Glass Passivated Ultrafast Rectifier

DO-204AC (DO-15)

* Glass Encapsulation technique is covered by Patent No. 3,996,602, brazed-lead assembly to Patent No. 3,930,306

FEATURES

- 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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

Pb e3 RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

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 max.	175 °C

MECHANICAL DATA

Case: DO-204AC, 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

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T_A = 25 °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 (1)	E_{RSM}	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 mA, T_J = T_J max. on inductive load, t = 20 µs

ELECTRICAL CHARACTERISTICS (T_A = 25 °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 °C T_J = 175 °C	V_F	2.5 1.3		V
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C T_A = 165 °C	I_R	5.0 150		µA
Max. reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	75		ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	15		pF

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

Notes:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, mounted on P.C.B. with 0.5 x 0.5" (12 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) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

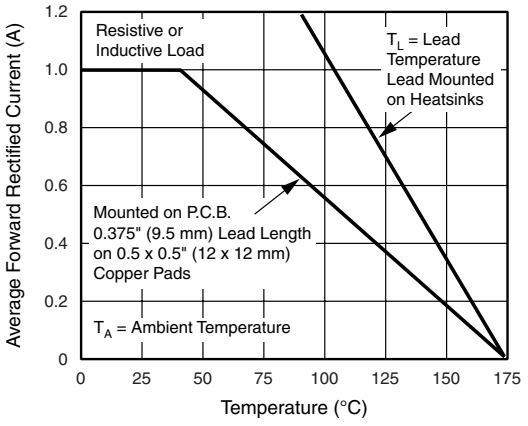


Figure 1. Maximum Forward Current Derating Curve

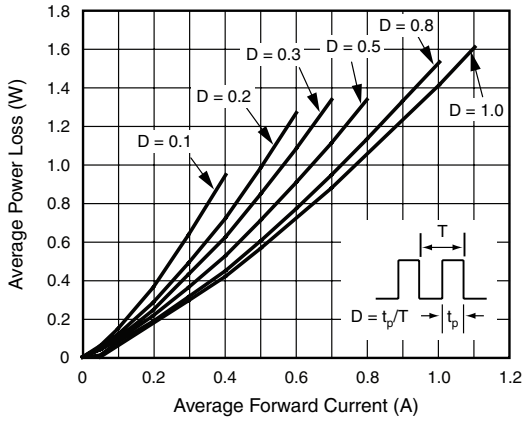


Figure 2. Forward Power Loss Characteristics

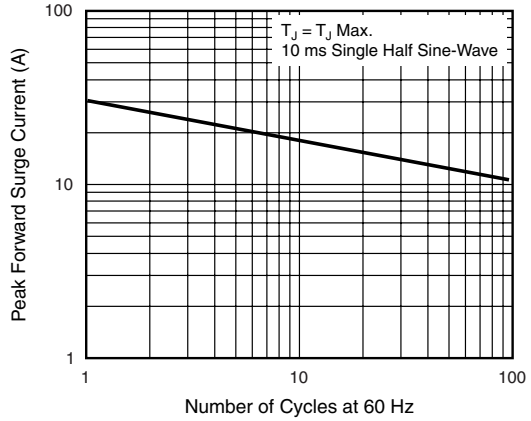


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

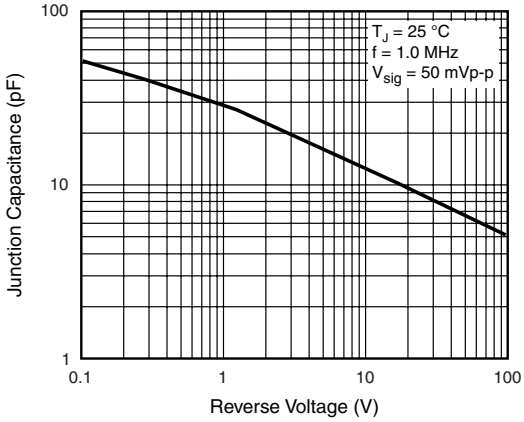


Figure 6. Typical Junction Capacitance

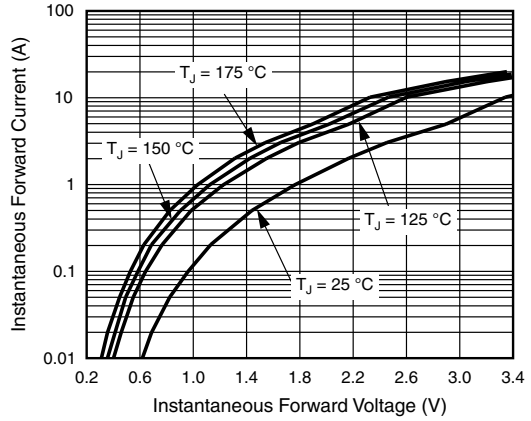


Figure 4. Typical Instantaneous Forward Voltage Characteristics

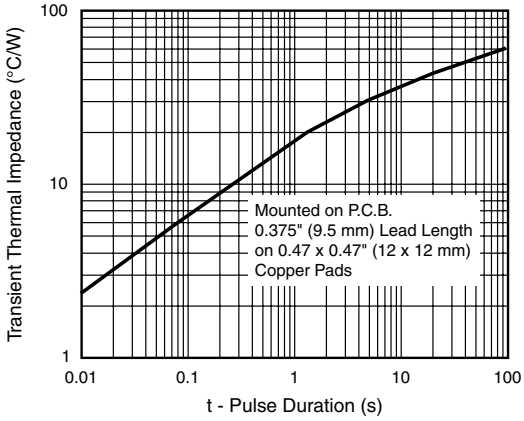


Figure 7. Typical Transient Thermal Impedance

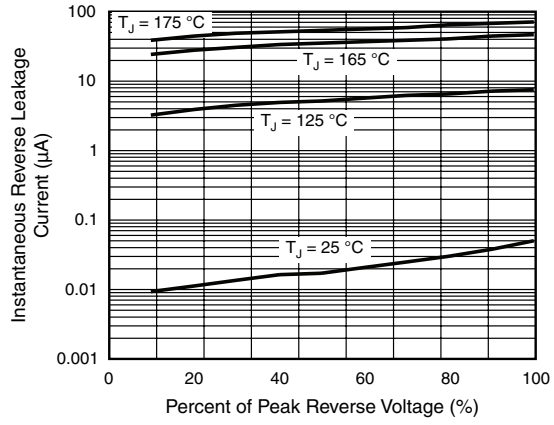
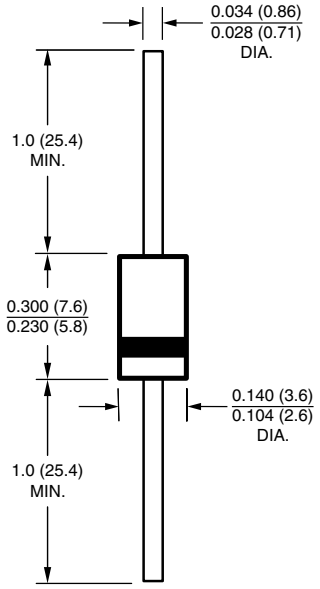


Figure 5. Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)



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