

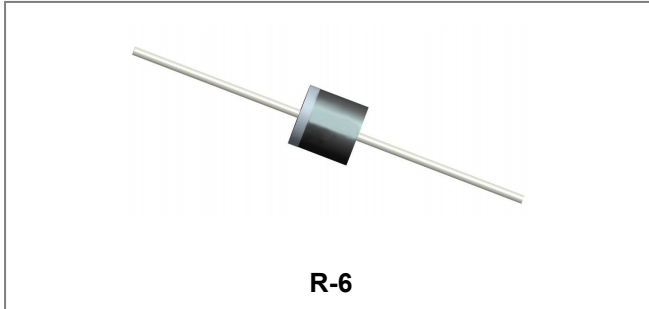


THE DATASHEET OF FR605



FR601 THRU FR607

FAST RECOVERY RECTIFIERS



Features

- Diffused Junction
- Low Forward Voltage Drop
- High Current Capability
- High Reliability
- High Surge Current Capability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Circuit Diagram



Mechanical Data

- Case: R-6 molded plastic
- Terminals: Plated axial leads, solderable per MIL-STD-202, Method 208
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 2.1 grams

Maximum Ratings and Electrical Characteristics @T_A=25°C unless otherwise specified

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Characteristic | Symbol | FR 601 | FR 602 | FR 603 | FR 604 | FR 605 | FR 606 | FR 607 | Units |
|---|-------------------------------------|-------------|--------|--------|--------|--------|--------|--------|-------|
| Maximum repetitive peak reverse voltage Maximum DC blocking voltage | V _{RRM} V _{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V _{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum average forward rectified current 0.375" (9.5mm) lead length at @T _A =55°C | I _(AV) | 6.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I _{FSM} | 200 | | | | | | | A |
| Maximum instantaneous forward voltage at 6.0A | V _F | 1.2 | | | | | | | V |
| Maximum DC reverse current @T _A = 25°C At Rated DC Blocking Voltage @T _A = 100°C | I _{RM} | 10 200 | | | | | | | μA |
| Maximum reverse recovery time (Note 1) | t _r | 150 | | | | 250 | 500 | | ns |
| Typical Junction Capacitance (Note 2) | C _J | 100 | | | | | | | pF |
| Operating junction temperature range | T _J | -65 to +125 | | | | | | | °C |
| Operating storage temperature range | T _{STG} | -65 to +150 | | | | | | | °C |

***Glass passivated forms are available upon request**

Note: 1. Reverse recovery condition IF=0.5A, IR=1.0A, Irr=0.25A
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

Ratings and Characteristics Curves

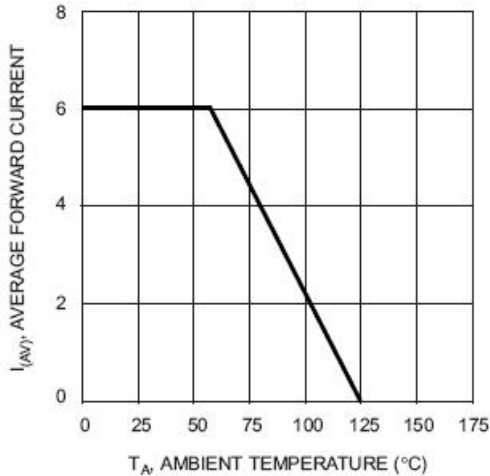


Fig. 1, Typical Forward Current Derating Curve

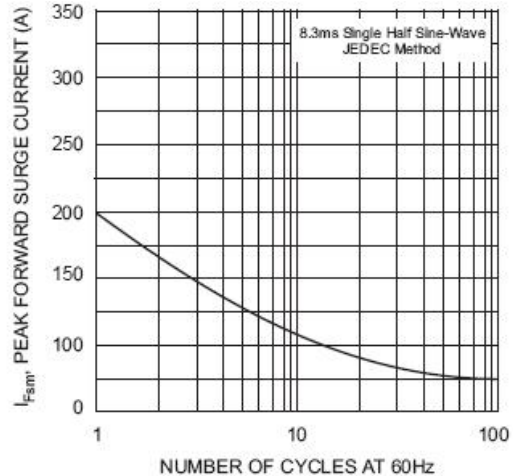


Fig. 2 Max Non-Repetitive Peak Surge Current

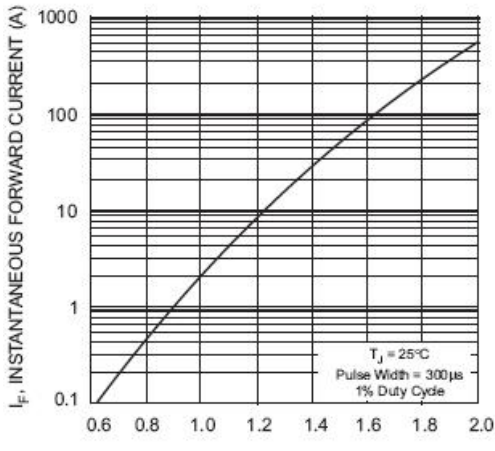


Fig. 3, Typical Instantaneous Forward Characteristics

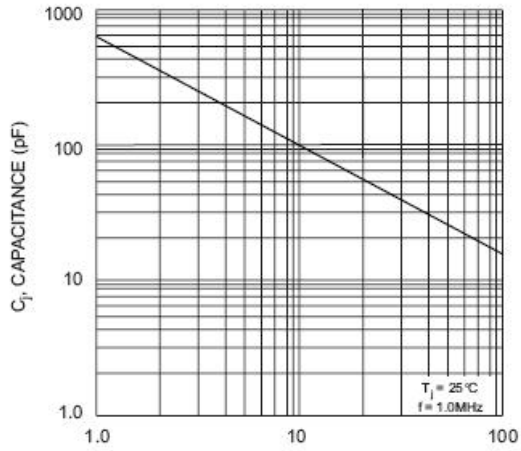
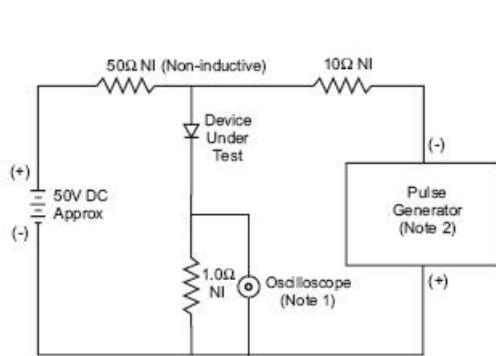


Fig. 4 Typical Junction Capacitance



Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.

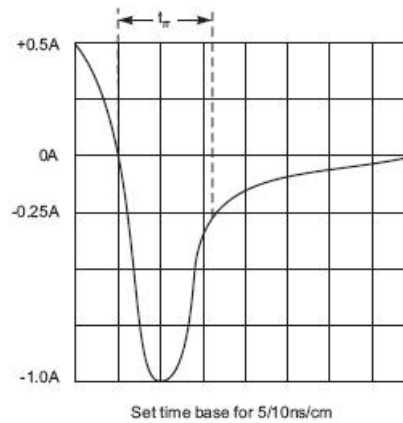
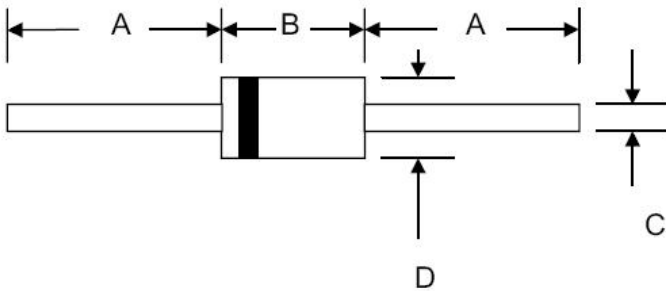


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

Mechanical Dimensions R-6



| SYMBOL | Millimeters | | Inches | |
|--------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 25.4 | - | 1.000 | - |
| B | 8.60 | 9.10 | 0.340 | 0.360 |
| C | 1.2 | 1.3 | 0.048 | 0.052 |
| D | 8.60 | 9.10 | 0.340 | 0.360 |

Ordering Information

| Device | Package | Shipping |
|-------------|------------------|---------------|
| FR601-FR607 | R-6 (Pb-Free) | 500pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram

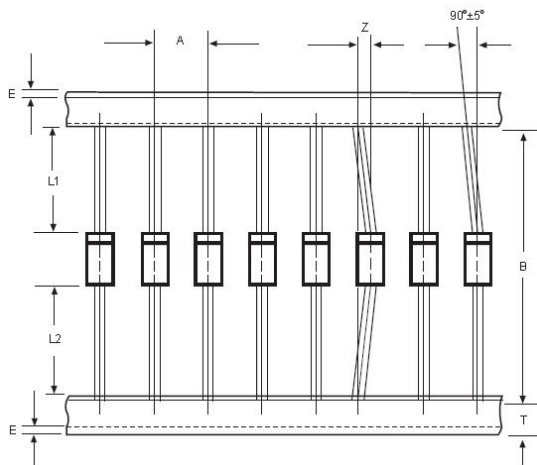


Where XXXXX is YYWWL

FR601 = Part Name
SSG = SSG
YY = Year
WW = Week
L = Lot Number

Cautions: Molding resin
Epoxy resin UL:94V-0

Carrier Tape Specification R-6



| SYMBOL | Millimeters | |
|---------|-------------|-------|
| | Min. | Max. |
| A | 9.50 | 10.50 |
| B | 50.9 | 53.9 |
| Z | - | 1.20 |
| T | 5.60 | 6.40 |
| E | - | 0.80 |
| IL1-L2I | - | 1.0 |

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