

Fast Recovery Plastic Rectifiers

Reverse Voltage: 50 to 1000V

Forward Current: 5.0 Amp

Features

- Glass passivated chip junction
- High forward surge capability
- Fast reverse recovery time
- Low reverse leakage
- High temperature soldering guaranteed
260°C/10 seconds at terminals

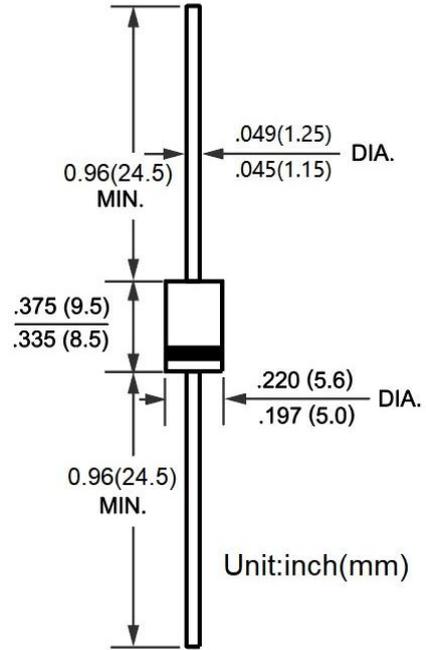
Mechanical Data

- **Package:** DO-27, Molded plastic body
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per MIL-STD-750, Method 2026
- **Polarity:** Color band denotes cathode end

Typical Applications

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes for consumer and telecommunication.

DO-27



Unit: inch(mm)

Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

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

Parameter&Test Conditions	SYM.	FR501G	FR502G	FR503G	FR504G	FR505G	FR506G	FR507G	Unit
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V _{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V _{DC}	50	100	200	400	600	800	1000	V
Average rectified output current @60Hz sine wave, Resistance load, Ta =45°C (FIG.1)	I _{O(AV)}	5.0							A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rated Load	I _{FSM}	150							A
Maximum Thermal Resistance, Junction To Ambient (Note1)	R _{θJA}	20							°C/W
Operating junction and storage temperature range	T _j , T _{STG}	-55 to+150							°C

Electrical Characteristics (Ta=25°C Unless otherwise specified)

Parameter&Test Conditions	SYM.	FR501G	FR502G	FR503G	FR504G	FR505G	FR506G	FR507G	Unit
Maximum Instantaneous Forward Voltage IFM =5A	V _{FM}	1.3							V
Maximum DC reverse current at rated DC blocking voltage	I _R	5							µA
		200							
Maximum reverse recovery time(Note 2)	T _{rr}	150			250		500		ns
Typical junction capacitance(Note3)	C _J	57			31				pF

Notes:

1. Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted with 0.8" x 0.8" (20 mm x 20 mm) copper heatsinks .
2. Reverse recovery time test condition: IF=0.5A IR=1.0A I_{rr}=0.25A .
3. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
4. The typical data above is for reference only.

Rating and Characteristic Curves

FIG. 1- DERATING CURVE OUTPUT RECTIFIED

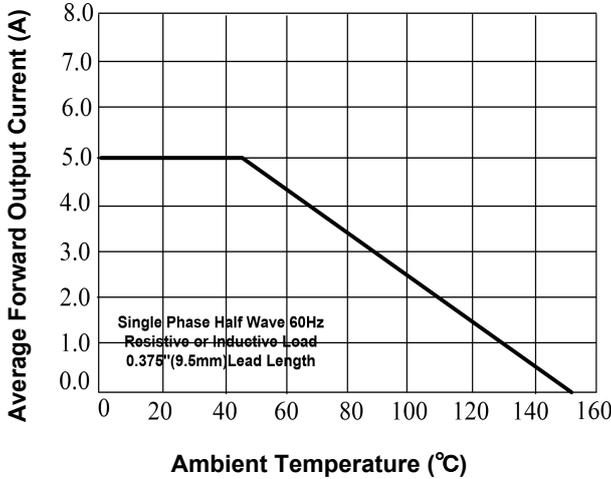


FIG. 2- -MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

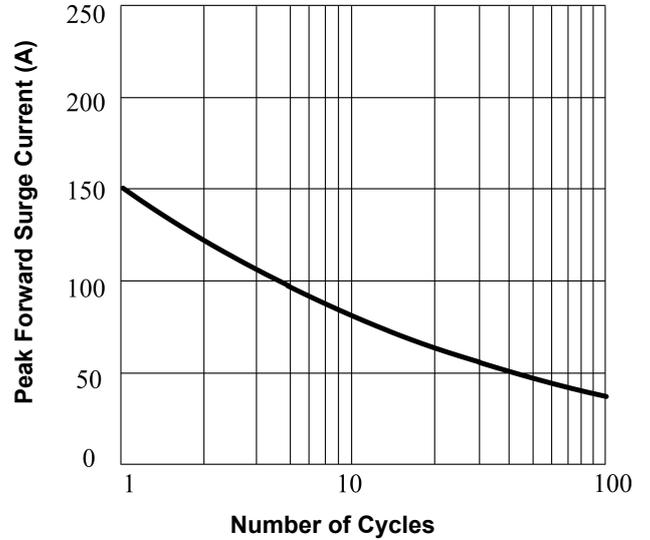


FIG. 3- TYPICAL FORWARD VOLTAGE

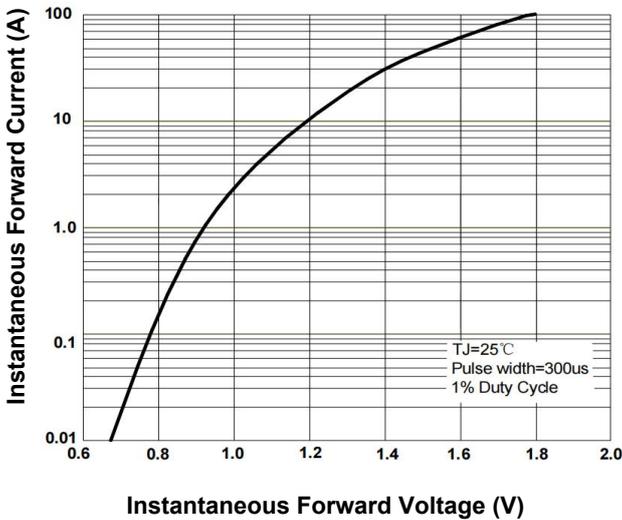


FIG. 4- TYPICAL REVERSE LEAKAGE

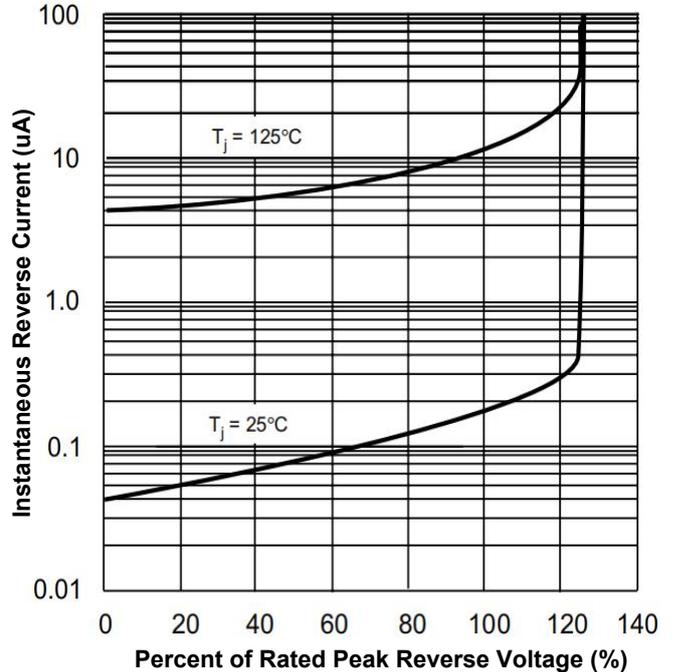
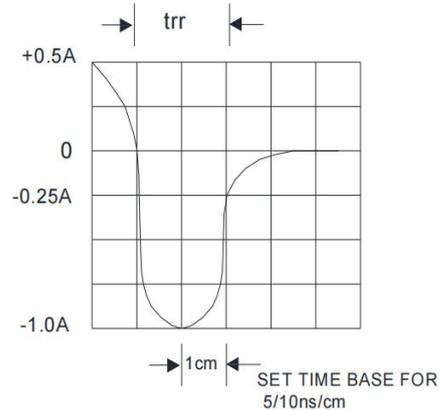
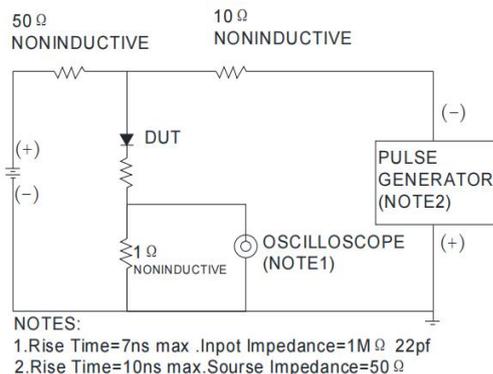


FIG. 5- Diagram of circuit and Testing wave form of reverse recovery



The curve above is for reference only.



Legal Disclaimer Notice

All specifications are subject to be changed without notice to improve reliability function, design, etc. JUXIN makes no warranty, or guarantee regarding the suitability of the products for any purpose. To the extent permitted by applicable law, JUXIN disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement.

Statements regarding the suitability of products for certain types of applications are based on JUXIN's ideas of typical requirements that are often placed on JUXIN products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and specifications may differ for different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify JUXIN's terms and conditions of purchase, including but not limited to the warranty expressed therein. Except as expressly indicated in writing, JUXIN products are not designed for use in medical, life saving, or life-sustaining applications or for any other applications in which the failure of the JUXIN product could result in personal injury or death. Customers using or selling JUXIN products not expressly indicated for use in such applications do so at their own risk. Please contact authorized JUXIN personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by forbid or otherwise, to any intellectual property rights is granted by this document or by any conduct of JUXIN. Product names and markings noted herein may be trademarks of their respective owners.