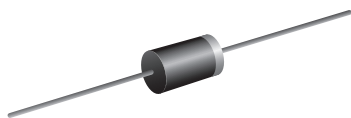


Miniature Glass Passivated Junction Fast Switching Rectifier

SUPERECTIFIER®



DO-204AL (DO-41)

FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- 0.36 A operation at $T_A = 40\text{ }^{\circ}\text{C}$ with no thermal runaway
- Typical I_R less than $0.1\text{ }\mu\text{A}$
- Solder dip $275\text{ }^{\circ}\text{C}$ max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- 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-204AL, molded epoxy over glass body
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS compliant, commercial grade
Base P/NHE3 - RoHS compliant, AEC-Q101 qualified

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

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	0.36 A
V_{RRM}	1600 V
I_{FSM}	15 A
t_{rr}	$2.0\text{ }\mu\text{s}$
I_R	$1.0\text{ }\mu\text{A}$
V_F at $I_F = 2.0\text{ A}$	1.6 V
T_J max.	$175\text{ }^{\circ}\text{C}$
Package	DO-204AL (DO-41)
Diode variation	Single die

MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ 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 $T_A = 40\text{ }^{\circ}\text{C}$	$I_{F(AV)}$	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	$^{\circ}\text{C}$



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	BYX10GP	UNIT
Maximum instantaneous forward voltage	$I_F = 2.0\text{ A}$	$T_A = 25\text{ }^{\circ}\text{C}$	$V_F^{(1)}$	1.6	V
Maximum peak reverse current at rated peak working reverse voltage	$V_{RWM} = 800\text{ V}$	$T_A = 25\text{ }^{\circ}\text{C}$	$I_R^{(2)}$	1.0	μA
Typical reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$		t_{rr}	2.0	μs
Typical junction capacitance	$V_R = 4.0\text{ V}$, 1 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
BYX10GPHE3/54 ⁽¹⁾	0.339	54	5500	13" diameter paper tape and reel

Note

(1) AEC-Q101 qualified

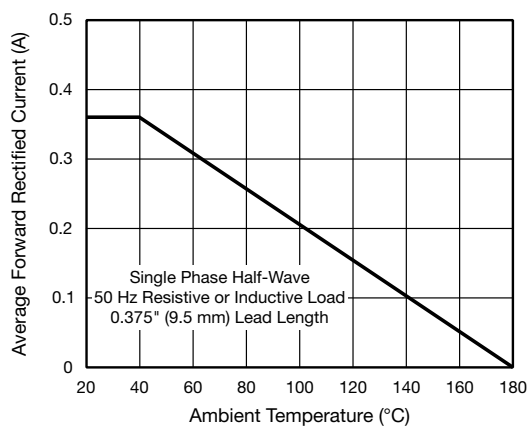
RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

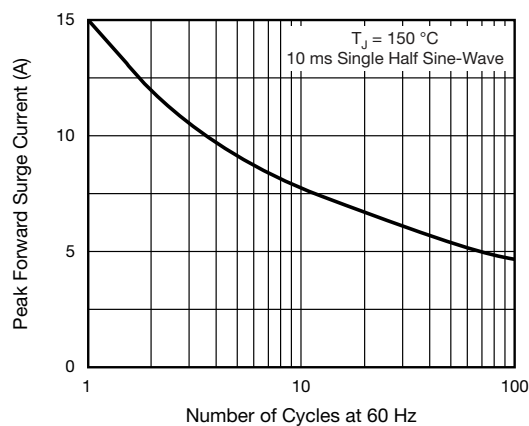


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

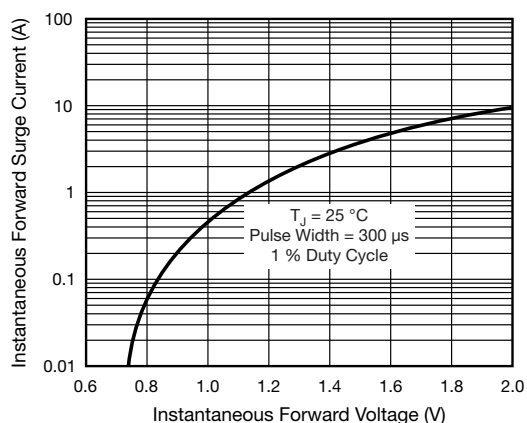


Fig. 3 - Typical Instantaneous Forward Characteristics

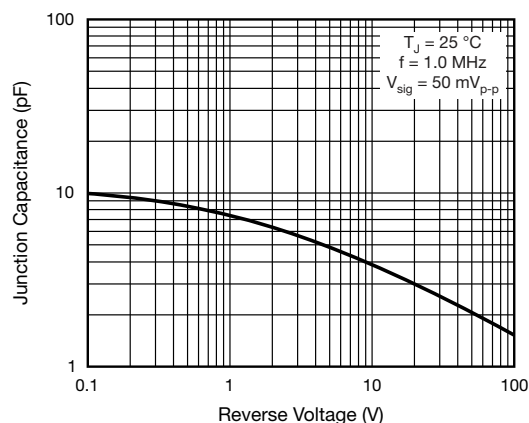


Fig. 5 - Typical Junction Capacitance

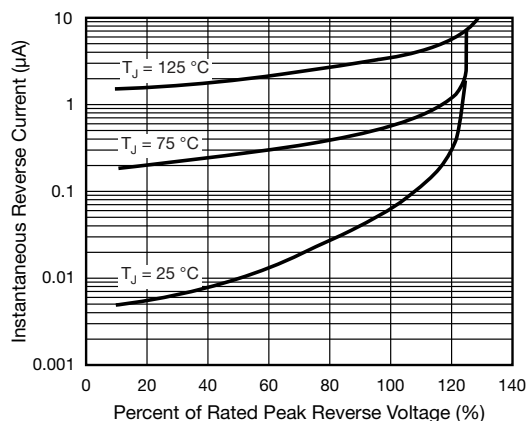
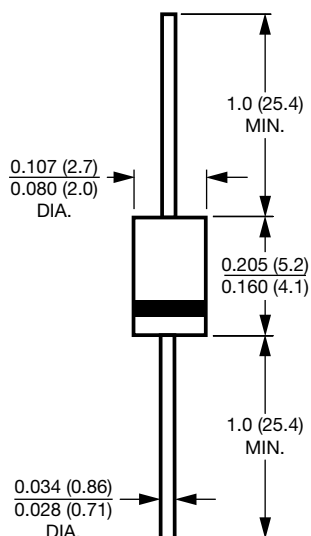


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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