SILICON RECTIFIER

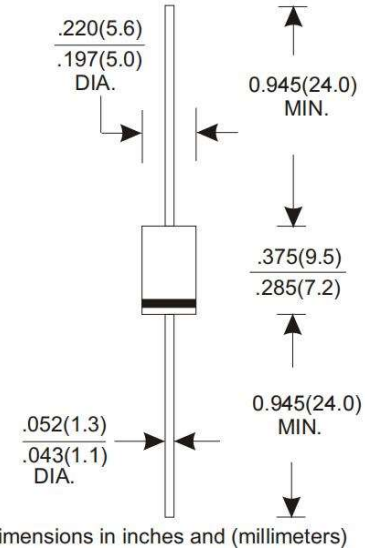
1N5401 THRU 1N5408

VOLTAGE RANGE 50 to 1000 Volts
CURRENT 3.0 Ampere

RoHS COMPLIANT

Features

- Low forward voltage drop
- High forward surge capability
- High reliability
- High temperature soldering guaranteed
  260℃/10 seconds,0.375”(9.5mm)lead length at 5 lbs(2.3kg) tension



Dimensions in inches and (millimeters)

Mechanical Data

- Case: Transfer molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Polarity: Color band denotes cathode end
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Mounting position: Any
- Weight: 0.042ounce, 1.19 grams

Maximum Ratings and Electrical Characteristics

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

TYPE NUMBER		SYMBOLS	1N5401	1N5402	1N5403	1N5404	1N5406	1N5407	1N5408	UNITS
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage		V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current(FIG.1) 0.375”(9.5mm) lead length at T_A=100℃		$I_{(AV)}$	3.0							Amps
Peak Forward Surge Current 8.3mS single half sine-wave superimposed on rated load (JEDEC method)		I_{FSM}	200							Amps
Maximum Instantaneous Forward Voltage at 3.0A		V_F	1.1							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_A = 25℃	I_R	5.0							μA
	T_A = 125℃		50							
Typical Junction Capacitance (NOTE 1)		C_J	50							pF
Typical Thermal Resistance (NOTE 2)		$R_{\theta JA}$	18							℃/W
Operating and Storage Temperature Range		T_J,T_{STG}	-55 to +150							℃

Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Thermal Resistance from Junction to Ambient at. 375”(9.5mm)lead length, P.C. board mounted.

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Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

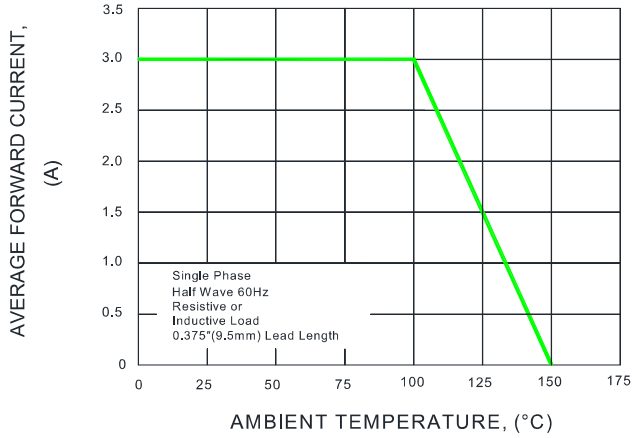


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

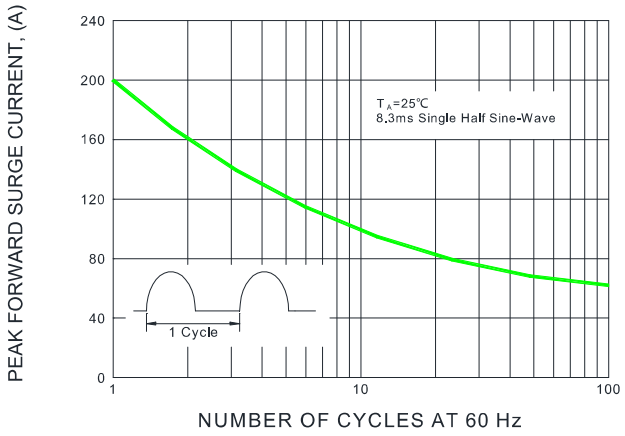


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

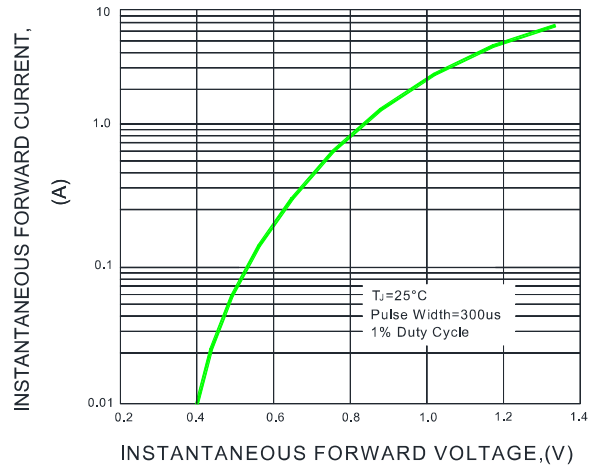


FIG.4-TYPICAL REVERSE CHARACTERISTICS

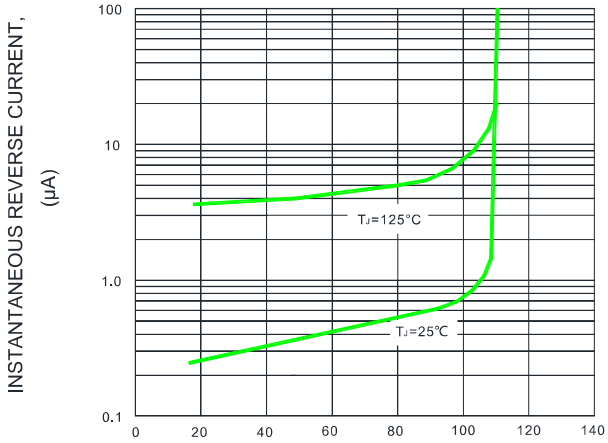
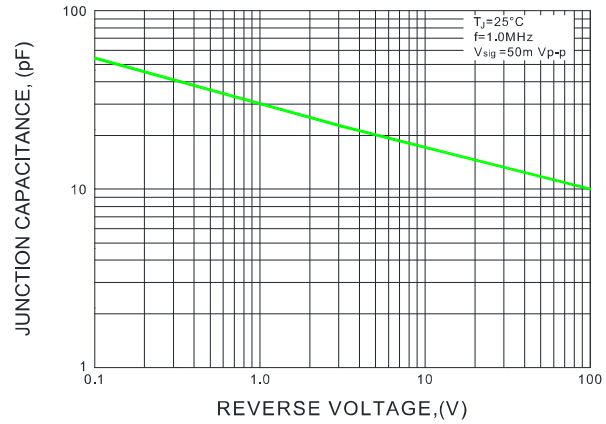


FIG.5-TYPICAL JUNCTION CAPACITANCE



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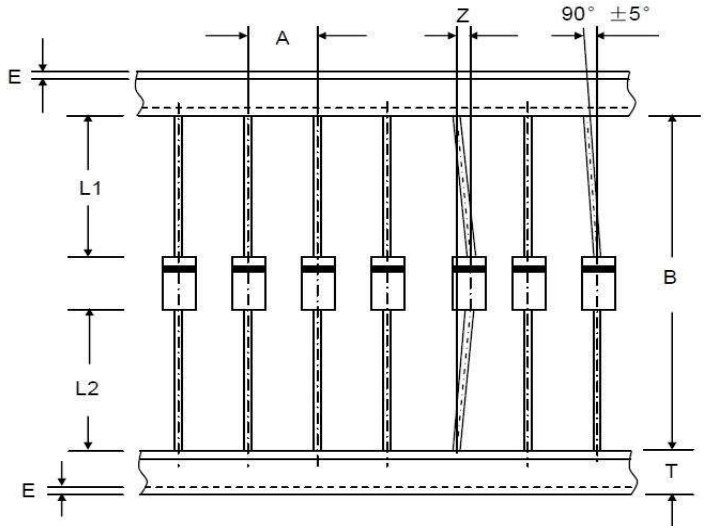
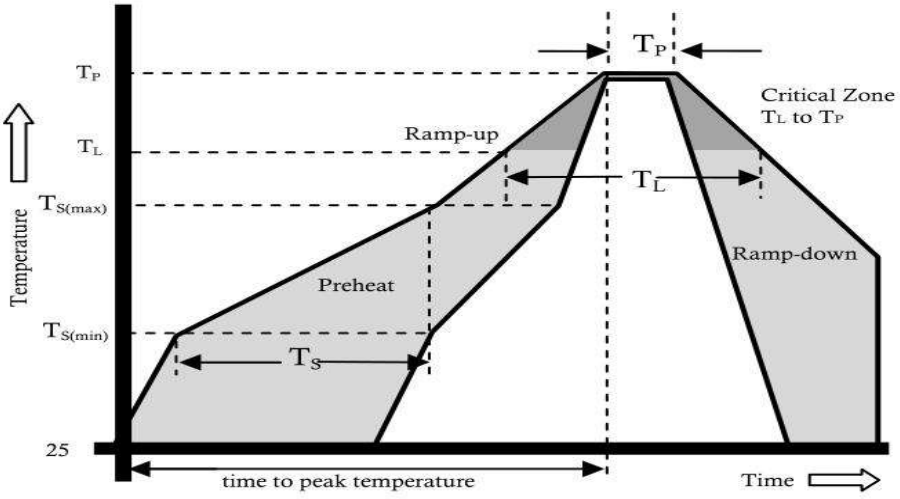
Axial Lead Taping Specifications for Rectifiers



Component Outline	Component Pitch A	Inner Tape Pitch B	Cumulative Tolerance
	±0.5mm	+0.5mm -0.4mm	
DO-201AD(DO-27)	10.0mm	52.4mm	2.0mm/20pitch

Item	Symbol	Specifications(mm)	Specifications(inch)
Component alignment	Z	1.2 max	0.048 max
Tape width	T	6.0±0.4	0.236±0.016
Exposed adhesive	E	0.8 max	0.032 max
Body eccentricity	IL1-L2I	1.0 max	0.040 max

Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp(TL) to peak)		3°C/sec. Max.
TS(max) to TL - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature (TL)(Liquidus)	+217°C
	Temperature (TL)	60-150 secs.
Peak Temp (TP)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (TP)		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (TP)		8 min. Max.
Do not exceed		+260°C

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