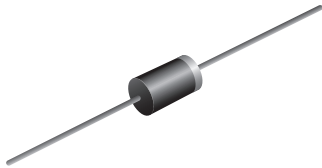




## Glass Passivated Junction Plastic Rectifier

SUPERECTIFIER®



DO-15 (DO-204AC)

### FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current,  $I_R$  less than 0.1  $\mu\text{A}$
- 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

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	1.5 A
$V_{RRM}$	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	50 A
$I_R$	5.0 $\mu\text{A}$
$V_F$	1.1 V
$T_J$ max.	175 °C
Package	DO-15 (DO-204AC)
Circuit configuration	Single

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** DO-15 (DO-204AC), 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

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	GP15A	GP15B	GP15D	GP15G	GP15J	GP15K	GP15M	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{F(AV)}$	1.5							A
Peak forward surge current 8.3 ms single half-sine wave superimposed on rated load	$I_{FSM}$	50							A
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{R(AV)}$	100							$\mu\text{A}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175							°C



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	GP15A	GP15B	GP15D	GP15G	GP15J	GP15K	GP15M	UNIT
Maximum instantaneous forward voltage	1.5 A	$V_F$				1.1				V
Maximum reverse current at rated DC blocking voltage		$I_R$								5.0
										$T_A = 150\text{ }^\circ\text{C}$
Typical reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ V}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$				3.5				$\mu\text{s}$
Typical junction capacitance	4.0 V, 1 MHz	$C_J$				15				pF

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	GP15A	GP15B	GP15D	GP15G	GP15J	GP15K	GP15M	UNIT	
Typical thermal resistance	$R_{\theta JA}$ <sup>(1)</sup>				45				$^\circ\text{C/W}$	
	$R_{\theta JL}$ <sup>(1)</sup>				20					

**Note**

<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GP15J-E3/54	0.425	54	4000	13" diameter paper tape and reel
GP15J-E3/73	0.425	73	2000	Ammo pack packaging



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

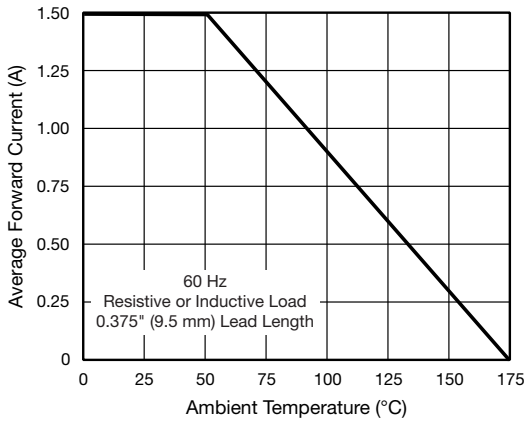


Fig. 1 - Forward Current Derating Curve

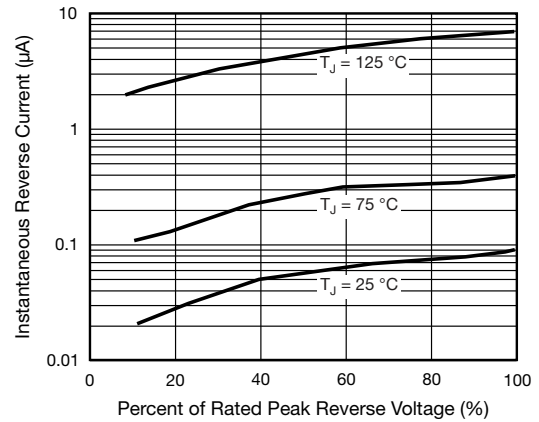


Fig. 4 - Typical Reverse Characteristics

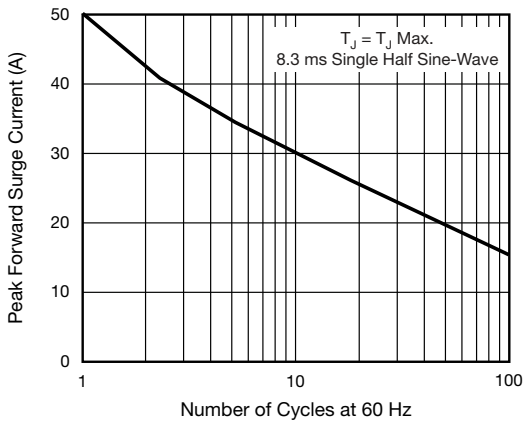


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

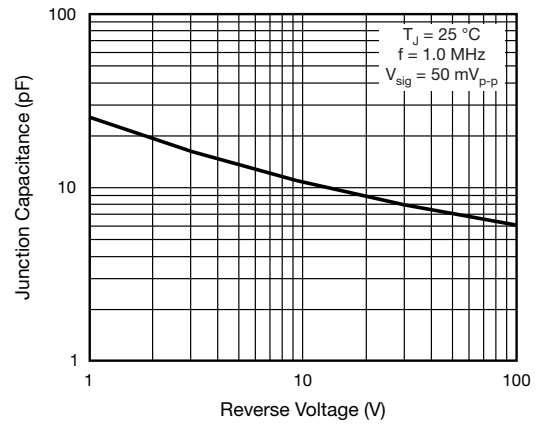


Fig. 5 - Typical Junction Capacitance

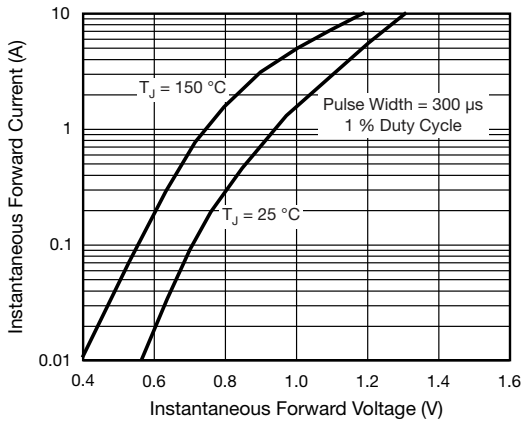


Fig. 3 - Typical Instantaneous Forward Characteristics

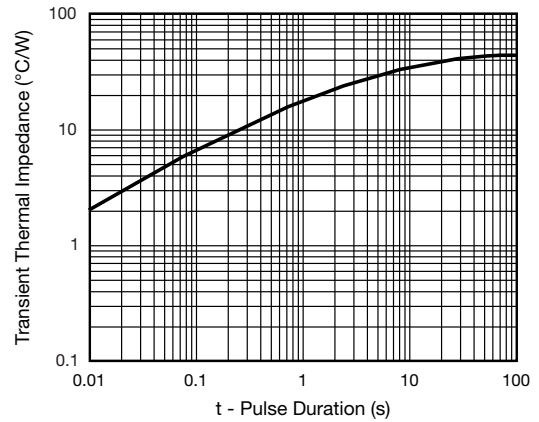
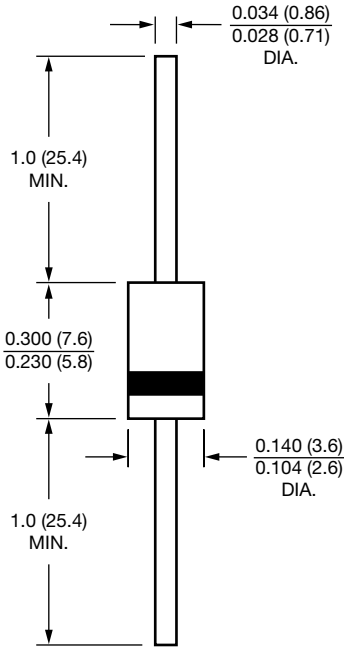


Fig. 6 - Typical Transient Thermal Impedance



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

**DO-15 (DO-204AC)**





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