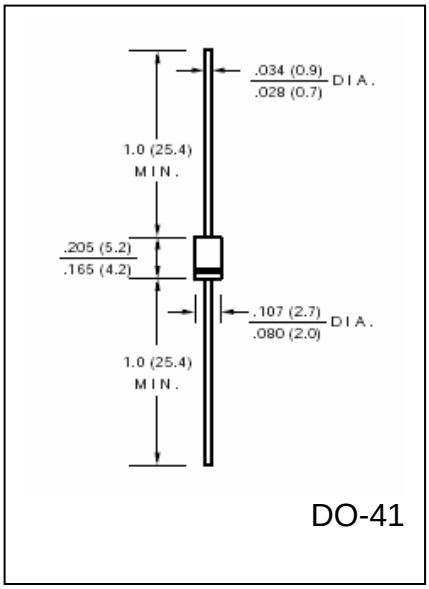
FAST RECOVERY RECTIFIER

1N4942 THRU 1N4948

VOLTAGE RANGE **200 to 1000 Volts**
CURRENT **1.0 Ampere**

FEATURES

- Fast Switching for high efficiency
- Low reverse leakage
- High forward surge current capability
- High Temperature soldering guaranteed: 260 ^{O}C / 10 second, 0.375" (9.5mm) lead length



DO-41

MECHANICAL DATA

- Case: Transfer molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Polarity: Color band denotes cathode end
- Mounting Position: any
- Weight: 0.012 ounce, 0.33 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25^{O}C ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

	SYMBOLS	1N4942	1N4944	1N4946	1N4947	1N4948	UNIT
Maximum Repetitive 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, 0.375" (9.5mm) lead length At T_C = 75^{O}C	$I_{(AV)}$	1.0					Amps
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	I_{FSM}	30					Amps
Maximum Instantaneous Forward Voltage @ 1.0A	V_F	1.3					Volts
Maximum DC Reverse Current at Rated T_A = 25 ^{O}C	I_R	5.0					µA
DC Blocking Voltage per element T_A = 125 ^{O}C		200					
Maximum Reverse Recovery Time Test conditions I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A	t_{rr}	150		250		500	µS
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	C_J	15					pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	50					^{O}C/W
Operating Junction Temperature Range	T_J	(-65 to +150)					^{O}C
Storage Temperature Range	T_{STG}	(-65 to +150)					^{O}C

Notes:

1. Thermal resistance from Junction to ambient at 0.375" (9.5mm) lead length mounted on PCB

RATINGS AND CHARACTERISTIC CURVES 1N4942 THRU 1N4948

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

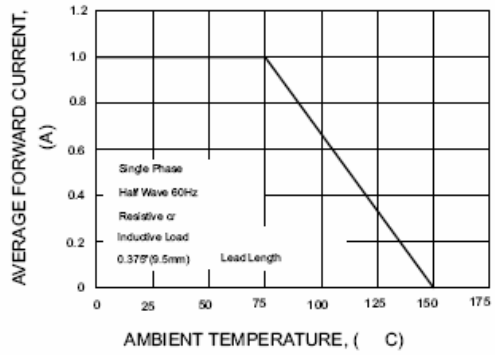


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

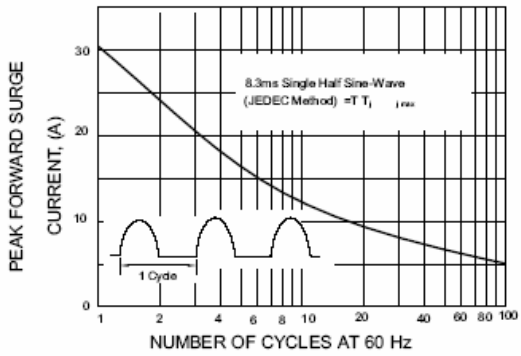


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

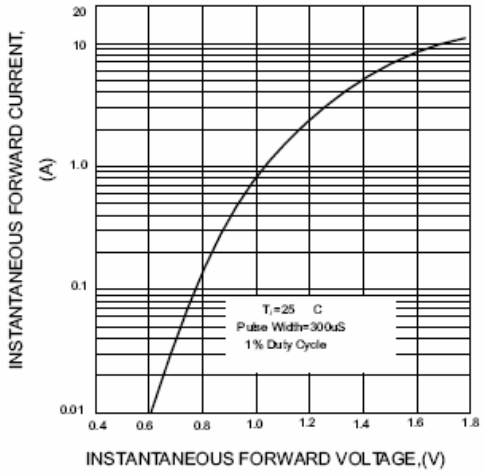


FIG.4-TYPICAL REVERSE CHARACTERISTICS

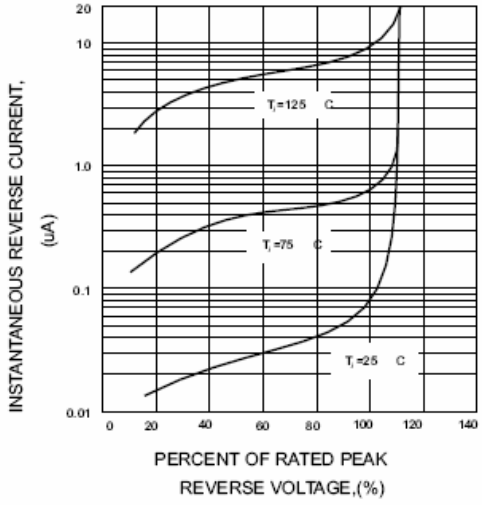


FIG.5-TYPICAL JUNCTION CAPACITANCE

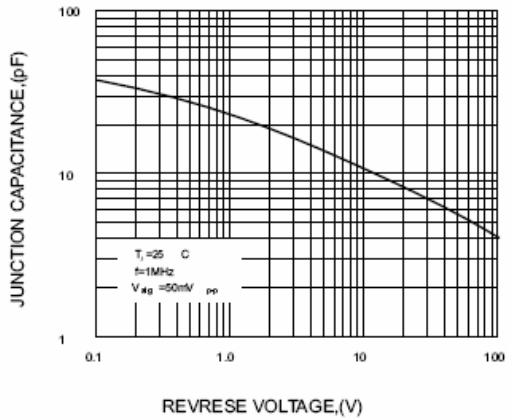
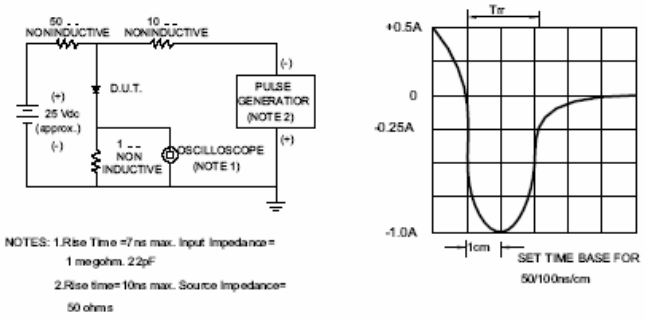


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES: 1.Rise Time =7 ns max. Input Impedance= 1 megohm. 22pF

2.Rise time=10ns max. Source Impedance= 50 ohms