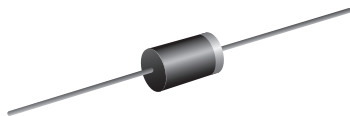




Miniature Glass Passivated Junction Rectifier

SUPERECTIFIER®



DO-41 (DO-204AL)

FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- 0.36 A operation at $T_A = 40\text{ °C}$ with no thermal runaway
- Typical I_R less than $0.1\ \mu\text{A}$
- 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 rectification of high voltage power supplies, inverters, converters and freewheeling diodes application.

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

| PRIMARY CHARACTERISTICS | |
|-------------------------------|-------------------|
| $I_{F(AV)}$ | 0.36 A |
| V_{RRM} | 1600 V |
| I_{FSM} | 15 A |
| t_{rr} | 2.0 μs |
| I_R | 1.0 μA |
| V_F at $I_F = 2.0\text{ A}$ | 1.6 V |
| T_J max. | 175 °C |
| Package | DO-41 (DO-204AL) |
| Circuit configuration | Single |

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | |
|--|----------------|-------------|------|
| PARAMETER | SYMBOL | BYX10GP | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 1600 | V |
| Maximum working reverse voltage | V_{RWM} | 800 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 40\text{ °C}$ | $I_{F(AV)}$ | 0.36 | A |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 15 | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -65 to +175 | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | | | |
|---|--|----------------------|-------------|---------|---------------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | BYX10GP | UNIT |
| Maximum instantaneous forward voltage | $I_F = 2.0\text{ A}$ | $T_A = 25\text{ °C}$ | $V_F^{(1)}$ | 1.6 | V |
| Maximum peak reverse current at rated peak working reverse voltage | $V_{RWM} = 800\text{ V}$ | $T_A = 25\text{ °C}$ | $I_R^{(2)}$ | 1.0 | μA |
| Typical reverse recovery time | $I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$ | | t_{rr} | 2.0 | μs |
| Typical junction capacitance | $V_R = 4.0\text{ V}, 1\text{ MHz}$ | | C_J | 5.0 | pF |

Notes

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

(2) Pulse test: Pulse width $\leq 40\text{ ms}$



| THERMAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | |
|--|-----------------------|---------|--------------------|
| PARAMETER | SYMBOL | BYX10GP | UNIT |
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 45 | $^\circ\text{C/W}$ |

Note

(1) Thermal resistance from junction to ambient 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 |
| BYX10GP-E3/54 | 0.339 | 54 | 5500 | 13" diameter paper tape and reel |

RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)

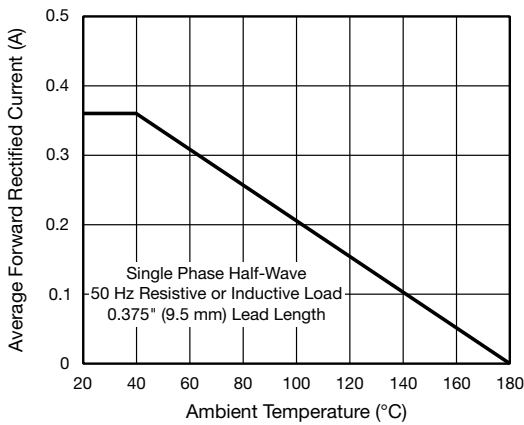


Fig. 1 - Forward Current Derating Curve

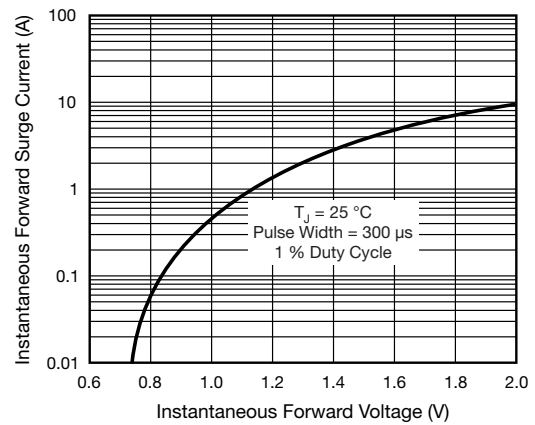


Fig. 3 - Typical Instantaneous Forward Characteristics

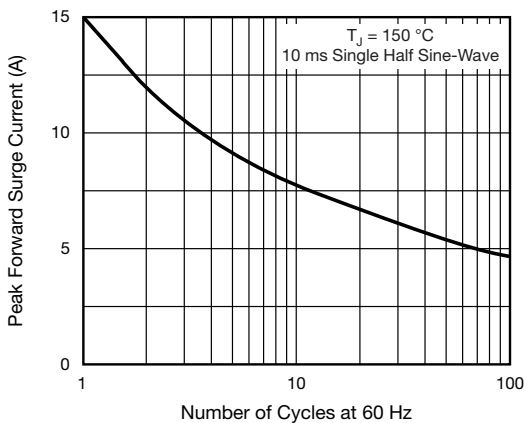


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

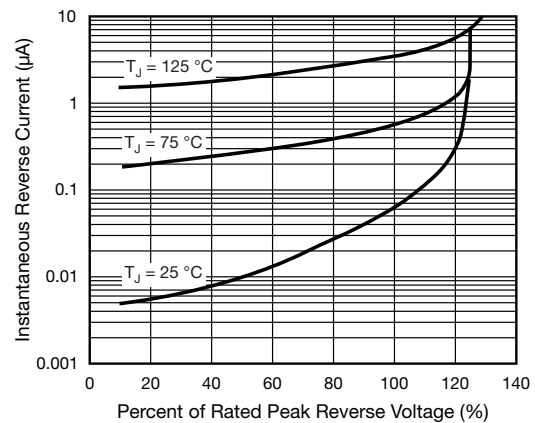


Fig. 4 - Typical Reverse Characteristics

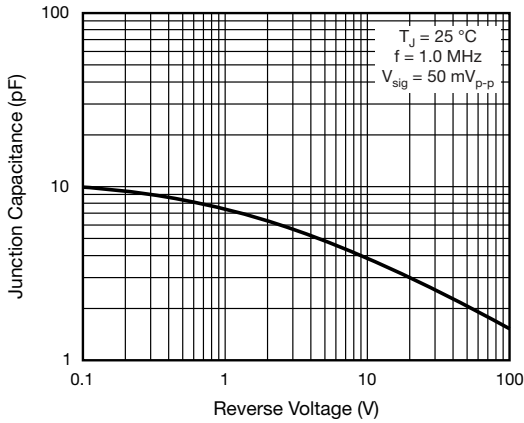
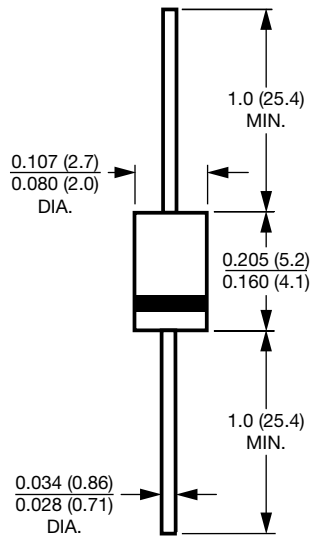


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)





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