

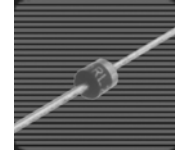


FR251 thru FR257

Fast Recovery Rectifiers
Reverse Voltage 50 to 1000 Volts Forward Current 2.5 Amperes

Features

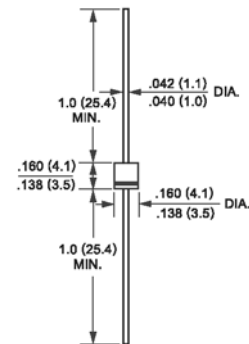
- ◆ Fast switching
- ◆ Low leakage
- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High current surge
- ◆ High reliability
- ◆ T_J is 150°C (Max.) and T_{STG} is 175°C (Max.) with PI glue



R-3

Mechanical Data

- ◆ Case: Molded plastic
- ◆ Epoxy: UL 94V-O rate flame retardant
- ◆ Lead: MIL-STD-202E method 208C guaranteed
- ◆ Mounting position: Any
- ◆ Weight: 0.021 ounce, 0.60 gram



Maximum Ratings and Electrical Characteristics

Dimensions in inches and (millimeters)

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

Parameter	Symbols	FR 251	FR 252	FR 253	FR 254	FR 255	FR 255 -STR	FR 256	FR 257	FR 257 -STR	Units
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	600	800	1000	1000	Volts
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	420	560	700	700	Volts
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	600	800	1000	1000	Volts
Maximum average forward rectified current at $T_A=75^\circ\text{C}$	I_{AV}	2.5									Amps
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	150.0									Amps
Maximum instantaneous forward voltage at 2.5A DC	V_F	1.3									Volts
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$	I_R	5.0									μA
Maximum full load reverse current average, full cycle .375" (9.5mm) lead length at $T_A=55^\circ\text{C}$		100									μA
Maximum reverse recovery time (Note 1)	t_{rr}	150			250		150	500		250	nS
Typical junction capacitance (Note 2)	C_J	60									pF
Operating junction temperature range	T_J	-55 to +125									$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150									$^\circ\text{C}$

- Notes:**
1. Test Conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$
 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

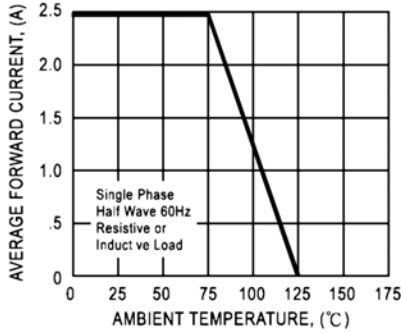


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

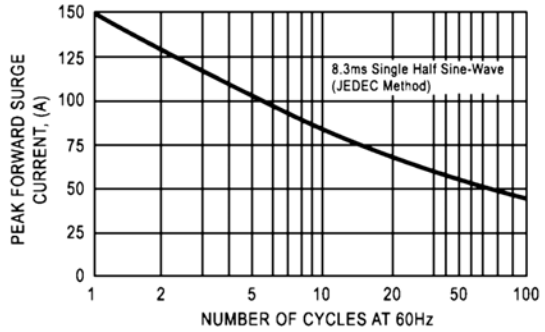


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

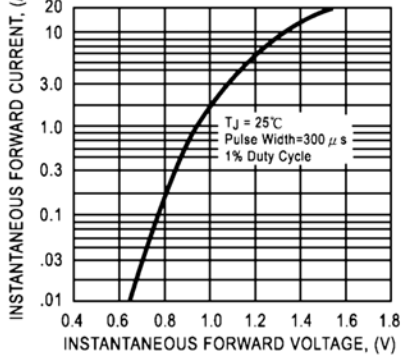


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

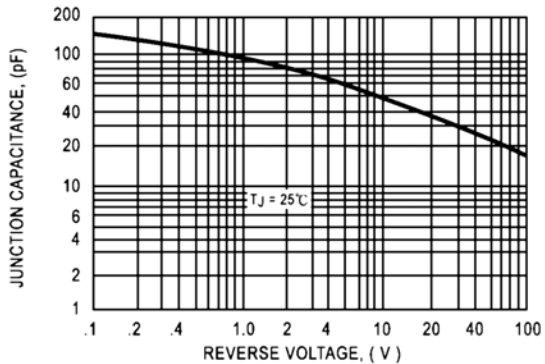


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

