

Silicon Diode

1N4948

Fast Switching Rectifier

1000V / 1A

DATASHEET

OEM – General Semiconductor

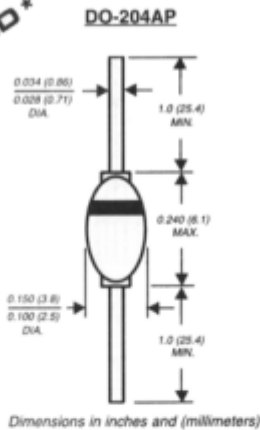
Source: General Semiconductor Databook 1998

1N4942 THRU 1N4948

GLASS PASSIVATED JUNCTION FAST SWITCHING RECTIFIER

Reverse Voltage - 200 to 1000 Volts Forward Current - 1.0 Ampere

PATENTED*



* Brazed-lead assembly is covered by Patent No. 3,930,306

FEATURES

- ◆ High temperature metallurgically bonded construction
- ◆ Hermetically sealed package
- ◆ Glass passivated cavity-free junction
- ◆ 1.0 Ampere operation at $T_A=55^\circ\text{C}$ with no thermal runaway
- ◆ Typical I_R less than $0.1\mu\text{A}$
- ◆ Capable of meeting environmental standards of MIL-S-19500
- ◆ Fast switching for high efficiency
- ◆ High temperature soldering guaranteed: $350^\circ\text{C}/10$ seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension



MECHANICAL DATA

Case: JEDEC DO-204AP solid glass body
Terminals: Solder plated axial leads, solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Weight: 0.02 ounce, 0.56 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOLS	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
* Minimum reverse breakdown voltage at $50\mu\text{A}$	$V_{(BR)}$	220	440	660	880	1100	Volts
* Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A=55^\circ\text{C}$	$I_{(AV)}$	1.0					Amp
* Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	25.0					Amps
* Maximum instantaneous forward voltage at: 1.0A at 2.0A, $T_A=-40^\circ\text{C}$	V_F	1.3 2.5					Volts
* Maximum DC reverse current at Rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=175^\circ\text{C}$	I_R	1.0 500.0					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)	$R_{\theta JA}$	55.0					$^\circ\text{C}/\text{W}$
* Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175					$^\circ\text{C}$

NOTES:

- (1) Reverse recovery test conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{rr}=25\text{A}$
- (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
- (3) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted
*JEDEC registered values

RATINGS AND CHARACTERISTIC CURVES 1N4942 THRU 1N4948

