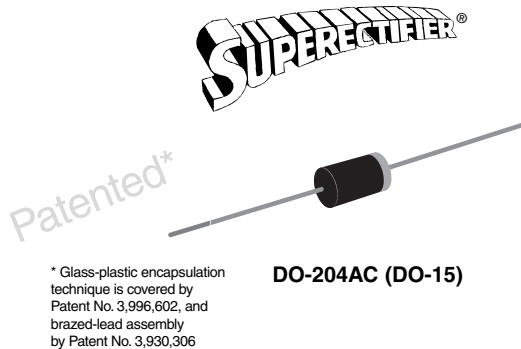



Glass Passivated Junction Rectifier



FEATURES

- Superelectifier structure for High Reliability application 
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current, I_R less than $0.1 \mu A$
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip $260^\circ C$, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for both consumer and automotive applications.

MECHANICAL DATA

Case: DO-204AC, molded epoxy over glass body

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

MAJOR RATINGS AND CHARACTERISTICS

| | |
|--------------------|----------------|
| $I_{F(AV)}$ | 1.5 A |
| V_{RRM} | 50 V to 1000 V |
| I_{FSM} | 50 A |
| I_R | $5.0 \mu A$ |
| V_F | 1.1 V |
| $T_j \text{ max.}$ | $175^\circ C$ |

MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise noted)

| PARAMETER | SYMBOL | GP15A | GP15B | GP15D | GP15G | GP15J | GP15K | GP15M | UNIT |
|---|----------------|---------------|-------|-------|-------|-------|-------|-------|------------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55^\circ C$ | $I_{F(AV)}$ | 1.5 | | | | | | | A |
| Peak forward surge current 8.3 ms single half-sine wave superimposed on rated load | I_{FSM} | 50 | | | | | | | A |
| Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 55^\circ C$ | $I_{R(AV)}$ | 100 | | | | | | | μA |
| Operating junction and storage temperature range | T_j, T_{STG} | - 65 to + 175 | | | | | | | $^\circ C$ |

| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|--|---|----------|-------|-------|-------|------------|-------|-------|-------|---------------|
| PARAMETER | TEST CONDITIONS | SYMBOL | GP15A | GP15B | GP15D | GP15G | GP15J | GP15K | GP15M | UNIT |
| Maximum instantaneous forward voltage | at 1.5 A | V_F | | | | 1.1 | | | | V |
| Maximum reverse current at rated DC blocking voltage | $T_A = 25\text{ }^\circ\text{C}$ $T_A = 150\text{ }^\circ\text{C}$ | I_R | | | | 5.0 200 | | | | μA |
| Typical reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ V}$, $I_{rr} = 0.25\text{ A}$ | t_{rr} | | | | 3.5 | | | | μs |
| Typical junction capacitance | at 4.0 V, 1 MHz | C_J | | | | 15 | | | | pF |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|---|------------------------------------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|
| PARAMETER | SYMBOL | GP15A | GP15B | GP15D | GP15G | GP15J | GP15K | GP15M | UNIT | |
| Typical thermal resistance ⁽¹⁾ | $R_{\theta JA}$ $R_{\theta JL}$ | | | | 45 20 | | | | $^\circ\text{C/W}$ | |

Note:

(1) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, P.C.B. mounted

| ORDERING INFORMATION | | | | |
|-----------------------------|-----------------|------------------------|---------------|--------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GP15J-E3/54 | 0.425 | 54 | 4000 | 13" Diameter Paper Tape & Reel |
| GP15J-E3/73 | 0.425 | 73 | 2000 | Ammo Pack Packaging |

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

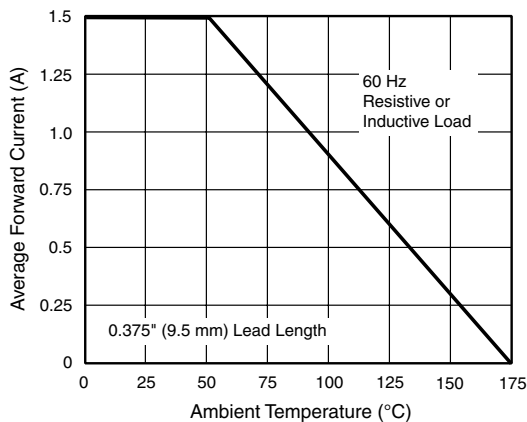


Figure 1. Forward Current Derating Curve

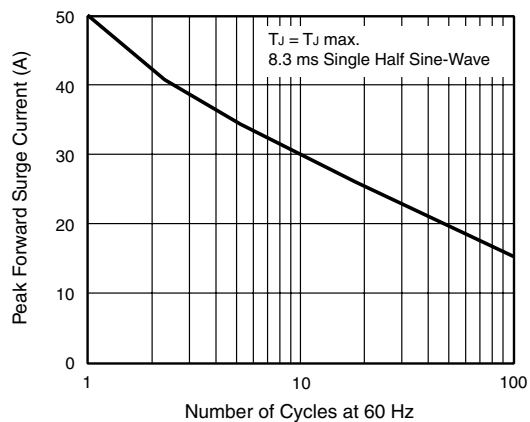


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

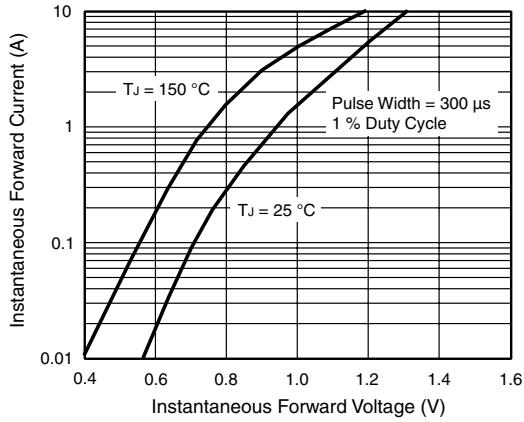


Figure 3. Typical Instantaneous Forward Characteristics

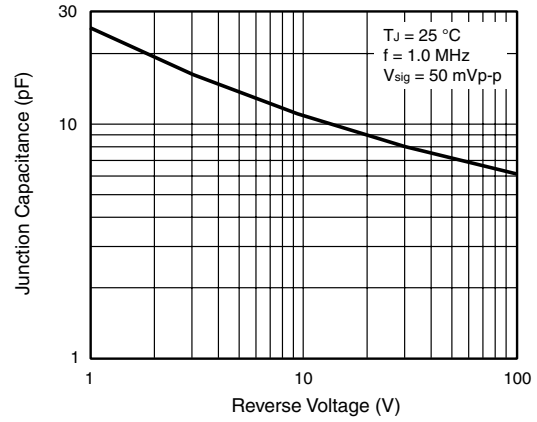


Figure 5. Typical Junction Capacitance

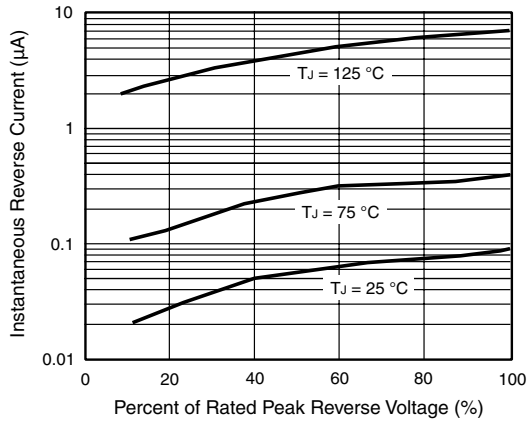


Figure 4. Typical Reverse Characteristics

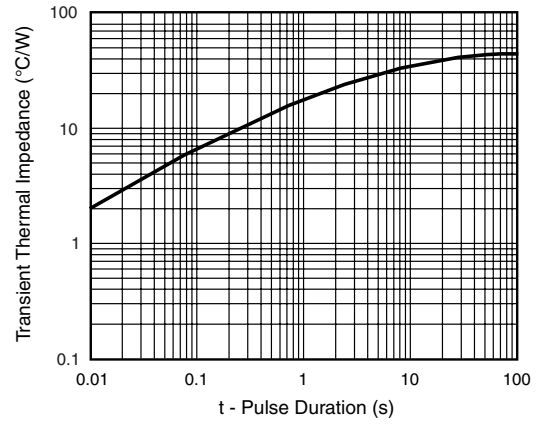
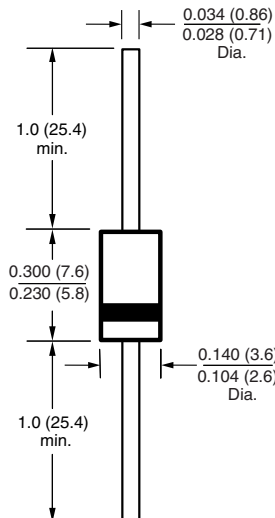


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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