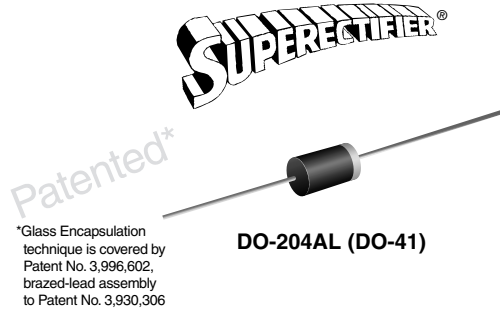


Miniature Glass Passivated Junction Plastic Rectifier



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.36 A
V_{RRM}	1600 V
I_{FSM}	15 A
I_R	1.0 μ A
V_F at $I_F = 2.0$ A	1.6 V
T_J max.	175 °C

FEATURES

- Superrectifier structure for high reliability application
- Cavity-free glass-passivated junction
- 0.36 A operation at $T_A = 40$ °C with no thermal runaway
- Typical I_R less than 0.1 μ A
- Meets environmental standard MIL-S-19500
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


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

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC-Q101 qualified), meets JESD 201 class 2 whisker test

MAXIMUM RATINGS ($T_A = 25$ °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 $T_A = 40$ °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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	BYX10GP	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	$I_F = 2.0\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	V_F	1.6	V
Maximum peak reverse current at rated peak working reverse voltage ⁽²⁾	$V_{RWM} = 800\text{ V}$	$T_A = 25\text{ }^\circ\text{C}$	I_R	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 ⁽¹⁾	$R_{\theta JA}$	45	$^\circ\text{C/W}$

Note:

- (1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. 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) Automotive grade AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

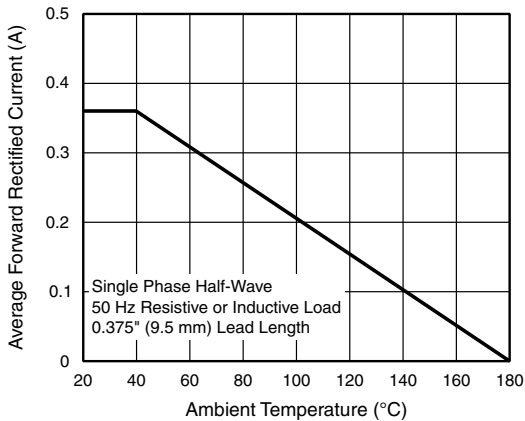


Figure 1. Forward Current Derating Curve

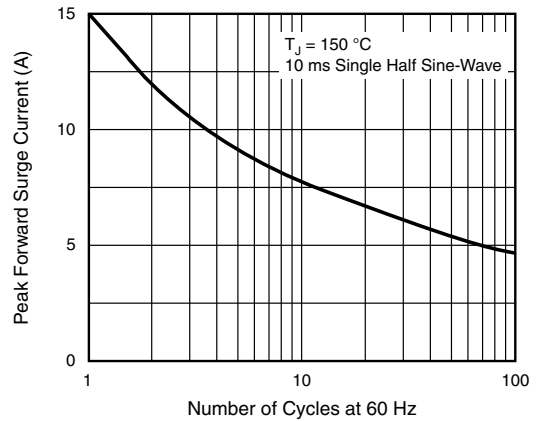


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

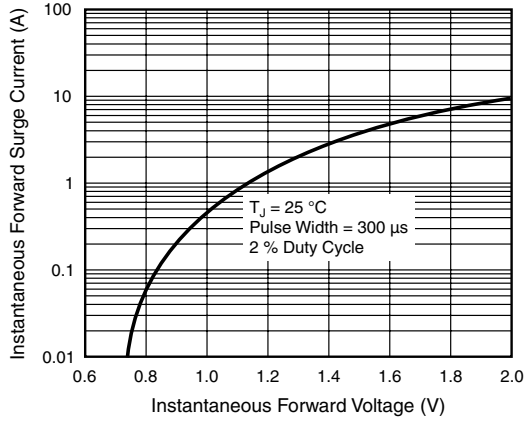


Figure 3. Typical Instantaneous Forward Characteristics

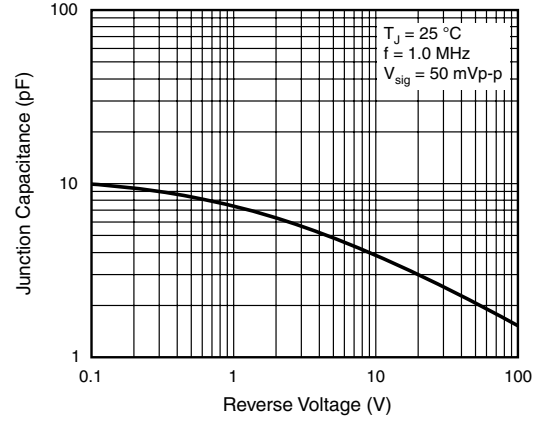


Figure 5. Typical Junction Capacitance

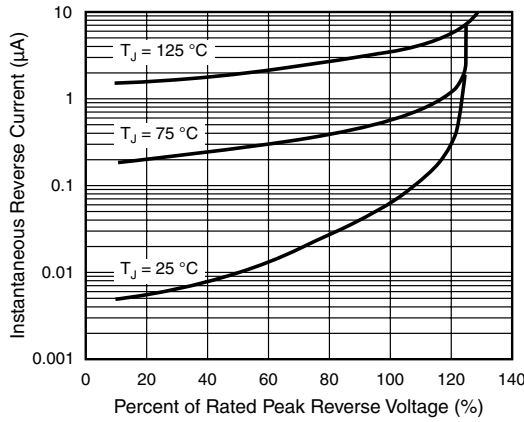


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)
