VISHAY MAS 威世马来
GENERAL SEMICONDUCTOR

4.0 AMPERES ULTRAFAST RECTIFIERS

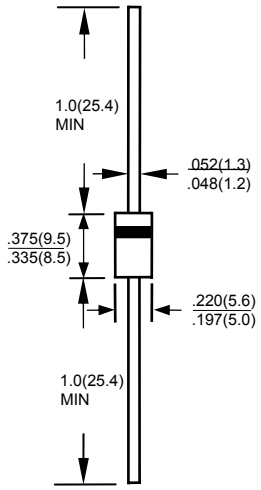
MUR405, MUR410, MUR415 MUR420, MUR440, MUR460

Vishaymas General Semiconductor

FEATURES

- Ultrafast 25 ns, 50 ns and 75 ns Recovery Times
- 175°C Operating Junction Temperature
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction
- Reverse Voltage to 600 V
- Shipped in Plastic Bags, 500 per Bag

DO-27



Dimension in inches and(millimeters)

MECHANICAL DATA

Case: Epoxy, Molded

Weight: 1.1 Gram (Approximately)

Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable

Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

Polarity: Cathode indicated by Polarity Band

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating	Symbol	MUR						Unit
		405	410	415	420	440	460	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	400	600	V
Average Rectified Forward Current (Square Wave) (Mounting Method #3 Per Note 2)	$I_{F(AV)}$	4.0 @ T_A = 80°C				4.0 @ T_A = 40°C		A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, half wave, single phase, 60 Hz)	I_{FSM}	125				110		A
Operating Junction Temperature & Storage Temperature	T_J, T_{stg}	−65 to +175						°C

ELECTRICAL CHARACTERISTICS

Rating	Symbol	MUR						Unit
		405	410	415	420	440	460	
Maximum Instantaneous Forward Voltage (Note 1) (i_F = 3.0 A, T_J = 150°C) (i_F = 3.0 A, T_J = 25°C) (i_F = 4.0 A, T_J = 25°C)	v_F	0.71 0.88 0.89				1.05 1.25 1.28		V
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, T_J = 150°C) (Rated dc Voltage, T_J = 25°C)	i_R	150 5				250 10		μA
Maximum Reverse Recovery Time (I_F = 1.0 A, di/dt = 50 A/μs) (I_F = 0.5 A, i_R = 1.0 A, I_{REC} = 0.25 A)	t_{rr}	35 25				75 50		ns
Maximum Forward Recovery Time (I_F = 1.0 A, di/dt = 100 A/μs, Recovery to 1.0 V)	t_{fr}	25				50		ns
Controlled Avalanche Energy (Maximum)	W_{aval}				5			mJ

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

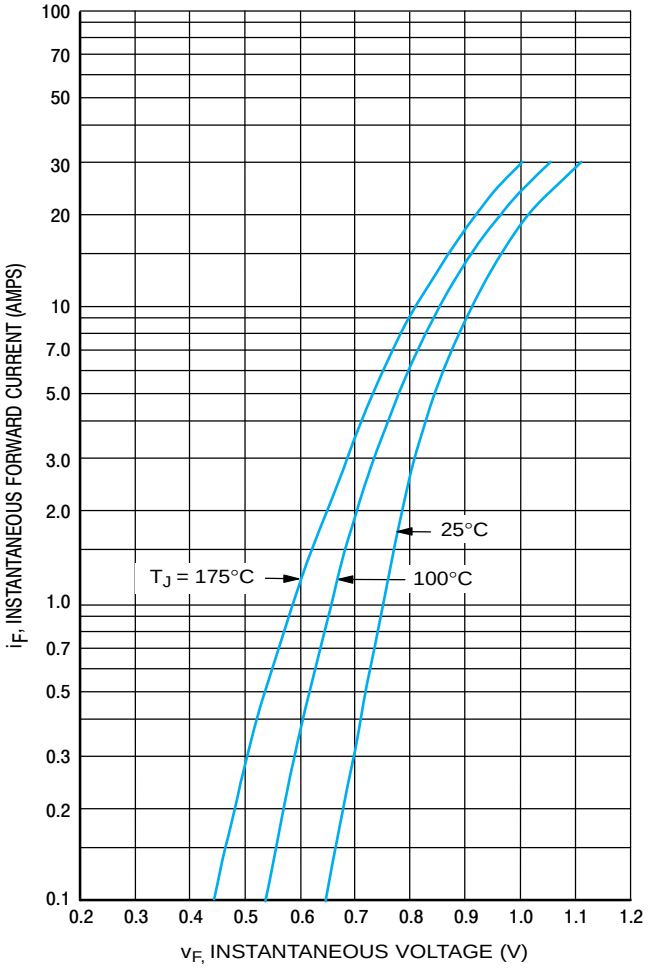


Figure 1. Typical Forward Voltage

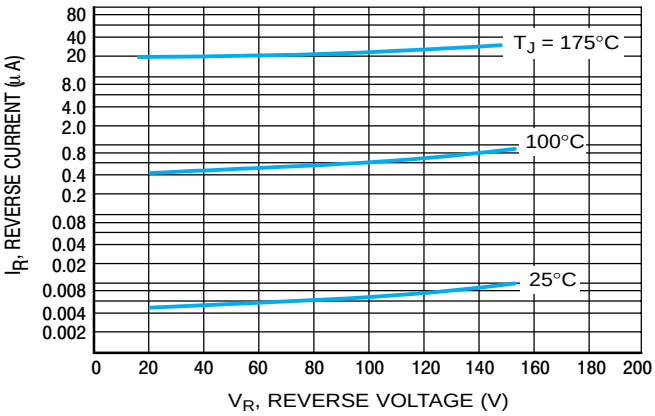


Figure 2. Typical Reverse Current

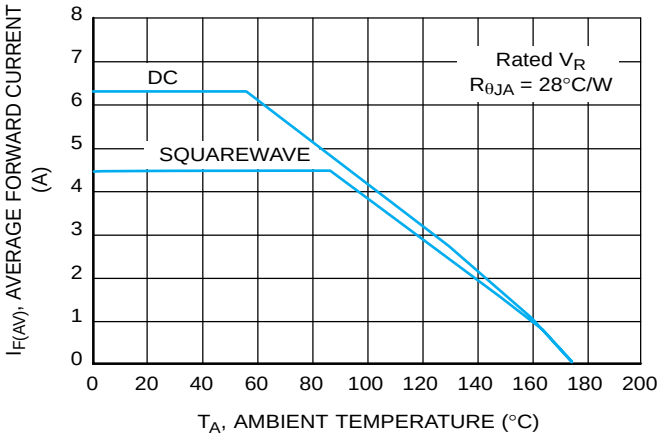


Figure 3. Current Derating (Mounting Method #3 Per Note 2)

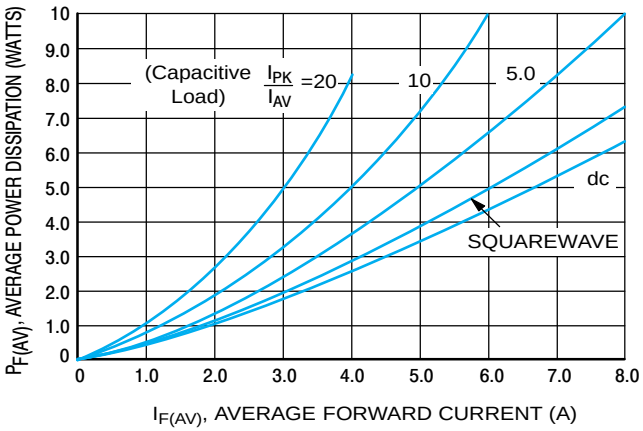


Figure 4. Power Dissipation

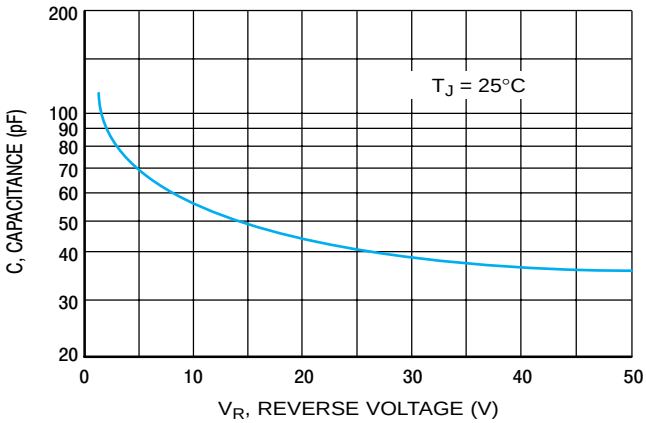


Figure 5. Typical Capacitance

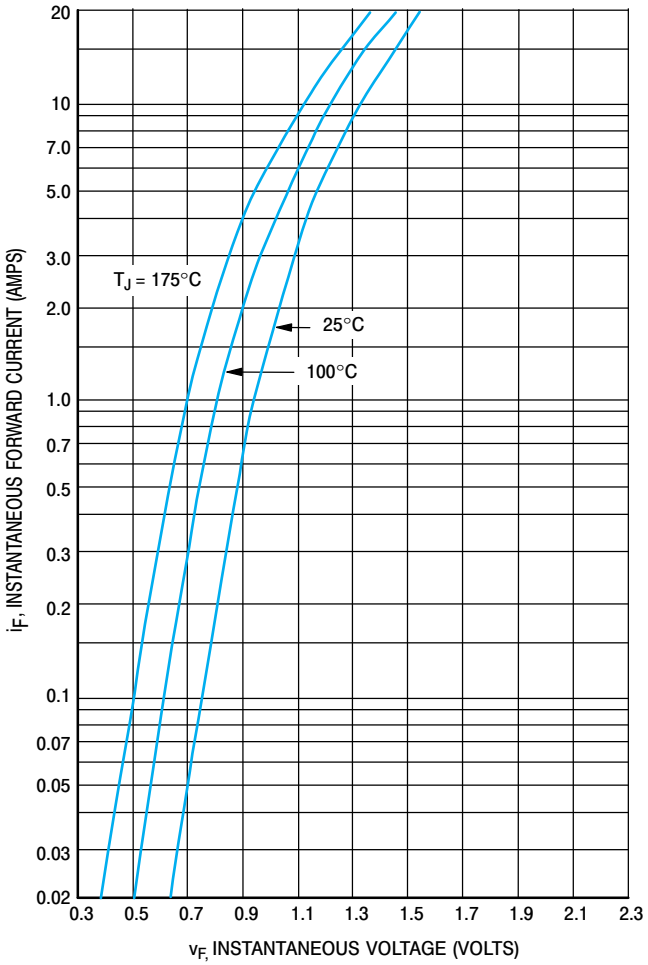


Figure 6. Typical Forward Voltage

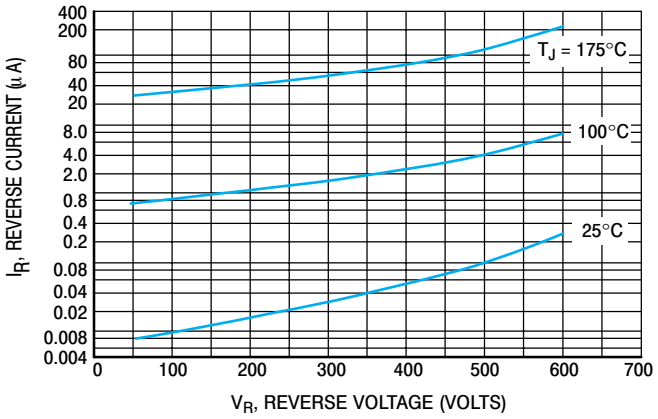


Figure 7. Typical Reverse Current

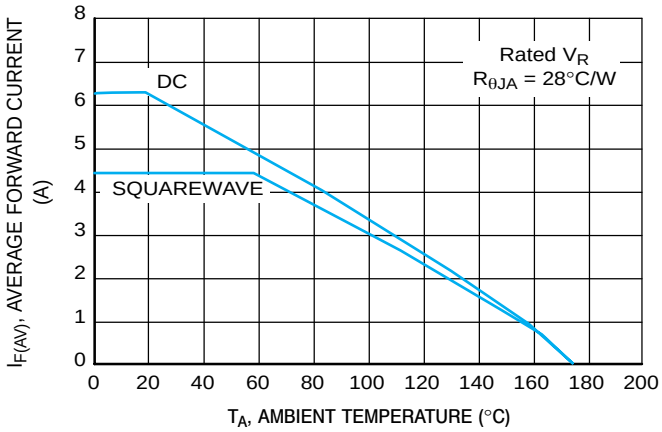


Figure 8. Current Derating
(Mounting Method #3 Per Note 2)

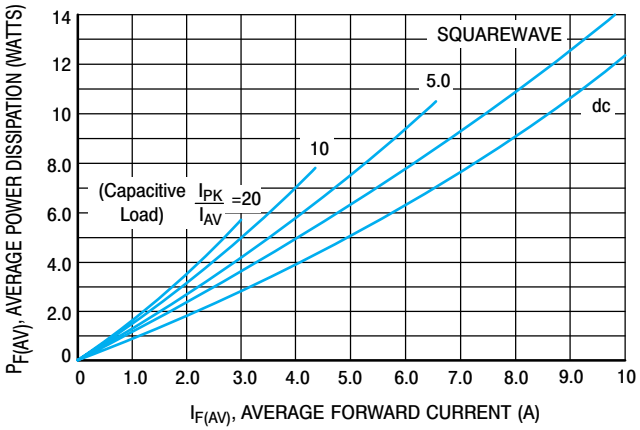


Figure 9. Power Dissipation

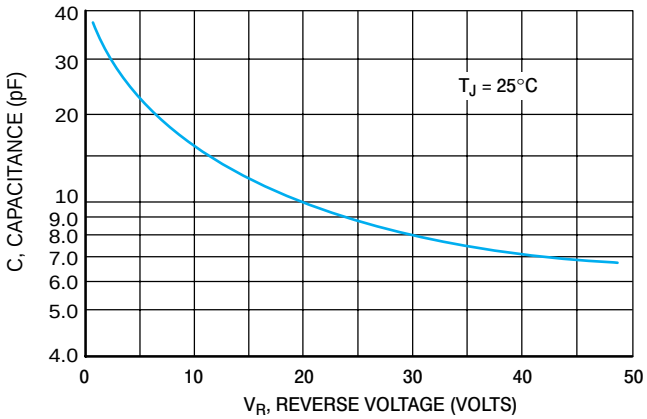


Figure 10. Typical Capacitance