

FAST RECOVERY RECTIFIER

VOLTAGE RANGE 200 to 1000 Volts CURRENT 1.0 Ampere

FEATURES

- * High switching capability
- * Low leakage
- * Low forward voltage drop
- * High current capability
- * High surge current capability

MECHANICAL DATA

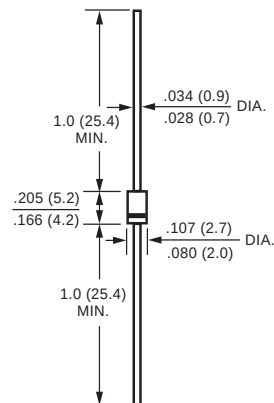
- * Case: Molded plastic
- * Epoxy: Device has UL flammability classification 94V-0
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 0.33 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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



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Dimensions in inches and (millimeters)

MAXIMUM RATINGS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)

RATINGS	SYMBOL	1N4942	1N4944	1N4946	1N4947	1N4948	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	200	400	600	800	1000	Volts
Maximum RMS Voltage	V_{RMS}	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	V_{DC}	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current at $T_A = 75^\circ\text{C}$	I_o	1.0					Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30					Amps
Typical Junction Capacitance (Note 2)	C_j	15					pF
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150					$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)

CHARACTERISTICS	SYMBOL	1N4942	1N4944	1N4946	1N4947	1N4948	UNITS
Maximum Instantaneous Forward Voltage at 1.0A 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					μAmps
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at $T_L = 55^\circ\text{C}$		100					μAmps
Maximum Reverse Recovery Time (Note 1)	t_{rr}	150		250		500	nSec

NOTES : 1. Test Conditions: $I_F = 0.5A$, $I_R = -1.0A$, $I_{RR} = -0.25A$

2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

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RATING AND CHARACTERISTIC CURVES (1N4942 THRU 1N4948)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

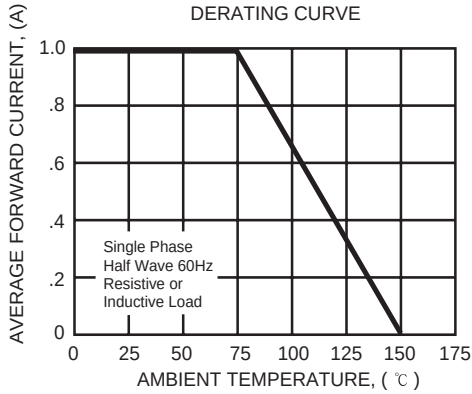


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

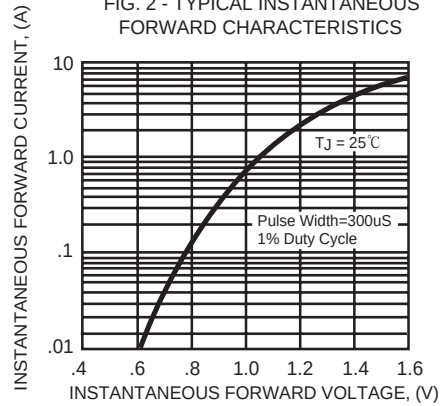


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

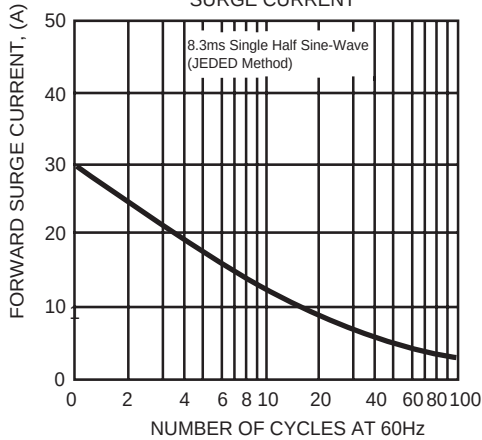


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

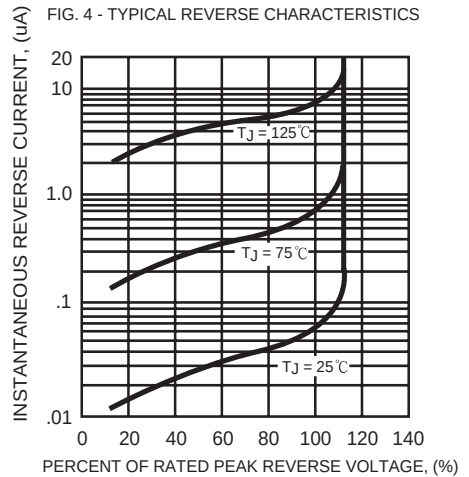


FIG. 3 - TYPICAL JUNCTION CAPACITANCE

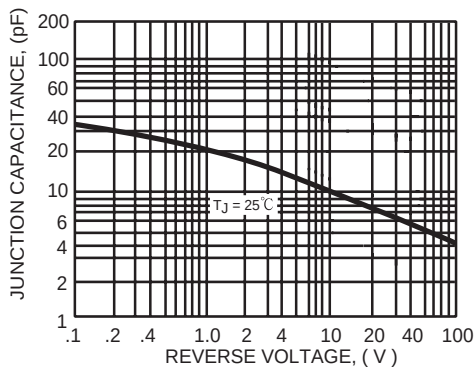
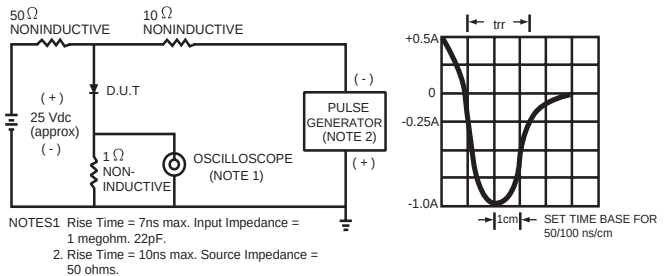


FIG. 6 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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