

FAST RECOVERY RECTIFIER

FR1001 THRU FR1007

Vishaymas General Semiconductor

FEATURES

- The plastic package carries Underwriters
- Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed:
250°C/10 seconds, 0.375" (9.5mm)
lead length, 5 lbs. (2.3kg) tension

MECHANICAL DATA

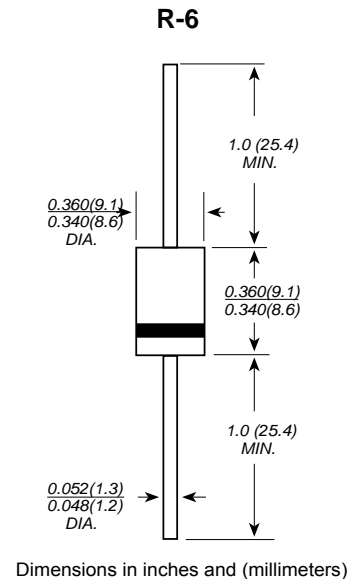
Case: R-6 molded plastic body

Terminals: Plated axial leads, solderable
per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position Any

Weight: 0.072 ounce, 2.05 grams



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 C ambient temperature unless otherwise specified. Single phase half-wave
60Hz, resistive or inductive load, for capacitive load current derate by 20%.

Characteristic	SYMBOLS	FR 1001	FR 1002	FR 1003	FR 1004	FR 1005	FR 1006	FR 1007	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A=55^\circ\text{C}$	$I_{(AV)}$	10.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	300.0							A
Maximum instantaneous forward voltage at 10.0A	V_F	1.3							V
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=55^\circ\text{C}$	I_R	10.0 150.0							μA
Maximum reverse recovery time (NOTE 1)	t_{rr}	150			250		500		ns
Typical junction capacitance (NOTE 2)	C_J	150.0							pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	10.0							$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							$^\circ\text{C}$

Note: 1. Reverse recovery condition $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$

2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

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

FIG. 1- FORWARD CURRENT DERATING CURVE

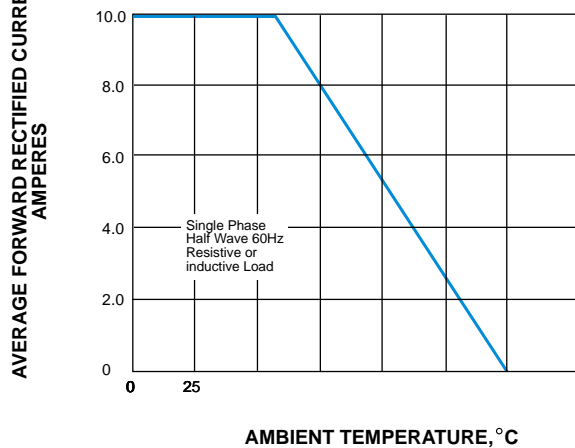


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

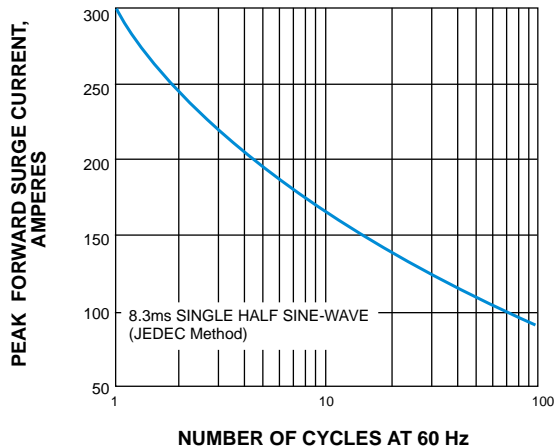


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

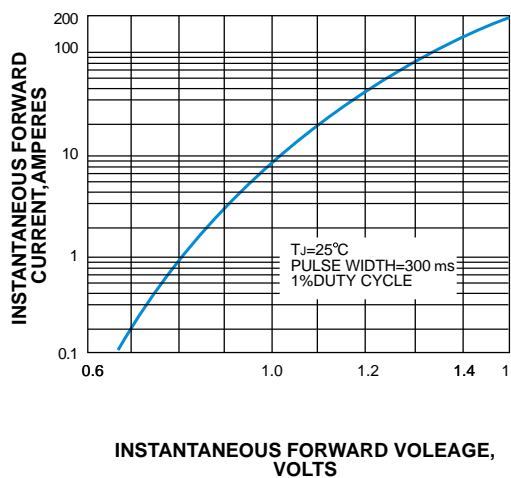


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

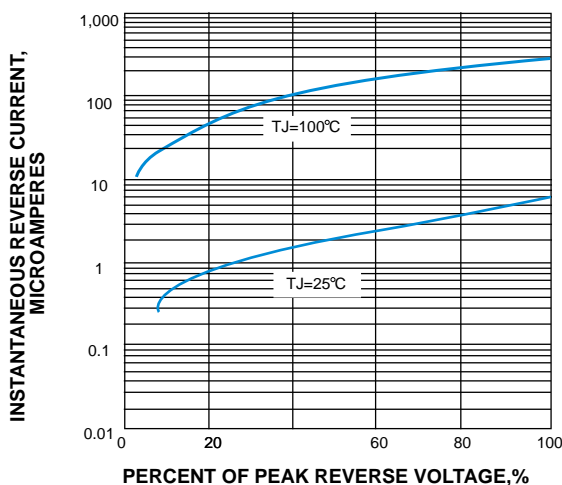


FIG. 5-TYPICAL JUNCTION CAPACITANCE

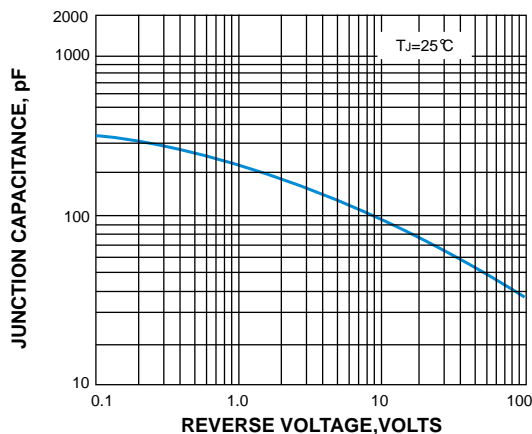


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

