



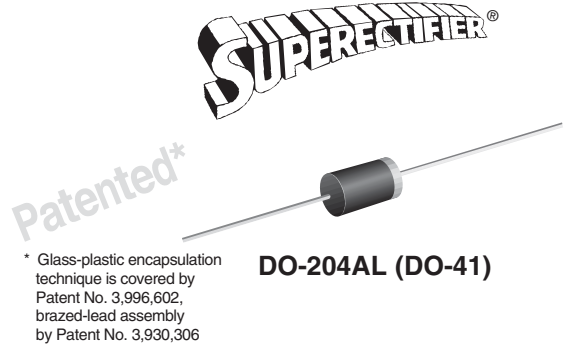
BYD33DGP thru BYD33MGP

New Product Vishay General Semiconductor

Avalanche Glass Passivated Junction Fast Switching Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	200 V to 1000 V
I_{FSM}	30 A
E_{RSM}	10 mJ, 7 mJ
t_{rr}	150 ns, 250 ns, 300 ns
I_R	5.0 μ A
T_j max.	175 °C



Features

- Cavity-free glass-passivated junction
- Avalanche surge capability guaranteed
- Fast reverse recovery time
- Low switching losses, high efficiency
- Low leakage current, typical I_R less than 0.1 μ A
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds



Mechanical Data

Case: DO-204AL, molded epoxy over glass body
Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

Typical Applications

For use in high frequency rectification of switching power supplies, inverters, converters and freewheeling applications for consumer, automotive and Telecommunication

Maximum Ratings

$T_A = 25$ °C unless otherwise specified

Parameter	Symbol	BYD33DGP	BYD33GGP	BYD33JGP	BYD33KGP	BYD33MGP	Unit
Device Marking Code		33DGP	33GGP	33JGP	33KGP	33MGP	V
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	800	1000	V
Maximum DC blocking voltage	V_{DC}	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{F(AV)}$	1.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30					A
Non-repetitive peak reverse avalanche energy D-J K-M	E_{RSM}	10 7					mJ
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length $T_A = 55$ °C	$I_{R(AV)}$	100					μ A
Operating junction and storage temperature range	T_j, T_{STG}	- 65 to + 175					°C

BYD33DGP thru BYD33MGP



Vishay General Semiconductor

Electrical Characteristics

$T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Test condition	Symbol	BYD33DGP	BYD33GGP	BYD33JGP	BYD33KGP	BYD33MGP	Unit
Maximum instantaneous forward voltage	at 1.0 A ⁽¹⁾	V_F	1.3					V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 150\text{ }^\circ\text{C}$	I_R	5.0 200					μA
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$	t_{rr}	150		250		300	ns
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	15					pF

Notes:

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

Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	BYD33DGP	BYD33GGP	BYD33JGP	BYD33KGP	BYD33MGP	Unit
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$	55					$^\circ\text{C/W}$

Notes:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

Ratings and Characteristics Curves

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

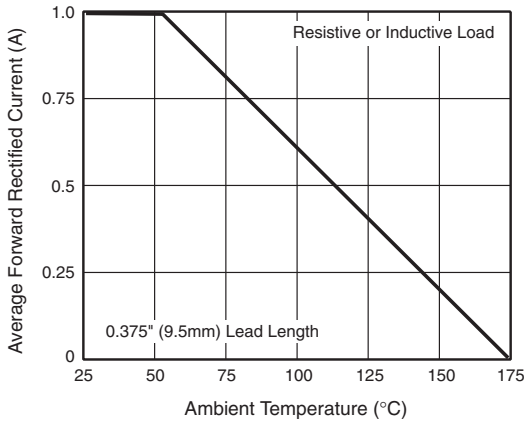


Figure 1. Forward Current Derating Curve

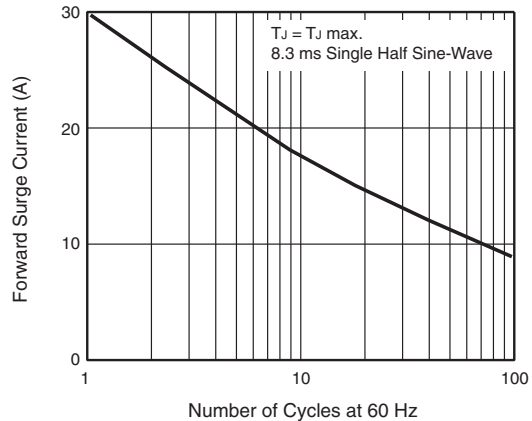


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

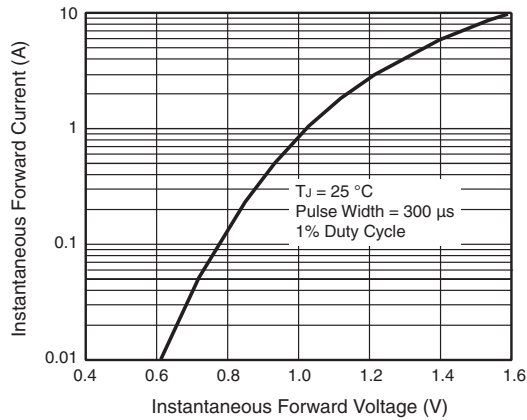


Figure 3. Typical Instantaneous Forward Characteristics

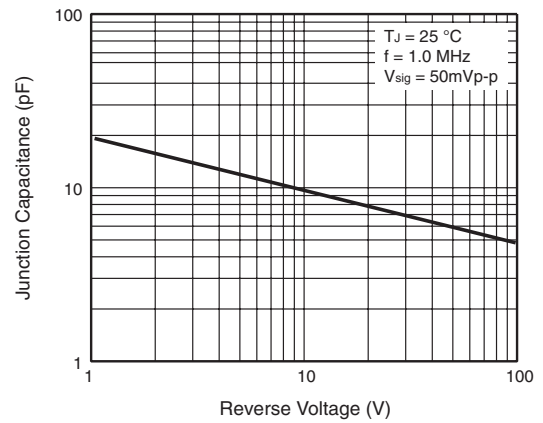


Figure 5. Typical Junction Capacitance

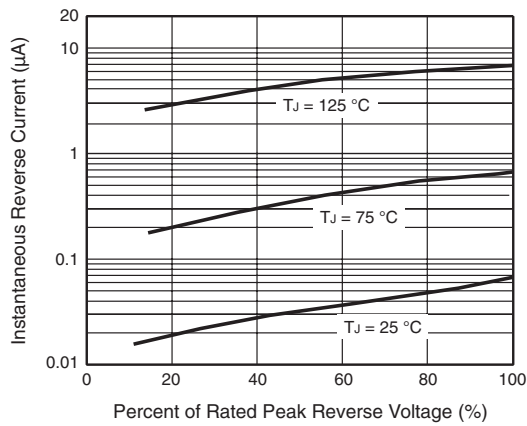


Figure 4. Typical Reverse Characteristics

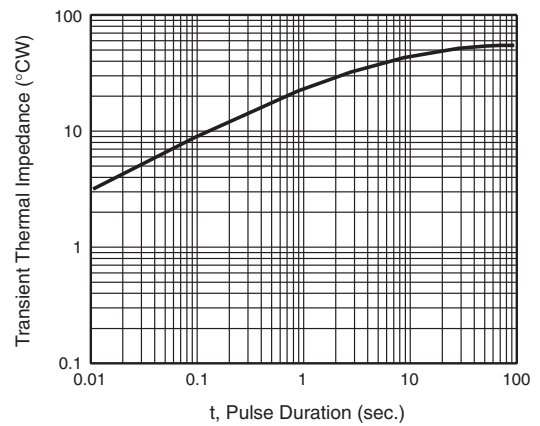
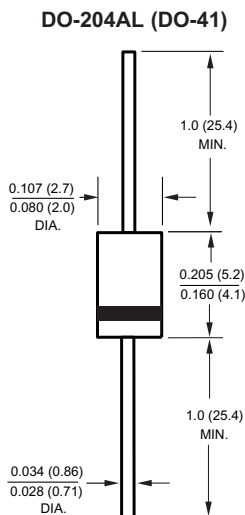


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)





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