



## FAST RECOVER RECTIFIER

1N4942 THRU 1N4948

VOLTAGE RANGE  
CURRENT

200 to 1000 Volts  
1.0 Ampere

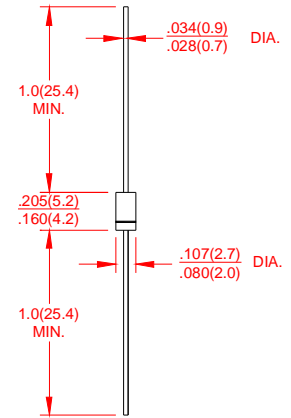
DO-41

### FEATURES

- Low cost construction
- Fast switching for high efficiency.
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed:  
260°C/10 seconds/.375" (9.5mm) lead length at 5 lbs (2.3kg) tension

### MECHANICAL DATA

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



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 derate current by 20%

	SYMBOLS	1N 4942	1N 4944	1N 4946	1N 4947	1N 4948	UNITS
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 $T_A = 75^\circ\text{C}$	$I_{(AV)}$	1.0					Amp
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 DC Blocking Voltage	$T_A = 25^\circ\text{C}$	5.0					$\mu\text{A}$
	$T_A = 100^\circ\text{C}$	100					
Maximum Reverse Recovery Time (Note 3) $T_J = 25^\circ\text{C}$	$t_{rr}$	150	250	500			ns
Typical Junction Capacitance (Note 1)	$C_J$	15					pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	50					$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	(-55 to +150)					$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	(-55 to +150)					$^\circ\text{C}$

#### Notes:

1. Measured at 1.0MHz and Applied Reverse Voltage of 4.0Volts.
- 2 Thermal Resistance from junction to Ambient at .375" (9.5mm) lead length, P.C. board mounted.
3. Reverse Recovery Test Conditions:  $I_f = 0.5\text{A}$ ,  $I_r = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$



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## RATING AND CHARACTERISTIC CURVES 1N4942 THRU 1N4948

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

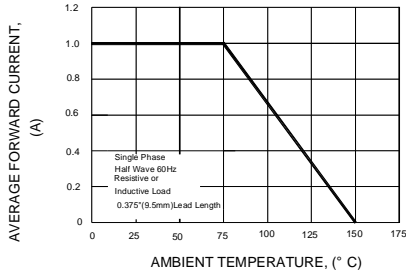


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

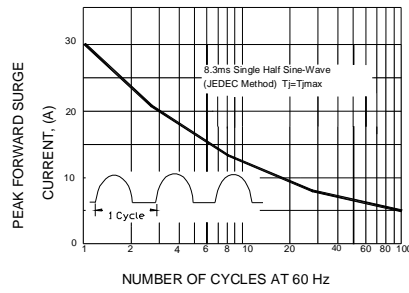


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

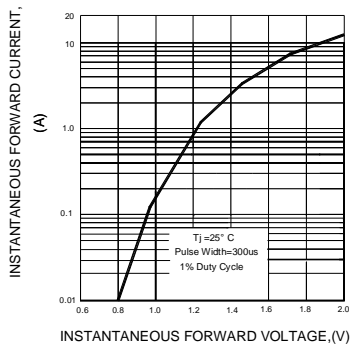


FIG.4-TYPICAL REVERSE CHARACTERISTICS

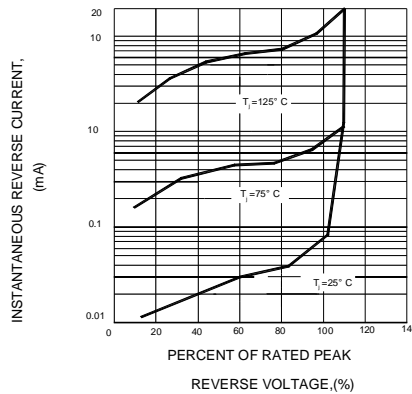


FIG.5-TYPICAL JUNCTION CAPACITANCE

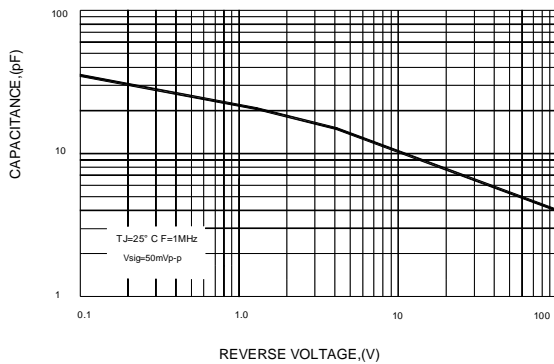


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

