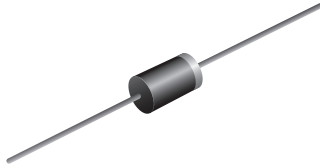


## Glass Passivated Ultrafast Plastic Rectifier

**SUPERECTIFIER®**

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

### FEATURES

- Superectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- 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 high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

### MECHANICAL DATA

**Case:** DO-204AC, 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

**Polarity:** Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
$V_{RRM}$	100 V, 150 V, 200 V
$I_{FSM}$	125 A
$t_{rr}$	35 ns
$V_F$	0.95 V
$I_R$	5.0 $\mu$ A
$T_J$ max.	175 °C
Package	DO-204AC (DO-15)
Diode variations	Single die

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)					
PARAMETER	SYMBOL	FGP30B	FGP30C	FGP30D	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	150	200	V
Maximum RMS voltage	$V_{RMS}$	70	105	140	V
Maximum DC blocking voltage	$V_{DC}$	100	150	200	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 25$ °C	$I_{F(AV)}$	3.0			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	125			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	FGP30B	FGP30C	FGP30D	UNIT
Maximum instantaneous forward voltage	3.0 A	V <sub>F</sub> <sup>(1)</sup>	0.95			V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	I <sub>R</sub>	5.0			μA
	T <sub>A</sub> = 100 °C		50			
Maximum 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>	35			ns
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub>	70			pF

**Note**

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	FGP30B	FGP30C	FGP30D	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	55			°C/W
	R <sub>θJL</sub> <sup>(2)</sup>	20			

**Notes**

- (1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length and mounted on PCB with 1.1" x 1.1" (30 mm x 30 mm) copper pads
- (2) Thermal resistance from junction to lead at 0.375" (9.5 mm) lead length with both leads attached to heatsinks

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
FGP30D-E3/54	0.452	54	4000	13" diameter paper tape and reel
FGP30D-E3/73	0.452	73	2000	Ammo pack packaging
FGP30DHE3/54 <sup>(1)</sup>	0.452	54	4000	13" diameter paper tape and reel
FGP30DHE3/73 <sup>(1)</sup>	0.452	73	2000	Ammo pack packaging

**Note**

(1) AEC-Q101 qualified

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

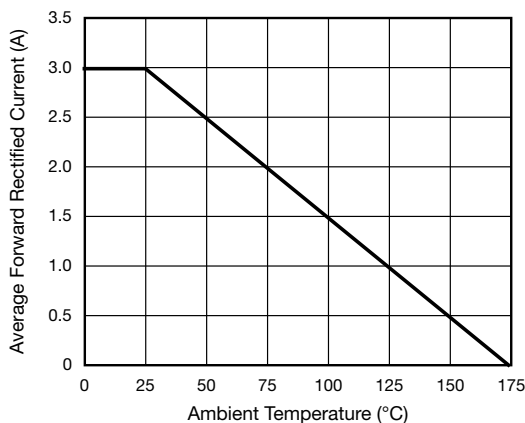


Fig. 1 - Maximum Forward Current Derating Curve

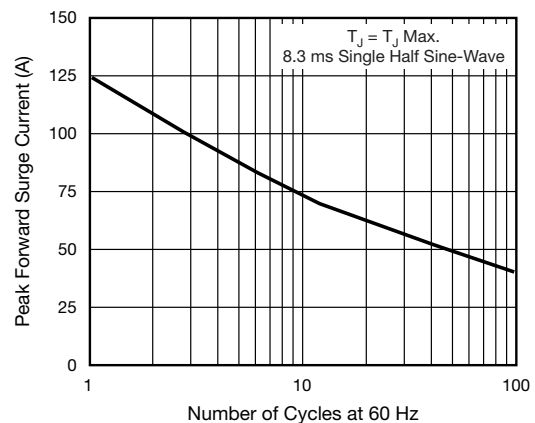


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

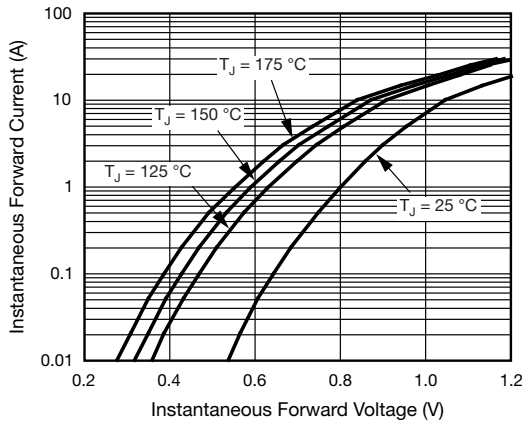


Fig. 3 - Typical Instantaneous Forward Characteristics

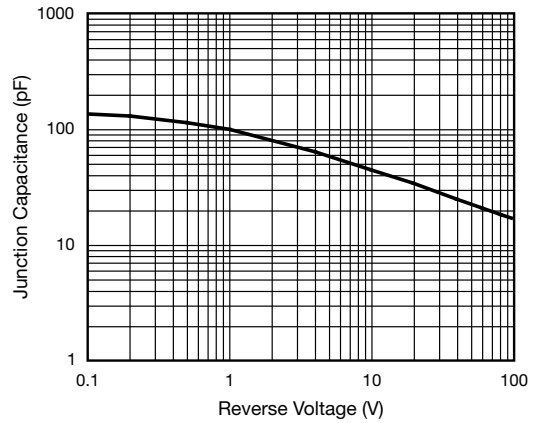


Fig. 5 - Typical Junction Capacitance

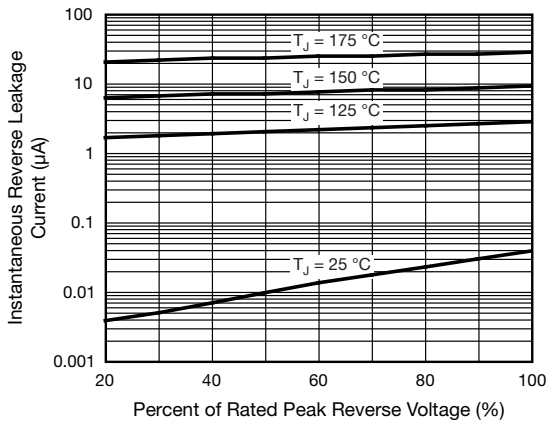


Fig. 4 - Typical Reverse Leakage Characteristics

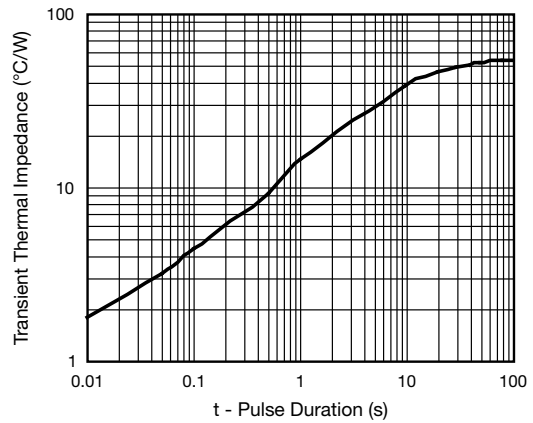
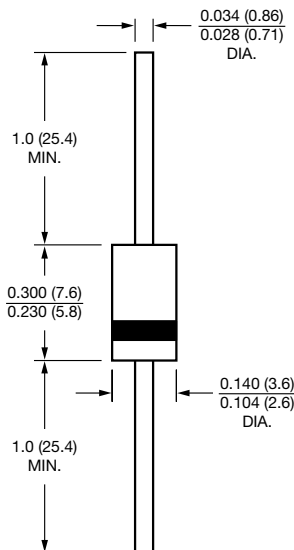


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-204AC (DO-15)





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