

Glass Passivated Ultrafast Rectifier



FEATURES

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low switching losses, high efficiency
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer 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	
$I_{F(AV)}$	1.0 A
V_{RRM}	800 V, 1000 V
I_{FSM}	30 A
t_{rr}	75 ns
V_F	1.3 V
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	BYV26DGP	BYV26EGP	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	800	1000	V
Maximum RMS voltage	V_{RMS}	560	700	V
Maximum DC blocking voltage	V_{DC}	800	1000	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 10 ms single half sine-wave superimposed on rated load	I_{FSM}	30		A
Non repetitive peak reverse energy	$E_{RSM}^{(1)}$	10		mJ
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175		°C

Note

⁽¹⁾ Peak reverse energy measured at $I_R = 400 \text{ mA}$, $T_J = T_J \text{ max.}$ on inductive load, $t = 20 \text{ } \mu\text{s}$

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	BYV26DGP	BYV26EGP	UNIT
Minimum avalanche breakdown voltage	100 μA		V_{BR}	900	1100	V
Maximum instantaneous forward voltage	1.0 A	$T_J = 25\text{ }^\circ\text{C}$	V_F	2.5		V
		$T_J = 175\text{ }^\circ\text{C}$		1.3		
Maximum DC reverse current at rated DC blocking voltage			I_R	$T_A = 25\text{ }^\circ\text{C}$	5.0	μA
				$T_A = 165\text{ }^\circ\text{C}$	150	
Max. reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$		t_{rr}	75		ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	15		pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	BYV26DGP	BYV26EGP	UNIT
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾	70		$^\circ\text{C/W}$
	$R_{\theta JL}$ ⁽²⁾	16		

Notes

- (1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, mounted on PCB with 0.5" x 0.5" (12 mm x 12 mm) copper pads
- (2) Thermal resistance from junction to lead at 0.375" (9.5 mm) lead length with both leads attached to heatsink

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
BYV26EGP-E3/54	0.428	54	4000	13" diameter paper tape and reel
BYV26EGP-E3/73	0.428	73	2000	Ammo pack packaging
BYV26EGPHE3/54 ⁽¹⁾	0.428	54	4000	13" diameter paper tape and reel
BYV26EGPHE3/73 ⁽¹⁾	0.428	73	2000	Ammo pack packaging

Note

- (1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

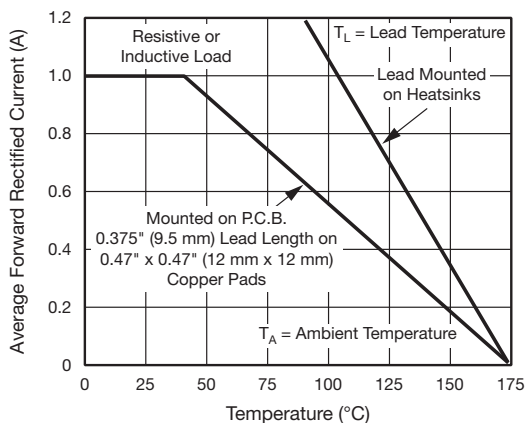


Fig. 1 - Maximum Forward Current Derating Curve

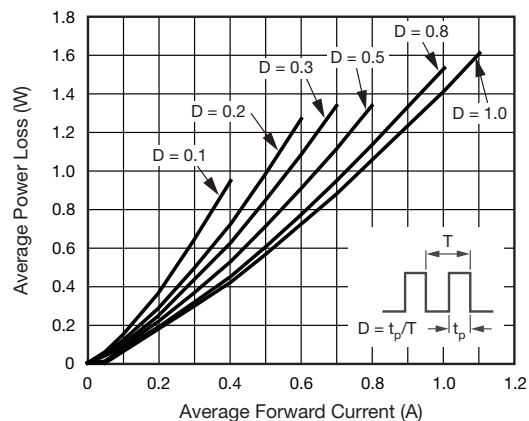


Fig. 2 - Forward Power Loss Characteristics

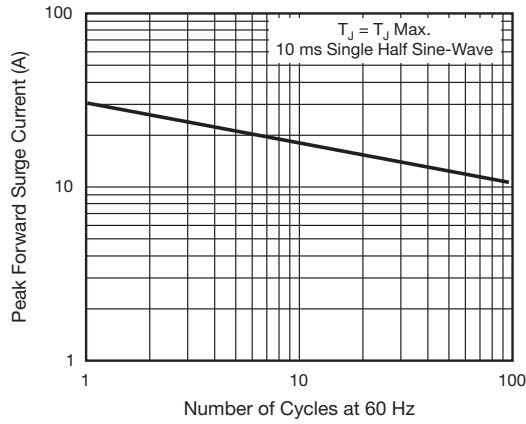


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

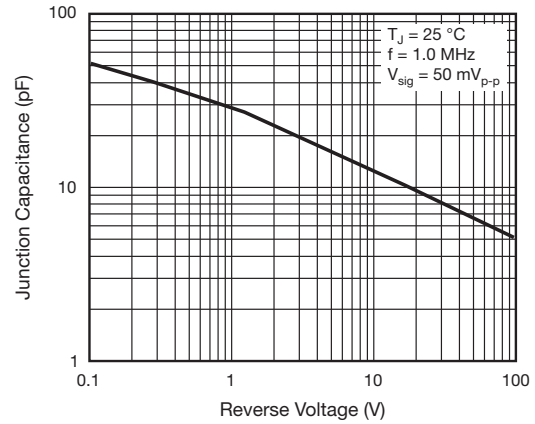


Fig. 6 - Typical Junction Capacitance

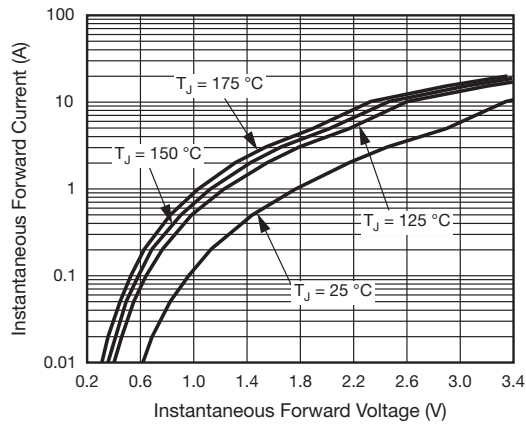


Fig. 4 - Typical Instantaneous Forward Voltage Characteristics

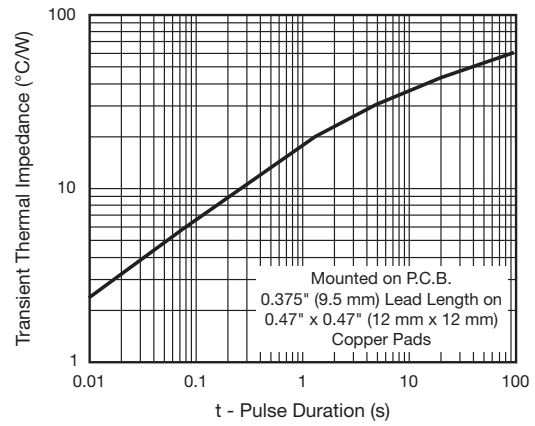


Fig. 7 - Typical Transient Thermal Impedance

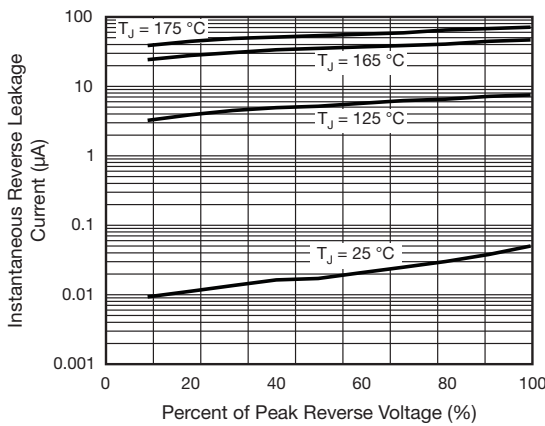
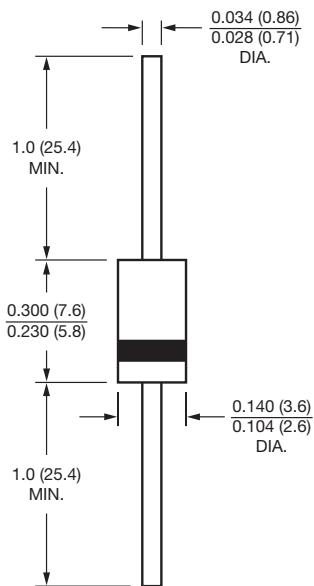


Fig. 5 - Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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