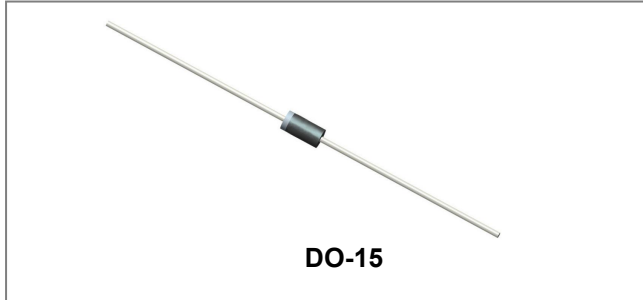




# THE DATASHEET OF FR205



## FR201 THRU FR207 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: JEDEC DO-15 molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.014 ounce, 0.40 grams

### Maximum Ratings and Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

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

Characteristic	Symbol	FR 201	FR 202	FR 203	FR 204	FR 205	FR 206	FR 207	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 @ $T_A=55^{\circ}\text{C}$	$I_{(AV)}$	2.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	60							A
Maximum instantaneous forward voltage at 2.0A	$V_F$	1.2							V
Maximum DC reverse current @ $T_A=25^{\circ}\text{C}$ At Rated DC Blocking Voltage @ $T_A=100^{\circ}\text{C}$	$I_{RM}$	5.0 100							$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$t_{rr}$	150				250	500		ns
Typical Junction Capacitance (Note 2)	$C_J$	30							pF
Typical Thermal Resistance Junction to Ambient (Note 3)	$R_{\theta JA}$	40							$^{\circ}\text{C/W}$
Operating junction temperature range	$T_J$	-55 to +125							$^{\circ}\text{C}$
Operating storage temperature range	$T_{STG}$	-55 to +150							$^{\circ}\text{C}$

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

Note: 1. Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$

2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

3. Thermal resistance from junction to ambient at 0.375"(9.5mm)lead length, P.C.B. mounted

**Ratings and Characteristics Curves**

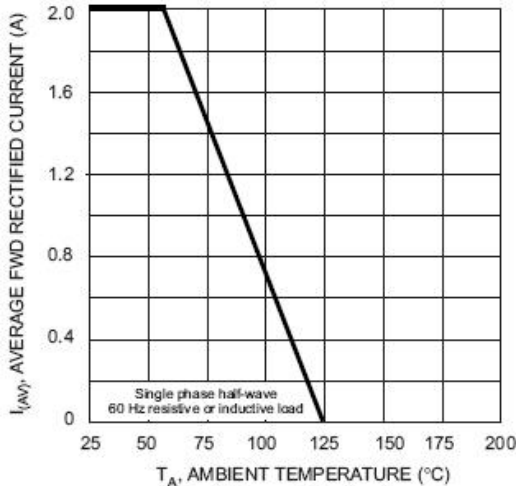


Fig. 1 Forward Derating Curve

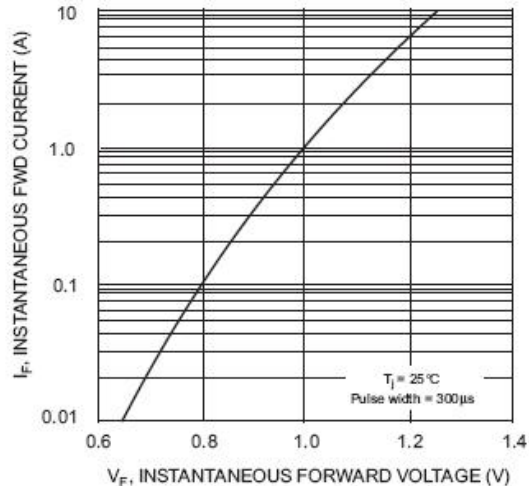


Fig. 2 Typical Forward Characteristics

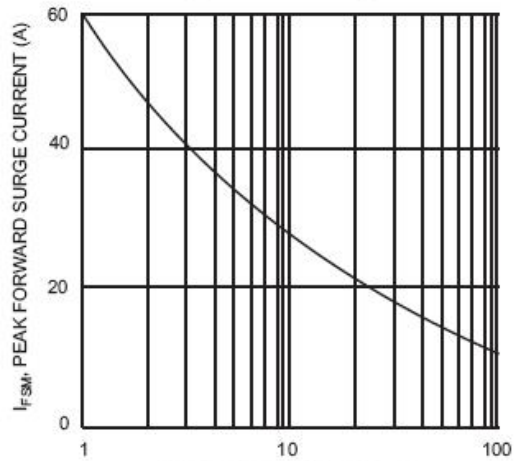


Fig. 3 Peak Forward Surge Current

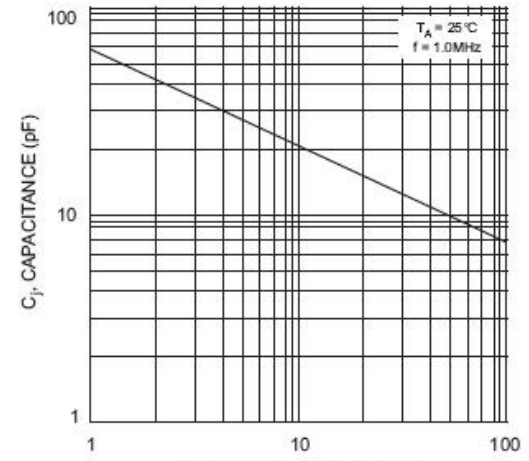
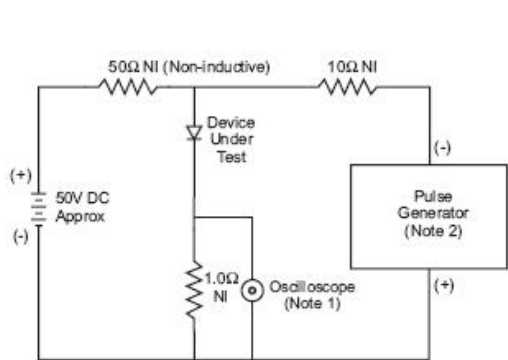
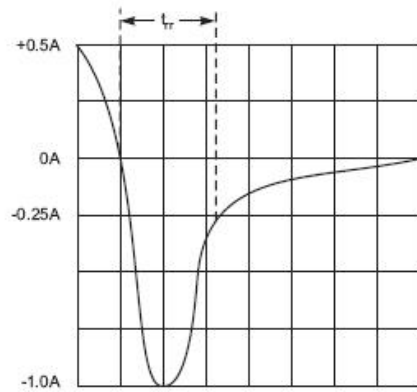


Fig. 4 Typical Junction Capacitance



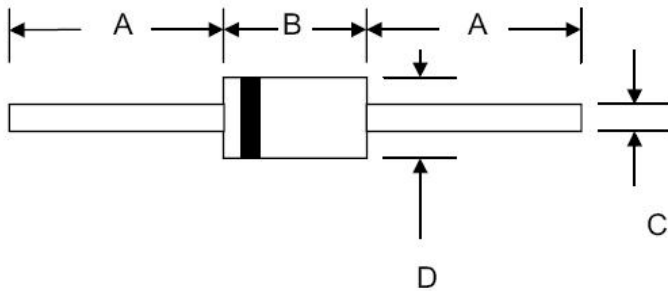
Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 5/10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

### Mechanical Dimensions DO-15



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	25.4	-	1.000	-
B	5.5	7.62	0.217	0.300
C	0.7	0.9	0.028	0.034
D	2.6	3.6	0.104	0.140

### Ordering Information

Device	Package	Shipping
FR201-FR207	DO-15 (Pb-Free)	3000pcs /tape

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

### Marking Diagram

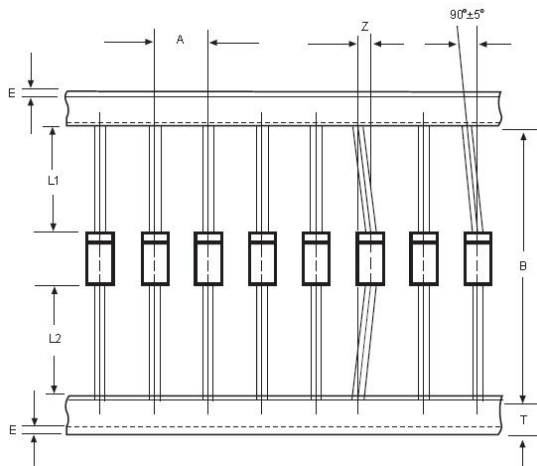


Where XXXXX is YYWWL

FR207 = Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

### Carrier Tape Specification DO-15



SYMBOL	Millimeters	
	Min.	Max.
A	4.50	5.50
B	50.9	53.9
Z	-	1.20
T	5.60	6.40
E	-	0.80
IL1-L2I	-	1.0

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