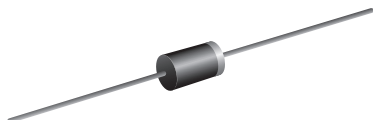


Ultrafast Plastic Rectifier



DO-204AC (DO-15)

FEATURES

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

MECHANICAL DATA

Case: DO-204AC (DO-15)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

| PRIMARY CHARACTERISTICS | |
|-------------------------|--------------|
| $I_{F(AV)}$ | 2.0 A |
| V_{RRM} | 300 V, 400 V |
| I_{FSM} | 50 A |
| t_{rr} | 35 ns |
| V_F at $I_F = 2.0$ A | 0.910 V |
| T_J max. | 150 °C |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | |
|--|----------------|---------------|------|------|
| PARAMETER | SYMBOL | UG2F | UG2G | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 300 | 400 | V |
| Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1) | $I_{F(AV)}$ | 2.0 | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 50 | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | - 55 to + 150 | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted) | | | | | | |
|--|--|----------------|-----------|-------|------|---------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT |
| Instantaneous forward voltage | $I_F = 1.0$ A | $T_J = 25$ °C | V_F (1) | 0.921 | - | V |
| | | | | 1.016 | 1.10 | |
| | $I_F = 2.0$ A | $T_J = 125$ °C | | 0.772 | - | |
| | | | | 0.910 | 1.02 | |
| Maximum reverse current | Rated V_R | $T_J = 25$ °C | I_R (2) | 1.8 | 10 | μ A |
| | | $T_J = 100$ °C | | 108 | 200 | |
| Maximum reverse recovery time | $I_F = 0.5$ A, $I_R = 1.0$ A, $t_{rr} = 0.25$ A | | t_{rr} | 23 | 35 | ns |
| Typical reverse recovery time | $I_F = 1.0$ A, $dI/dt = 100$ A/ μ s, $V_R = 30$ V, $I_{rr} = 0.1 I_{RM}$ | | t_{rr} | 31 | - | ns |
| Typical reverse recovery current | | | I_{RM} | 1.7 | - | A |
| Typical stored charge | | | Q_{rr} | 29 | - | nC |
| Typical junction capacitance | | | C_J | 10 | - | pF |

Notes

(1) Pulse test: 300 μ s pulse width, 1 % duty cycle

(2) Pulse test: Pulse width \leq 40 ms

UG2F, UG2G

Vishay General Semiconductor



| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | |
|--|-----------------------|------|------|--------------------|
| PARAMETER | SYMBOL | UG2F | UG2G | UNIT |
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 45 | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}^{(1)}$ | 14 | | |

Note

(1) Thermal resistance junction to lead P.C.B. mounted 0.375" (9.5 mm) lead length

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| UG2G-E3/54 | 0.404 | 54 | 4000 | 13" diameter paper tape and reel |
| UG2G-E3/73 | 0.404 | 73 | 2000 | Ammo pack packaging |

RATINGS AND CHARACTERISTICS CURVES

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

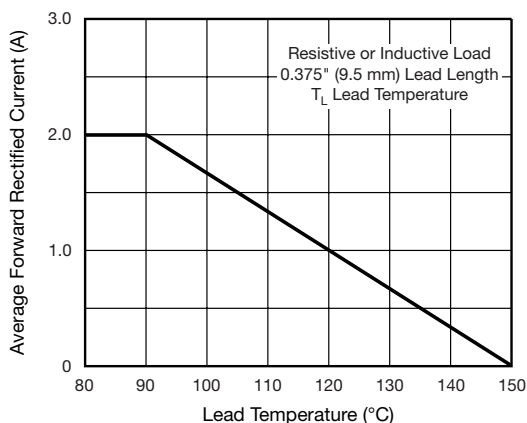


Fig. 1 - Maximum Forward Current Derating Curves

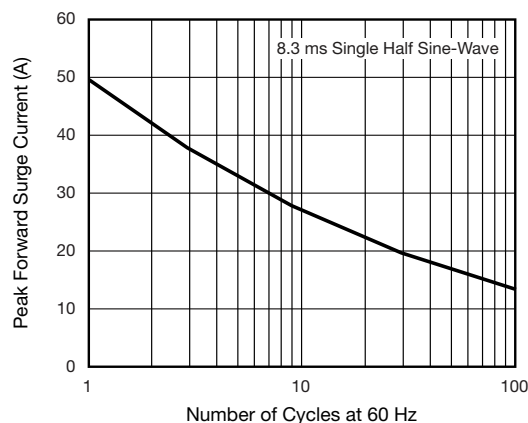


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

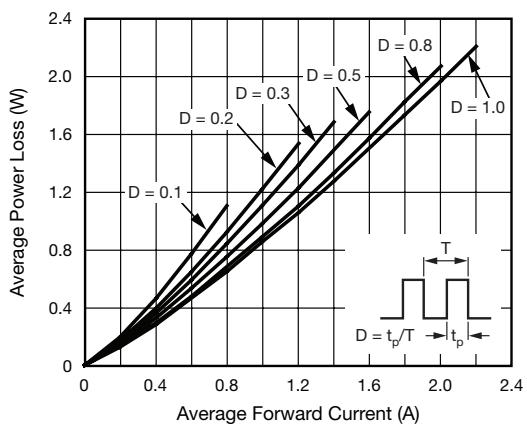


Fig. 2 - Forward Power Loss Characteristics

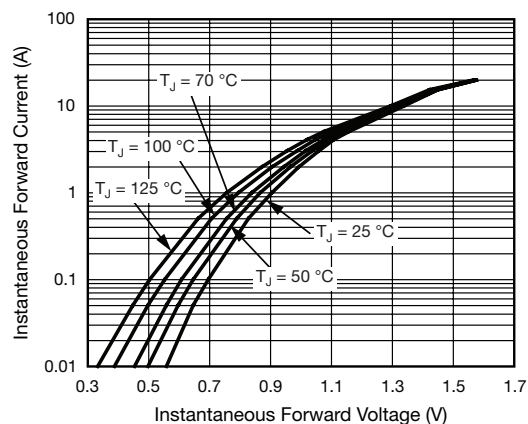


Fig. 4 - Typical Instantaneous Forward Characteristics

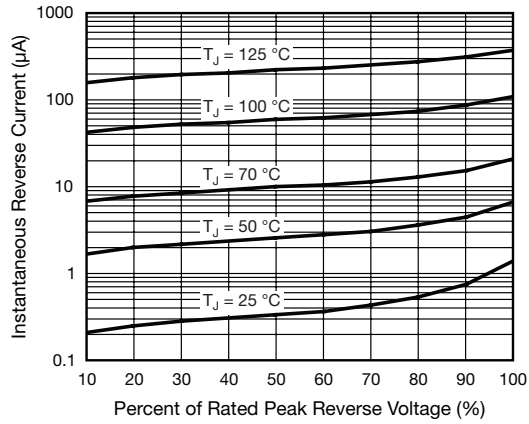


Fig. 5 - Typical Reverse Leakage Characteristics

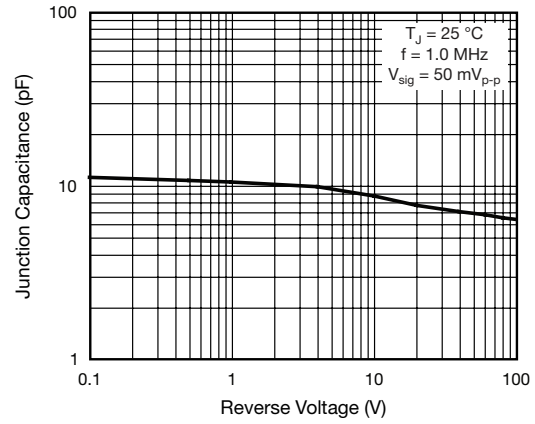
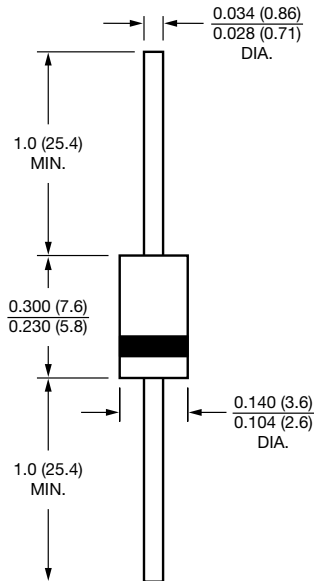


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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