1F1 THRU 1F7

FAST RECOVERY RECTIFIER

Reverse Voltage - 50 to 1000 Volts   Forward Current - 1.0 Ampere

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
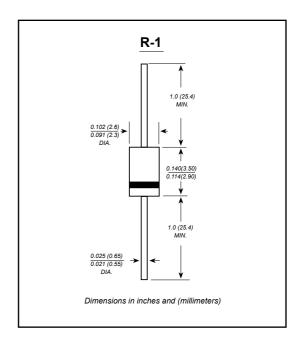
MECHANICAL DATA

Case: R-1 molded plastic body
Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight:0.007 ounce, 0.20 grams

R-1

1.0 (25.4) MIN.

$\frac{0.102 (2.6)}{0.091 (2.3)}$ DIA.

$\frac{0.140(3.50)}{0.114(2.90)}$

1.0 (25.4) MIN.

$\frac{0.025 (0.65)}{0.021 (0.55)}$ DIA.

Dimensions in inches and (millimeters)

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	1F1	1F2	1F3	1F4	1F5	1F6	1F7	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 at T_A=25°C	$I_{(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	25.0							A
Maximum instantaneous forward voltage at 1.0A	V_F	1.3							V
Maximum DC reverse current T_A=25°C at rated DC blocking voltage T_L= 55 °C	I_R	5.0 100.0							μA
Maximum reverse recovery time (NOTE 1)	t_{rr}	150				250	500		ns
Typical junction capacitance (NOTE 2)	C_J	15.0							pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	50.0							°C/W
Operating junction and storage temperature range	T_J,T_{STG}	-65 to +150							°C

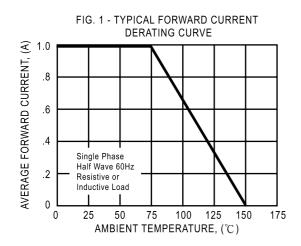**Note:**1.Reverse recovery condition I_F=0.5A,I_R=1.0A,Irr=0.25A
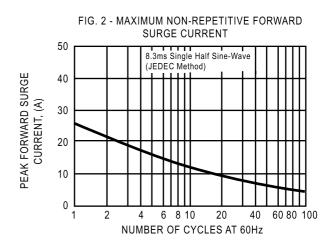　　　2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
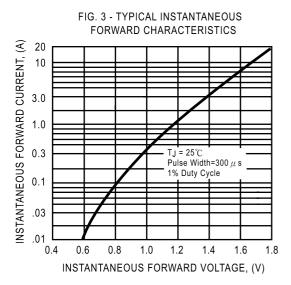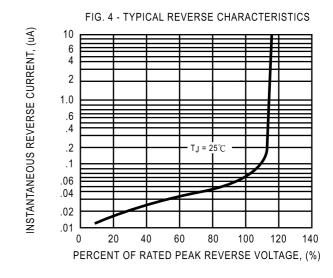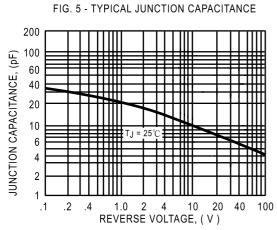　　　3.Thermal resistance from junction to ambient at 0.375″(9.5mm)lead length,P.C.B. mounted

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

AVERAGE FORWARD CURRENT, (A)

AMBIENT TEMPERATURE, (℃)

Single Phase Half Wave 60Hz Resistive or Inductive Load

FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT, (A)

NUMBER OF CYCLES AT 60Hz

8.3ms Single Half Sine-Wave (JEDEC Method)

FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

INSTANTANEOUS FORWARD CURRENT, (A)

INSTANTANEOUS FORWARD VOLTAGE, (V)

$T_J = 25℃$
Pulse Width=300 μ s
1% Duty Cycle

FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT, (uA)

PERCENT OF RATED PEAK REVERSE VOLTAGE, (%)

$T_J = 25℃$

FIG. 5 - TYPICAL JUNCTION CAPACITANCE
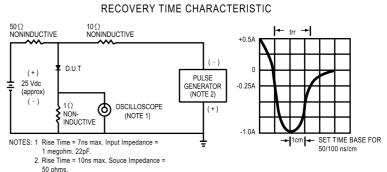
JUNCTION CAPACITANCE, (pF)

REVERSE VOLTAGE, (V)

$T_J = 25℃$

FIG. 6 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

50Ω NONINDUCTIVE

10Ω NONINDUCTIVE

(+)
25 Vdc (approx)
(–)

D.U.T

1Ω NON-INDUCTIVE

OSCILLOSCOPE (NOTE 1)

(–)
PULSE GENERATOR (NOTE 2)
(+)

trr
+0.5A
0
-0.25A
-1.0A
1cm
SET TIME BASE FOR 50/100 ns/cm

NOTES: 1 Rise Time = 7ns max. Input Impedance = 1 megohm. 22pF.
2. Rise Time = 10ns max. Souce Impedance = 50 ohms.