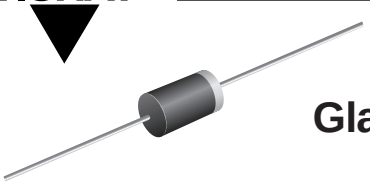
New Product

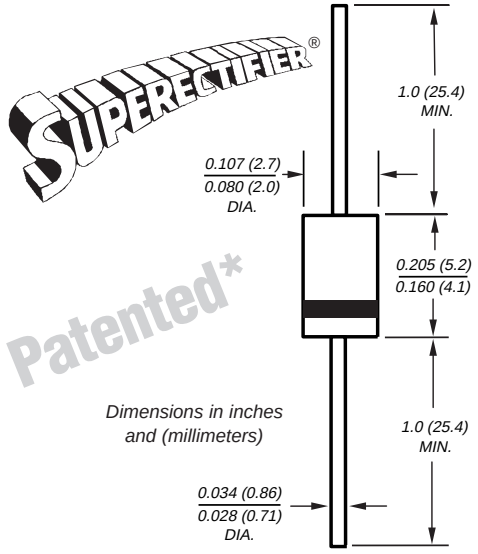
Vishay Semiconductors
formerly General Semiconductor



Glass Passivated Ultrafast Rectifier

Reverse Voltage 600V
Forward Current 1.0A

DO-204AL (DO-41)



**Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306*

Features

- High temperature metallurgically bonded construction
- Cavity-free glass passivated junction
- Ultrafast recovery time for high efficiency
- Low forward voltage, high current capability
- Capable of meeting environmental standards of MIL-S-19500
- Hermetically sealed package
- Low leakage current • High surge current capability
- Specified reverse surge capability
- High temperature soldering guaranteed: 350°C/10 seconds, 0.375" (9.5mm) lead length,5 lbs. (2.3kg) tension

Mechanical Data

Case: JEDEC DO-204AL, molded plastic over glass body
Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Mounting Position: Any **Weight:** 0.012 oz., 0.3 g

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	600	V
Maximum RMS voltage	V_{RMS}	420	V
Maximum DC blocking voltage	V_{DC}	600	V
Maximum average forward rectified current 0.375" (9.5mm) lead length at T_L = 85°C (See Fig. 1)	$I_{F(AV)}$	1.0	A
Peak forward surge current 10ms single half sine-wave superimposed on rated load	I_{FSM}	30	A
Non repetitive peak reverse energy (Note 1)	E_{RSM}	5	mJ
Typical thermal resistance (Note 2,3)	$R_{\Theta JA}$ $R_{\Theta JL}$	70 16	°C/W
Operating junction and storage temperature range	T_J, T_{STG}	–65 to +175	°C

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Minimum avalanche breakdown voltage at 100μA		V_{BR}	600	V
Maximum instantaneous forward voltage at 1.0A	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 at I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A		t_{rr}	30	ns
Maximum junction capacitance at 4.0V, 1MHz		C_J	45	pF
Maximum reverse recovery current slope at I_F = 1A, V_R = 30V, di_f/dt = –1A/μs		di_r/dt	7	A/μs

Notes: (1) Peak reverse energy measured with 8/20μs surge
(2) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, mounted on P.C.B. with 0.5 x 0.5" (12 x 12mm) copper pads
(3) Thermal resistance from junction to lead at 0.375" (9.5mm) lead length with both leads attached to heatsink

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Fig. 1 – Maximum Forward Current Derating Curve

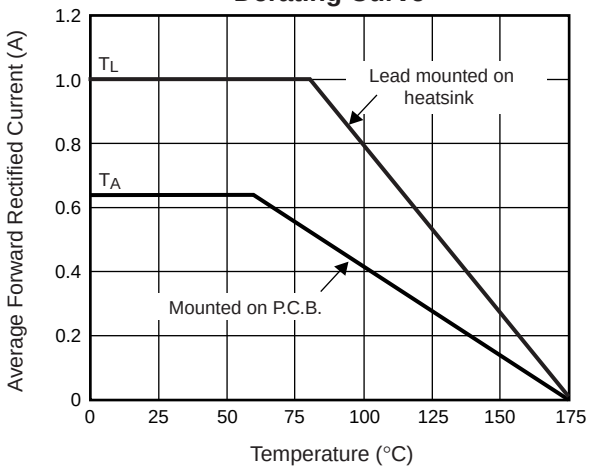


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

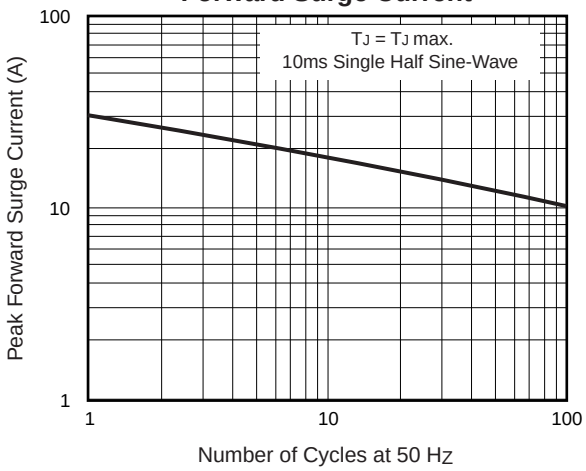


Fig. 3 – Typical Instantaneous Forward Characteristics

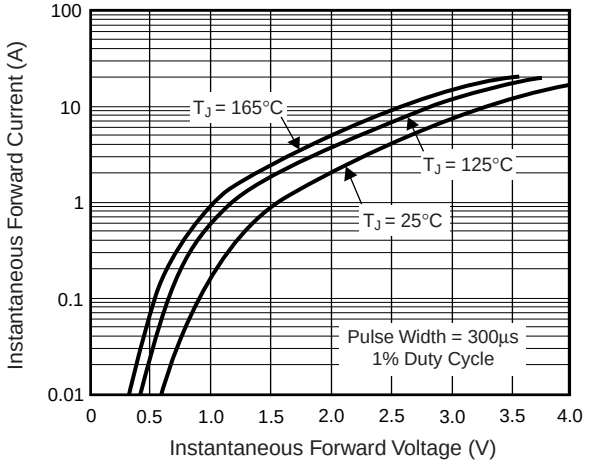


Fig. 4 – Typical Reverse Leakage Characteristics

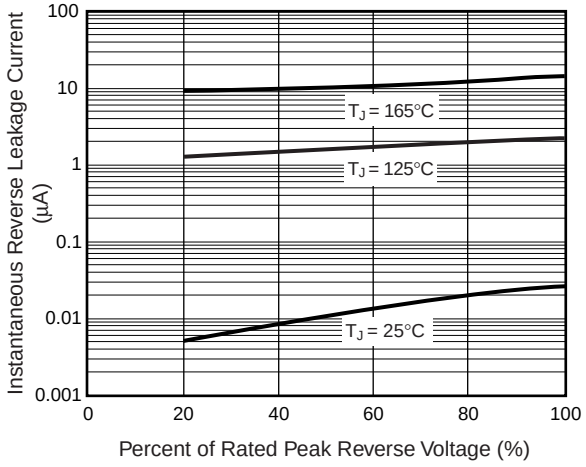


Fig. 5 – Typical Junction Capacitance

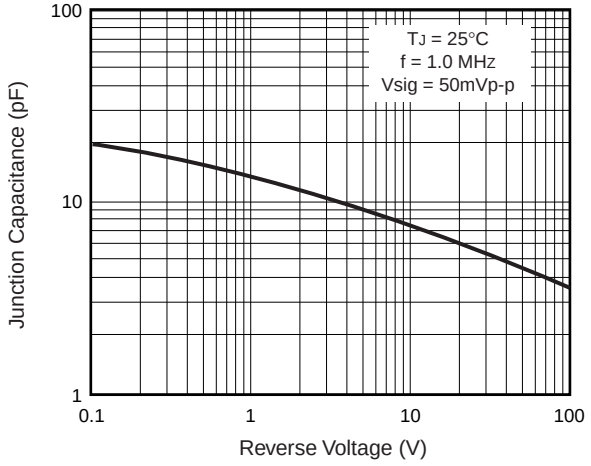


Fig. 6 – Typical Transient Thermal Impedance