International Semiconductor, Inc.

High Current Plastic Silicon Rectifiers

1N4139 thru 1N4146

VOLTAGE RANGE
50 to 1000 PRV

CURRENT
3.0A at 105°C
1.5A at 140°C

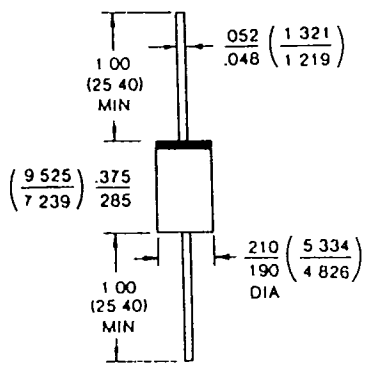
FEATURES

- High surge current capability
- Plastic Package has Underwriters Laboratory Flammability Classification 94V-0 Utilizing Flame Retardant Epoxy Molding Compound
- Void-free plastic in a DO-201-AD package
- High current operation 3.0 ampere @ $T_A = 105°C$
- Exceeds environmental standards of MIL-STD-19500/228

MECHANICAL DATA

Case ..... Molded Plastic
Terminals Axial leads, solderable per MIL-STD-202, Method 208
Polarity ..... Color band denotes cathods
Mounting Position ..... Any
Weight ..... 0.04 ounces

DO-201-AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

* @ T_A = 25°C unless otherwise specified Single phase, half-wave, 60Hz, resistive or inductive load
** All values except Maximum RMS Voltage are registered JEDEC parameters

	1N4139	1N4140	1N4141	1N4142	1N4143	1N4144	1N4145	1N4146	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	1200	V
Maximum RMS Voltage	35	70	140	280	420	560	700	840	V
Maximum DC Blocking Voltage to 150 C Maximum	50	100	200	400	600	800	1000	1200	V
Maximum Average Forward Rectified Current at 105 C	3.0								A
Maximum Average Forward Rectified Current at 140 C	1.5								A
Maximum Overload Surge Current at 1 cycle	200								A
Maximum Forward Voltage at 3.0 ADC	1.2								V
Maximum Full Load Reverse Current Full Cycle Average at 105 C	0.5								mADC
Maximum DC Reverse Current at Rated DC Blocking Voltage and 105 C	0.5								mADC
Operating Temperature Range	-65 to +170								C
Storage Temperature Range	-65 to +175								C

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RATING AND CHARACTERISTIC CURVES
1N4139 thru 1N4146

Fig. 1–Typical Reverse Characteristics

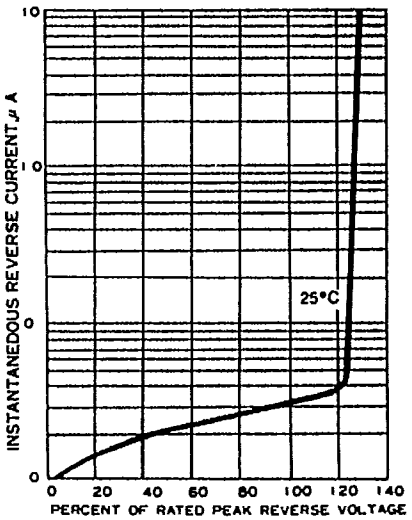


Fig. 2–Forward Derating Curve

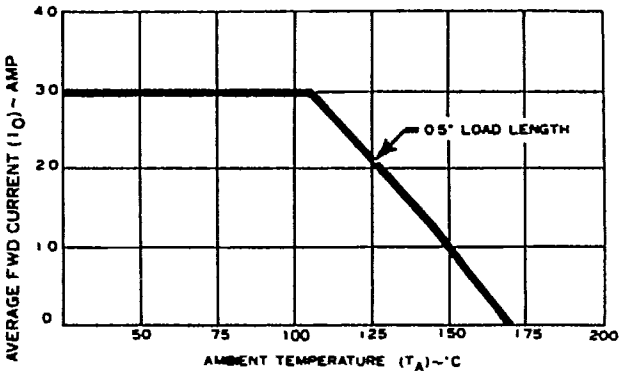
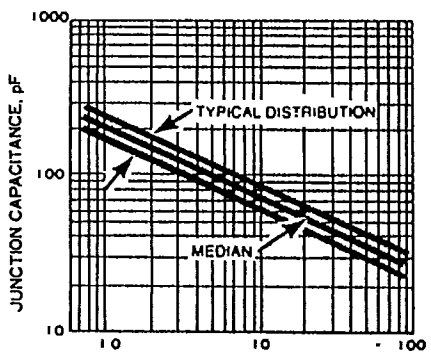


Fig. 3–Capacitance Characteristics



NOTE WHEN PLOTTING CAPACITANCE VERSUS VOLTAGE IT IS CONVENIENT TO PLOT ON LOG-LOG PAPER AND TO PLOT APPLIED VOLTAGE PLUS BARRIER POTENTIAL (BARRIER POTENTIAL = 0.7 VOLTS) AS THE ABSCISCA THIS WILL GIVE A STRAIGHT LINE OF SLOPE APPROXIMATELY 1/2 OF WHICH CAN BE EASILY EXTRAPOLATED CAPACITANCE AT ZERO APPLIED VOLTS IS FOUND AT 0.7 VOLTS ON THE PLOT THIS TECHNIQUE WAS USED FOR THE CURVE SHOWN

FIG. 4- Typical Forward Characteristics

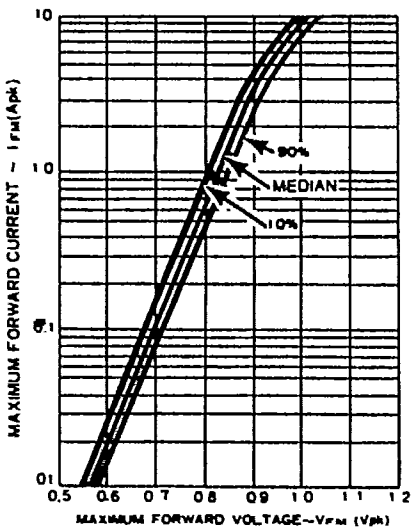
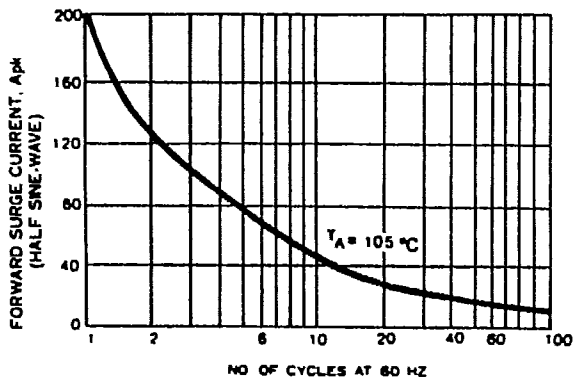


Fig. 5–Maximum Overload Surge Current



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