404 | UNIT |
|--|----------------|---------------|--------|--------|--------|------|
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 50            | 100    | 150    | 200    | V    |
| Maximum RMS voltage  | $V_{RMS}$      | 35            | 70     | 105    | 140    | V    |
| Maximum DC blocking voltage  | $V_{DC}$       | 50            | 100    | 150    | 200    | V    |
| Maximum average forward rectified current at $T_C = 100\text{ °C}$                           | $I_{F(AV)}$    | 16            |        |        |        | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$      | 125           |        |        |        | A    |
| Operating junction and storage temperature range   | $T_J, T_{STG}$ | - 65 to + 150 |        |        |        | °C   |

| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |   |                         |                |        |        |        |      |
|--|---|-------------------------|----------------|--------|--------|--------|------|
| PARAMETER  | TEST CONDITIONS   | SYMBOL                  | GI2401         | GI2402 | GI2403 | GI2404 | UNIT |
| Maximum instantaneous forward voltage per diode                            | I <sub>F</sub> = 4 A  | T <sub>J</sub> = 25 °C  | V <sub>F</sub> | 0.900  |        |        | V    |
|  | I <sub>F</sub> = 8 A  | T <sub>J</sub> = 25 °C  |                | 0.975  |        |        |      |
|  | I <sub>F</sub> = 4 A  | T <sub>J</sub> = 100 °C |                | 0.800  |        |        |      |
|  | I <sub>F</sub> = 8 A  | T <sub>J</sub> = 100 °C |                | 0.895  |        |        |      |
| Maximum DC reverse current at rated DC blocking voltage per diode          |   | T <sub>C</sub> = 25 °C  | I <sub>R</sub> | 50     |        | 5.0    | μA   |
|  |   | T <sub>C</sub> = 100 °C |                | 150    |        |        |      |
| Maximum reverse recovery time per diode                                    | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25A | t <sub>rr</sub>         | 35             |        |        |        | ns   |
| Typical junction capacitance per diode                                     | 4.0 V, 1 MHz  | C <sub>J</sub>          | 85             |        |        |        | pF   |

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                  |        |        |        |        |      |
|---|------------------|--------|--------|--------|--------|------|
| PARAMETER   | SYMBOL           | GI2401 | GI2402 | GI2403 | GI2404 | UNIT |
| Typical thermal resistance per diode <sup>(1)</sup>                     | R <sub>θJA</sub> | 16     |        |        |        | °C/W |
|   | R <sub>θJC</sub> | 2.2    |        |        |        |      |

**Note:**

(1) Thermal resistance from junction to ambient and from junction to case per leg mounted on heatsink

| ORDERING INFORMATION (Example) |                             |                 |              |               |               |
|--------------------------------|-----------------------------|-----------------|--------------|---------------|---------------|
| PACKAGE                        | PREFERRED P/N               | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB                       | GI2401-E3/45                | 1.85            | 45           | 50/tube       | Tube          |
| TO-220AB                       | GI2401HE3/45 <sup>(1)</sup> | 1.85            | 45           | 50/tube       | Tube          |

**Note:**

(1) Automotive grade AEC Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

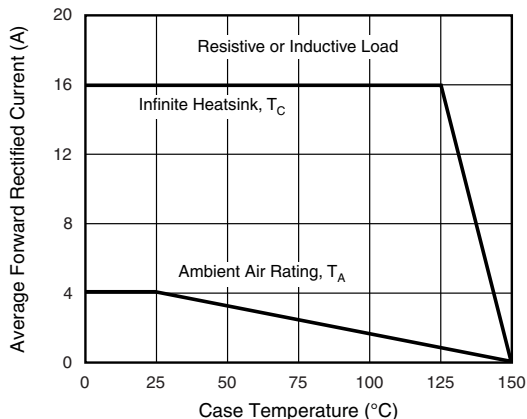


Figure 1. Maximum Forward Current Derating Curve

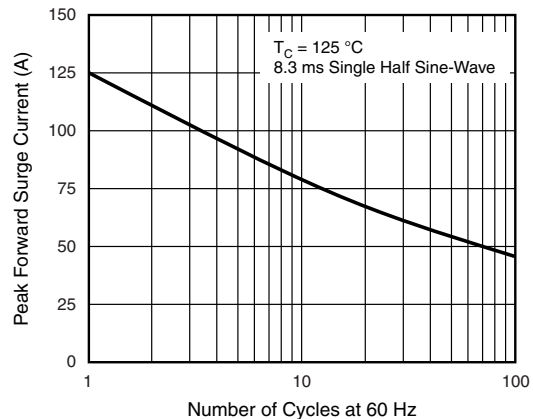


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

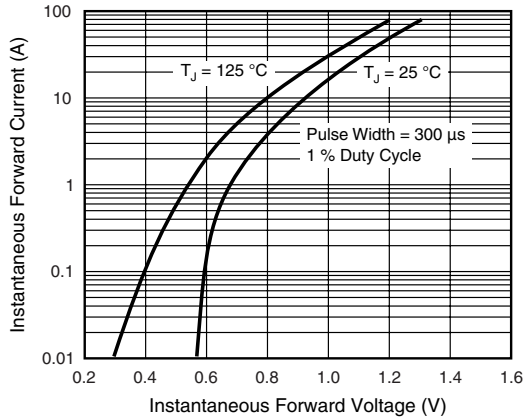


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

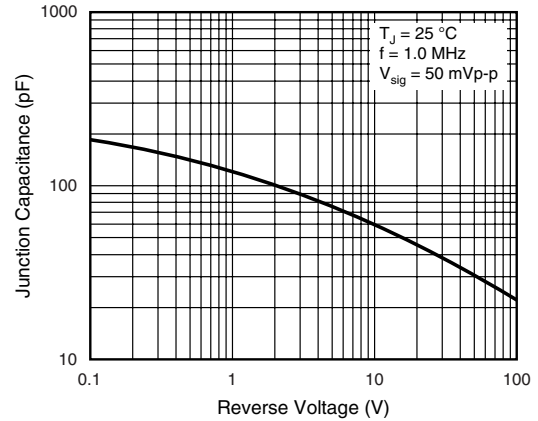


Figure 5. Typical Junction Capacitance Per Diode

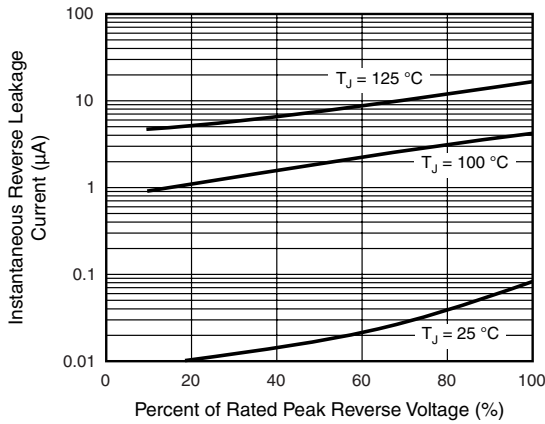
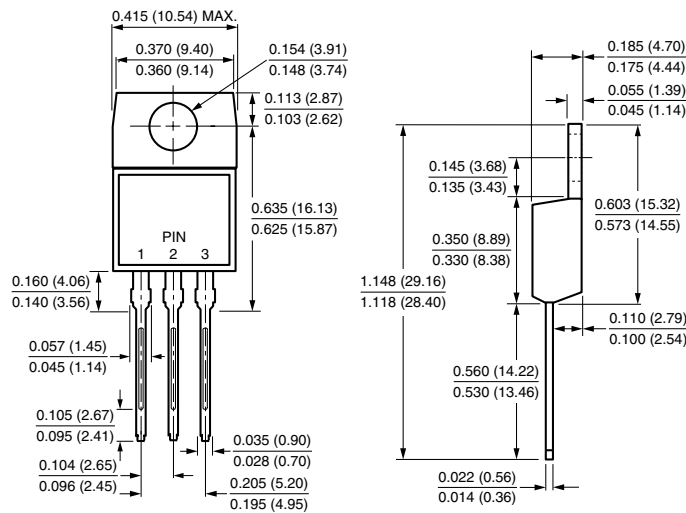


Figure 4. Typical Reverse Leakage Characteristics Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-220AB





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