

## Glass Passivated Junction Rectifier

**SUPERECTIFIER®**

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

### FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current
- 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](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer applications.

### 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
$V_{RRM}$	100 V, 200 V, 400 V, 600 V, 800 V
$I_{FSM}$	30 A
$t_{rr}$	3.0 $\mu$ s
$I_R$	200 nA
$V_F$	1.0 V
$T_J$ max.	175 °C
Package	DO-41 (DO-204AL)
Circuit configuration	Single

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	BYW27-100GP	BYW27-200GP	BYW27-400GP	BYW27-600GP	BYW27- 800GP	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	200	400	600	800	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length (fig. 1)	$I_{F(AV)}$	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 +175					°C



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	BYW27-100GP	BYW27-200GP	BYW27-400GP	BYW27-600GP	BYW27-800GP	UNIT
Maximum instantaneous forward voltage	1.0 A	T <sub>A</sub> = 25 °C	V <sub>F</sub>			1.0			V
Maximum reverse current	Rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	I <sub>R</sub>			200			nA
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>			3.0			μs
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>			8.0			pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	BYW27-100GP	BYW27-200GP	BYW27-400GP	BYW27-600GP	BYW27-800GP	UNIT	
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	55						°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
BYW27-600E3/54	0.33	54	5500	13" diameter paper tape and reel

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

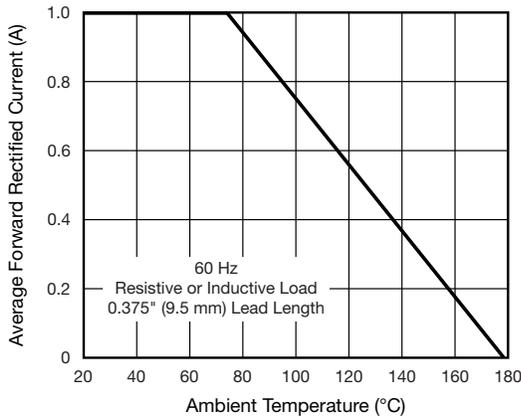


Fig. 1 - Forward Current Derating Curve

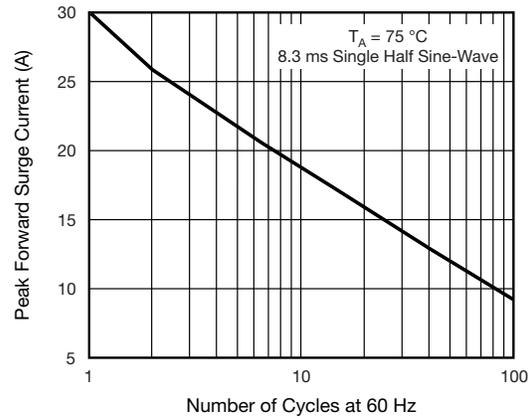


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

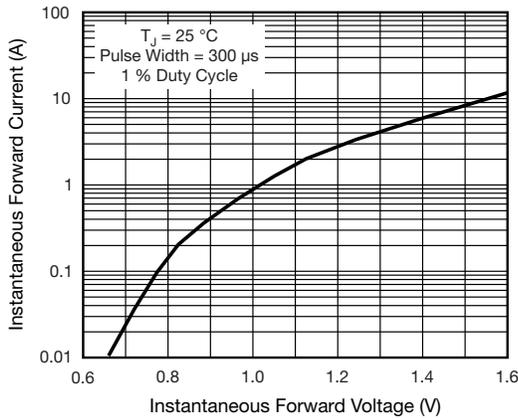


Fig. 3 - Typical Instantaneous Forward Characteristics

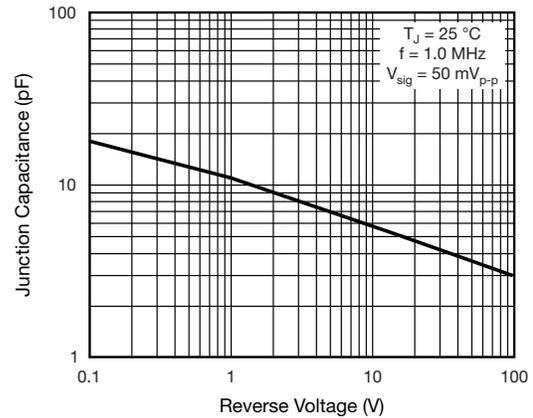


Fig. 5 - Typical Junction Capacitance

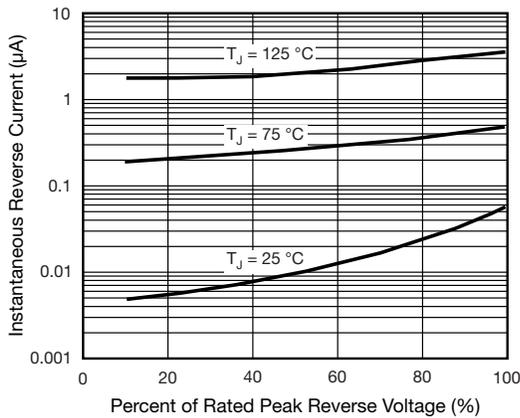
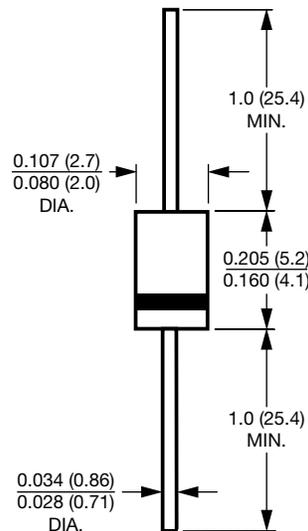


Fig. 4 - Typical Reverse Characteristics

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

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





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