

3.0Amp Fast Recovery Silicon Rectifiers

PRIMARY CHARACTERISTICS

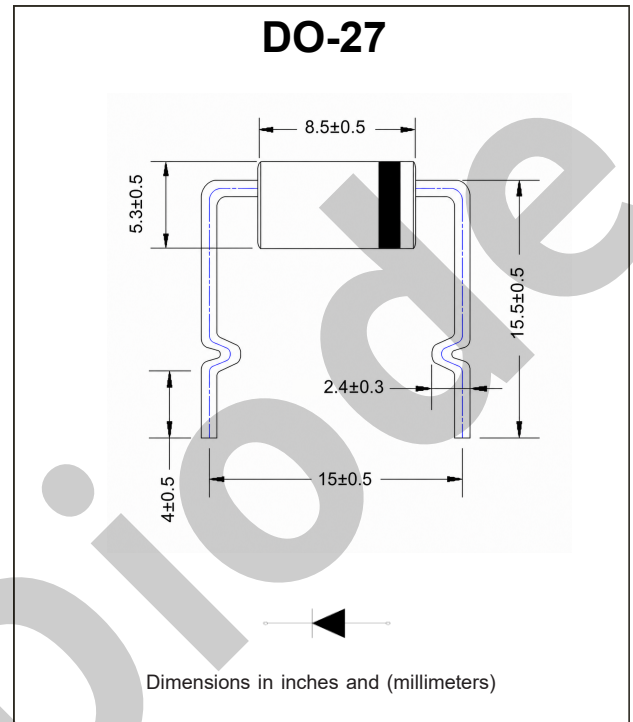
VRRM	I(AV)	VF	I FSM	Tj max
50V~1000V	3.0A	1.30V	150.0A	150°C

Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Open Junction chip
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed: 250°C/10 seconds at terminals

Mechanical Data

- Case: Molded plastic body
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Polarity symbol marking on body
- Mounting Position: Any
- Weight: 0.0345 ounce, 0.98 grams



Maximum Ratings And Electrical Characteristi

Ratings at 25°C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load for capacitive load current derate by 20%.

Parameters	Symbols	FR301	FR302	FR303	FR304	FR305	FR306	FR307	Units
Maximum repetitive peak reverse voltage	VRRM	50	100	200	400	600	800	1000	V
Maximum RMS voltage	VRMS	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	VDC	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at TL =100°C	I(AV)	3.0							A
Maximum instantaneous forward voltage at IF=3.0A	VF	1.30							V
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	IFSM	150.0							A
Maximum DC reverse current T A =25°C at rated DC blocking voltage TA=125°C	IR	10.0 500							μA
Maximum Reverse Recovery Time	Trr	150				250	500		ns
Typical junction capacitance	CJ	60.0							pF
Typical Thermal Resistance	RthJA	45.0							°C/W
Storage temperature range	TJ,TSTG	-55 to +150							°C

Ratings And Characteristic Curves

FIG. 1- DERATING CURVE OUTPUT RECTIFIED CURRENT

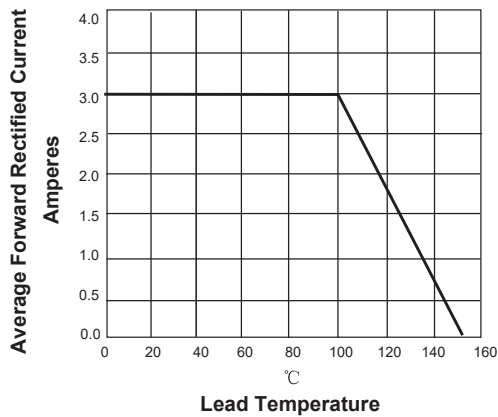


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

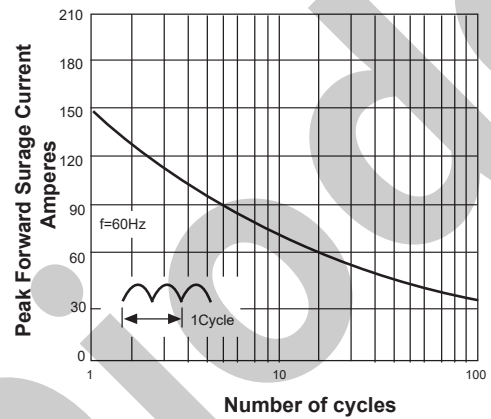


FIG. 3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS

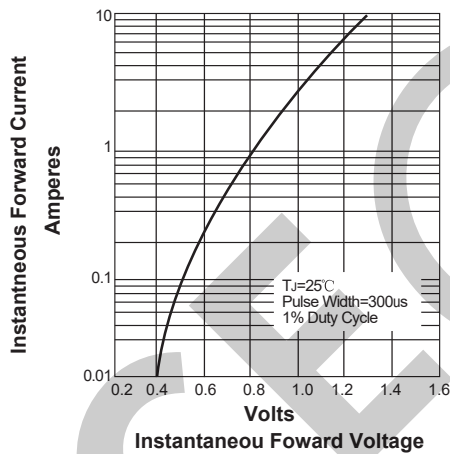
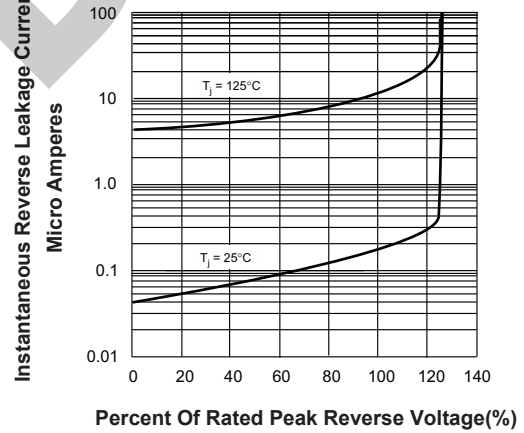
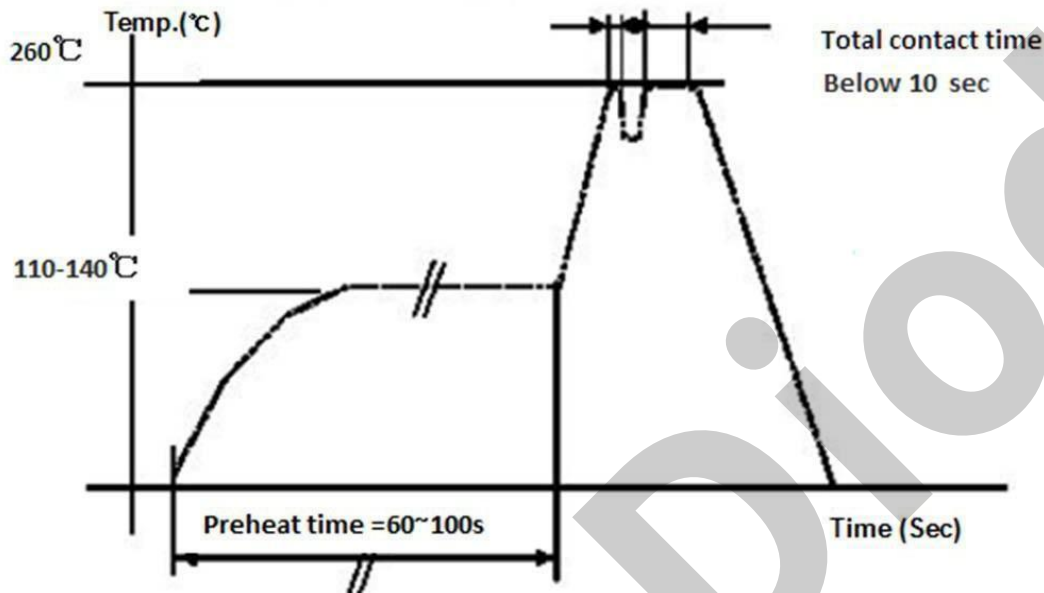


FIG. 4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS

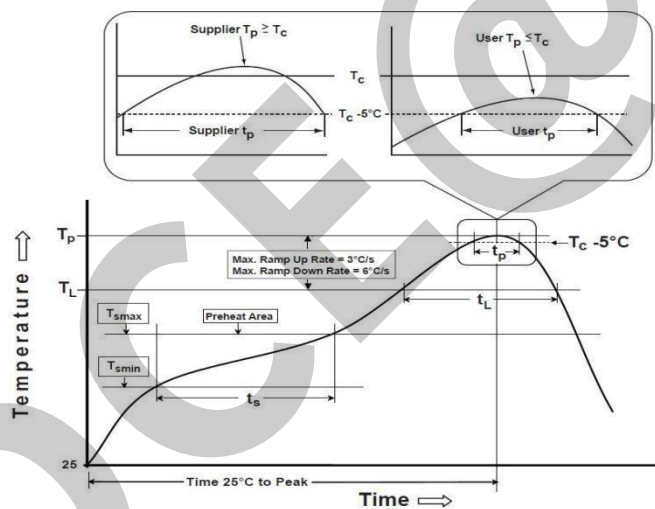


Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020



Preheat/Soak Temperature Min (T _{smin}) Temperature Max (T _{smax}) Time (ts) from (T _{smin} to T _{smax})	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C (Melting Point of Solder)	3°C/sec
Time at Temp. > 217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°C below Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

c) Manual Soldering

When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

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