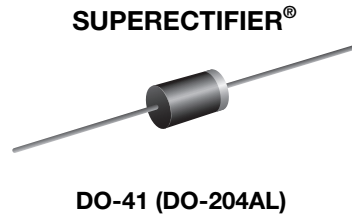




Glass Passivated Ultrafast Plastic Rectifier



FEATURES

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



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-41 (DO-204AL), molded epoxy over glass body
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 | |
|-------------------------|---|
| $I_{F(AV)}$ | 1.0 A |
| V_{RRM} | 50 V, 100 V, 150 V, 200 V, 300 V, 400 V |
| I_{FSM} | 30 A |
| t_{rr} | 50 ns |
| V_F | 0.95 V, 1.25 V |
| $T_J \text{ max.}$ | 150 °C |
| Package | DO-41 (DO-204AL) |
| Circuit configuration | Single |

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | | | | | | |
|--|----------------|-------------|--------|--------|--------|--------|--------|------|
| PARAMETER | SYMBOL | EGP10A | EGP10B | EGP10C | EGP10D | EGP10F | EGP10G | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 150 | 200 | 300 | 400 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55\text{ °C}$ | $I_{F(AV)}$ | 1.0 | | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 30 | | | | | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -65 to +150 | | | | | | °C |



| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | |
|--|--|-----------------|--------|--------|--------|--------|--------|--------|------|
| PARAMETER | TEST CONDITIONS | SYMBOL | EGP10A | EGP10B | EGP10C | EGP10D | EGP10F | EGP10G | UNIT |
| Maximum instantaneous forward voltage | 1.0 A | V _F | 0.95 | | | | 1.25 | | V |
| Maximum DC reverse current at rated DC blocking voltage | T _A = 25 °C | I _R | 5.0 | | | | | | μA |
| | T _A = 125 °C | | 100 | | | | | | |
| Maximum reverse recovery time | I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A | t _{rr} | 50 | | | | | | ns |
| Typical junction capacitance | 4.0 V, 1 MHz | C _J | 22 | | | | 15 | | pF |

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---------------------------------|--------|--------|--------|--------|--------|--------|------|--|
| PARAMETER | SYMBOL | EGP10A | EGP10B | EGP10C | EGP10D | EGP10F | EGP10G | UNIT | |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 50 | | | | | | °C/W | |

Note

⁽¹⁾ Thermal resistance from junction to ambient, and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| EGP10D-E3/54 | 0.337 | 54 | 5500 | 13" diameter paper tape and reel |
| EGP10D-E3/73 | 0.337 | 73 | 3000 | Ammo pack packaging |

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

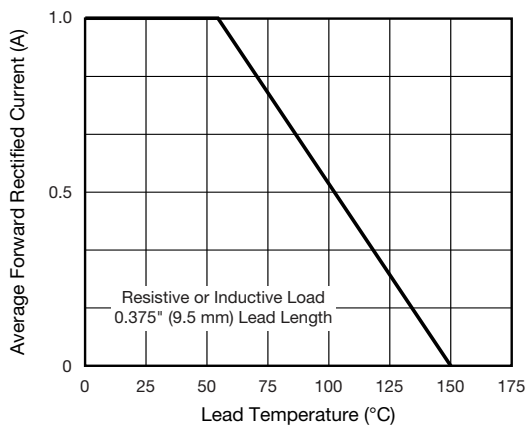


Fig. 1 - Maximum Forward Current Derating Curve

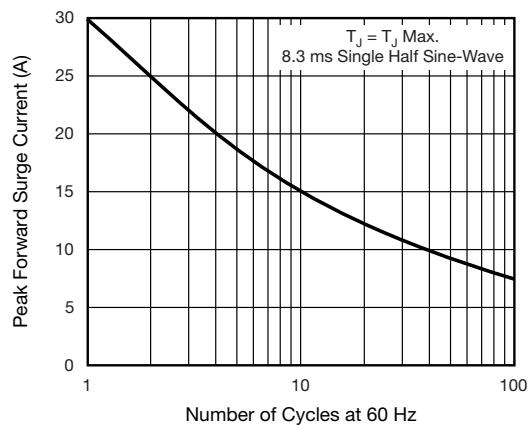


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

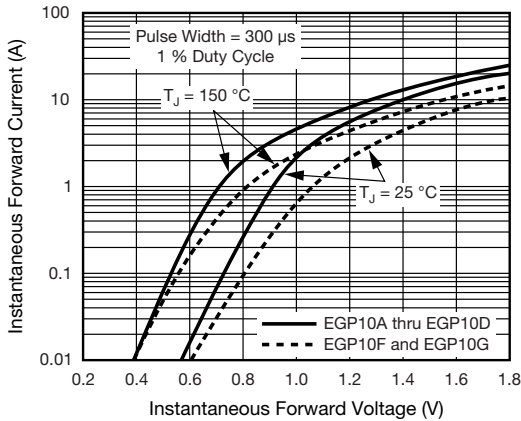


Fig. 3 - Typical Instantaneous Forward Characteristics

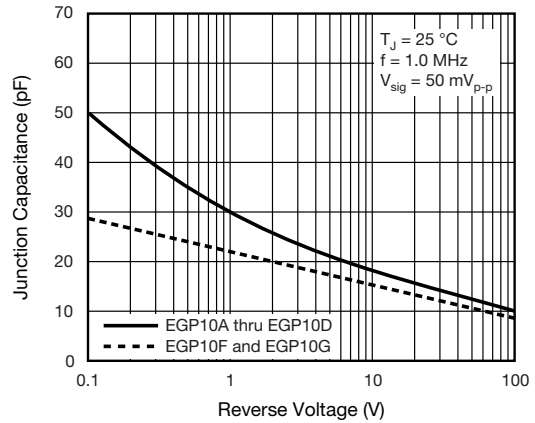


Fig. 5 - Typical Junction Capacitance

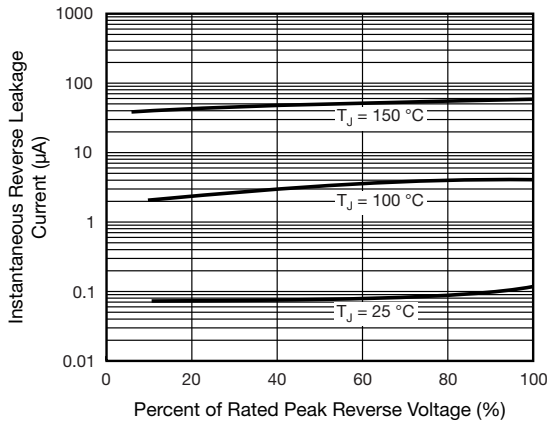


Fig. 4 - Typical Reverse Leakage Characteristics

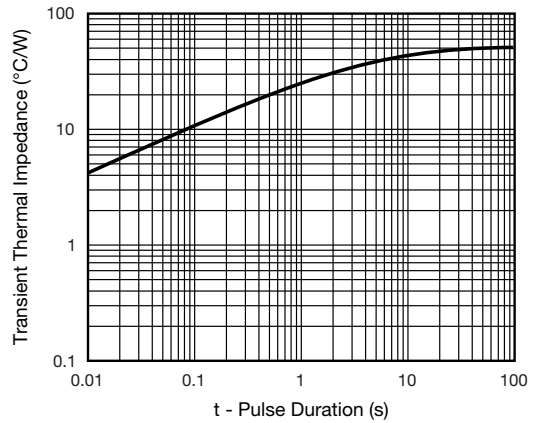
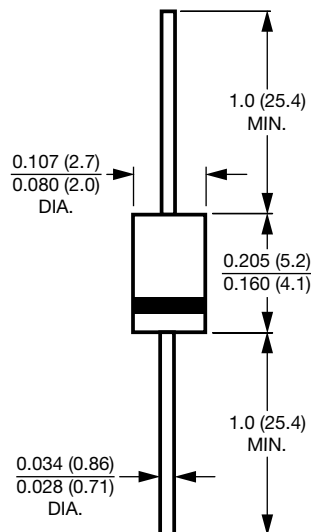


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)





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