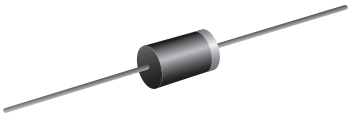
# EGP10A, EGP10B, EGP10C, EGP10D, EGP10F, EGP10G



## Glass Passivated Ultrafast Plastic Rectifier

**SUPERECTIFIER®**



**DO-41 (DO-204AL)**

### FEATURES

RoHS COMPLIANT

- Superectifier 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

### 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 |
| $T_J$ max. | 150 °C |
| Package | DO-41 (DO-204AL) |
| Circuit configuration | Single |

**MAXIMUM RATINGS** ($T_A$ = 25 °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 °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 |



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| **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 | $R_{\theta JA}$ (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)

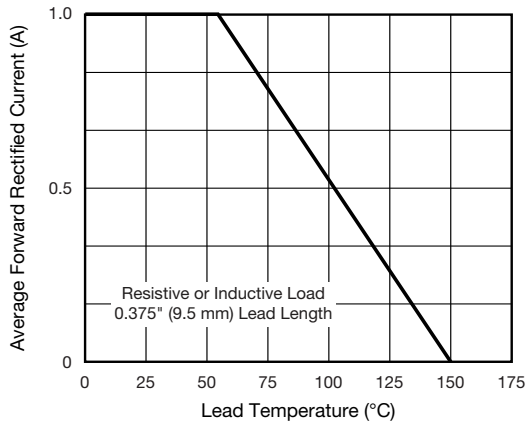



Fig. 1 - Maximum Forward Current Derating Curve

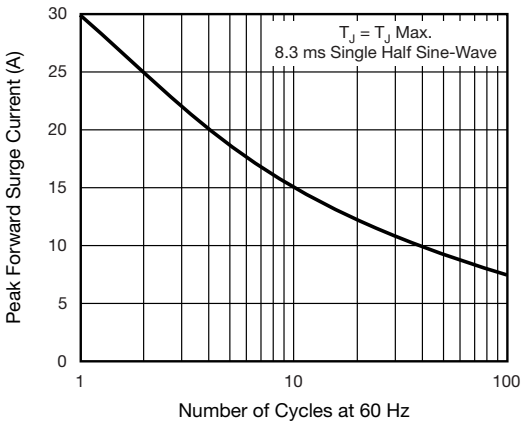



Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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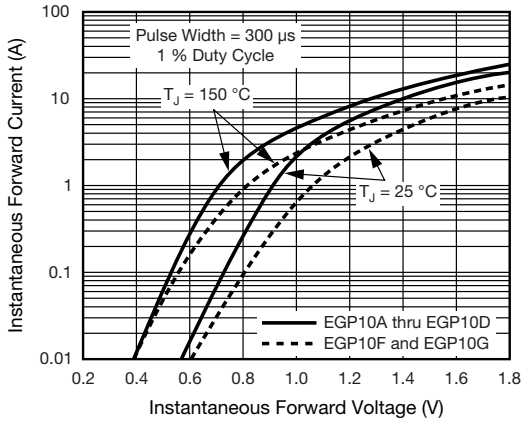



Fig. 3 - Typical Instantaneous Forward Characteristics

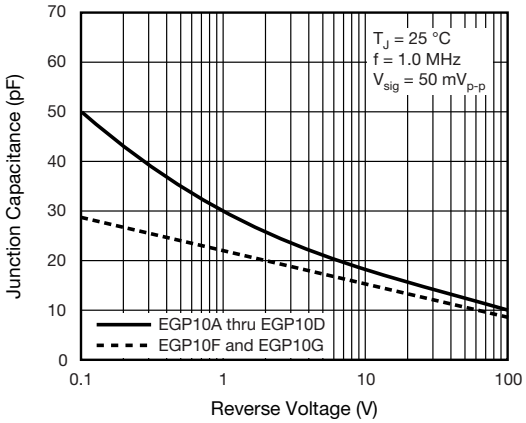



Fig. 5 - Typical Junction Capacitance

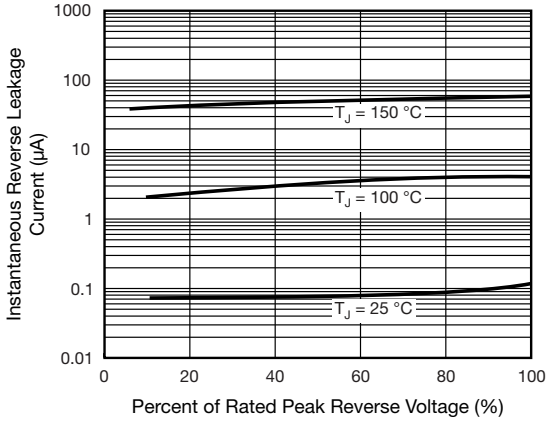



Fig. 4 - Typical Reverse Leakage Characteristics

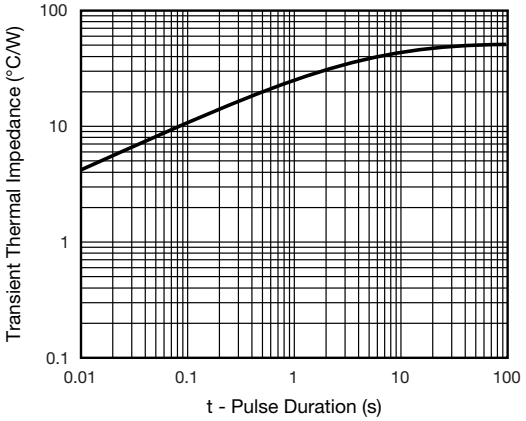
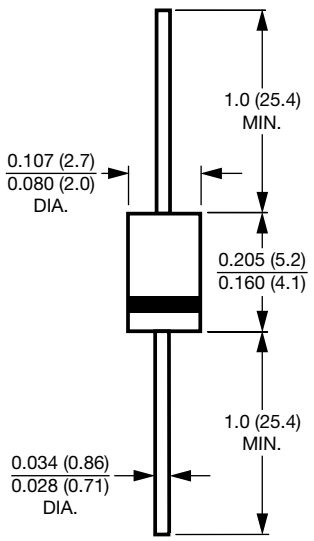



Fig. 6 - Typical Transient Thermal Impedance

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-41 (DO-204AL)**






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