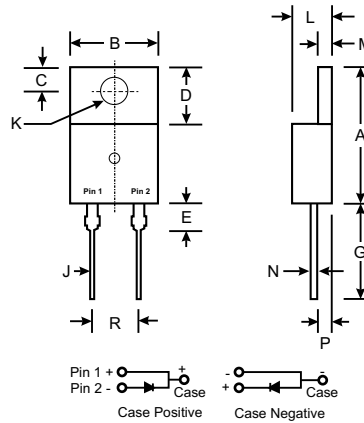


### Features

- Low Leakage
- Low Forward Voltage Drop
- High Current Capability
- Super-fast Switching Speed < 35ns
- Plastic Material - UL Flammability Classification 94V-0
- Good for 200KHz Power Supplier

### Mechanical Data

- Case: TO-220A, Molded Plastic
- Terminals: Plated Axial Leads, Solderable per MIL-STD-202 Method 208
- Approx Weight: 2.24 grams
- Mounting Position: Any



TO-220A		
Dim	Min	Max
A	14.22	15.88
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	—	6.25
G	12.70	14.73
H	2.29	2.79
J	0.51	1.14
K	3.53Ø	4.09Ø
L	3.56	4.83
M	1.14	1.40
N	0.30	0.64
P	2.03	2.92
R	4.83	5.33
All Dimensions in mm		

### Maximum Ratings and Electrical Characteristics

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

Characteristic	Symbol	SF81	SF82	SF83	SF84	Unit
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	V
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	V
Maximum DC Blocking voltage	$V_{DC}$	50	100	150	200	V
Maximum Average Forward Rectified Current @ $T_C = 125^\circ\text{C}$	$I_{(AV)}$	8.0				A
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FM}$	125				A
Maximum Instantaneous Forward Voltage at 8.0A DC	$V_F$	0.975				V
Maximum DC Reverse Current at Rated DC Blocking Voltage @ $T_A = 25^\circ\text{C}$ @ $T_A = 100^\circ\text{C}$	$I_R$	10 150				$\mu\text{A}$
Typical Thermal Resistance	$R_{\theta JC}$	3				$^\circ\text{C/W}$
Maximum Reverse Recovery Time (Note 2)	$T_{rr}$	35				ns
Typical Junction Capacitance (Note 3)	$C_J$	65				pF
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +175				$^\circ\text{C}$

- Notes:
1. Thermal Resistance Junction to Ambient Vertical PC Board Mounting 12.7 mm Lead Length.
  2. Reverse Recovery Test Conditions:  $I_F = 0.5\text{ A}$ ,  $I_R = 1.0\text{ A}$ ,  $I_{RR} = 0.25\text{ A}$
  3. Measured at 1.0MHz and applied reverse voltage of 4.0V.

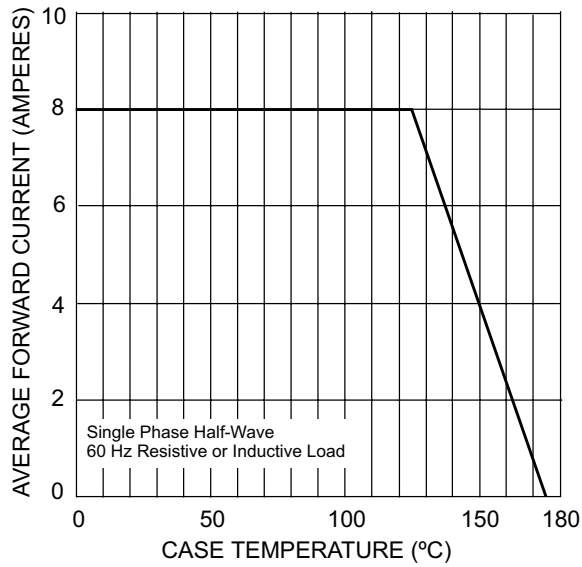


Fig. 1 Forward Current Derating Curve

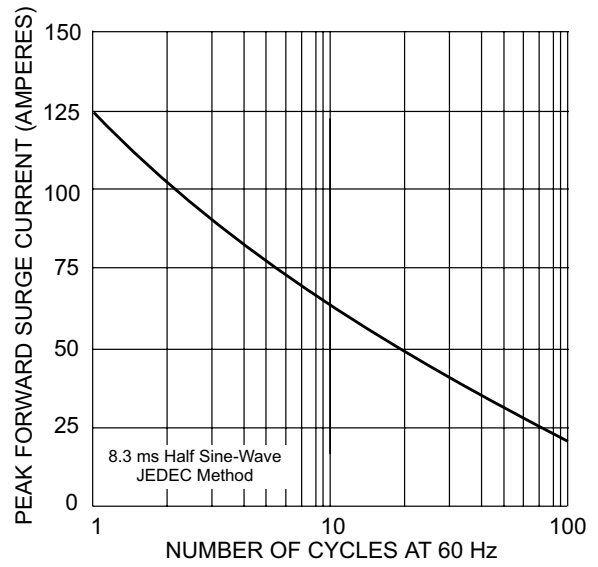


Fig. 2 Maximum Non-Repetitive Surge Current

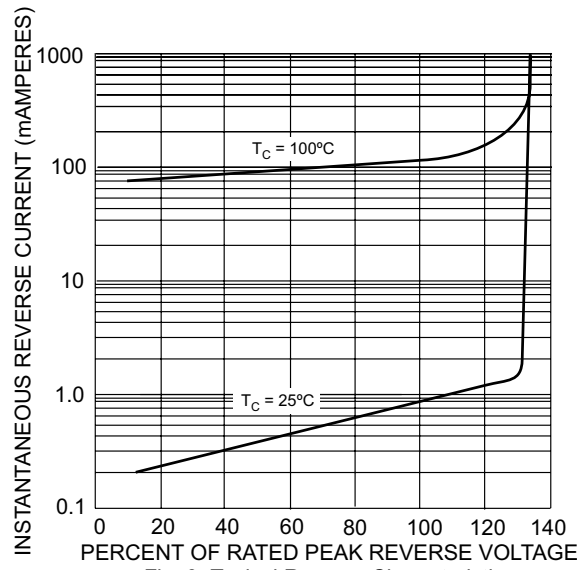


Fig. 3 Typical Reverse Characteristics

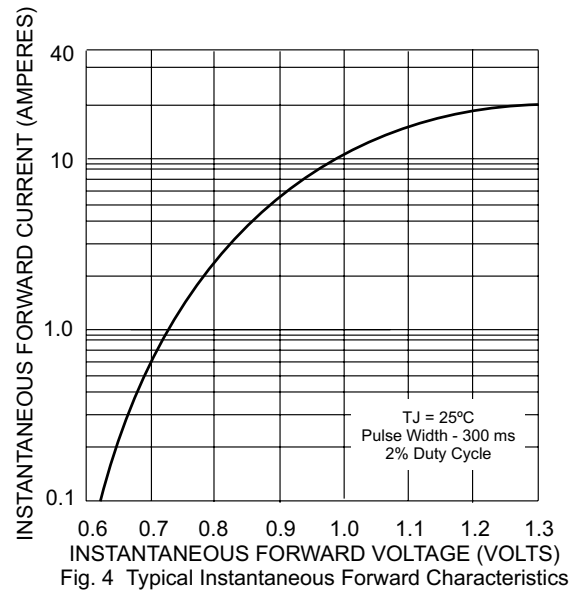


Fig. 4 Typical Instantaneous Forward Characteristics

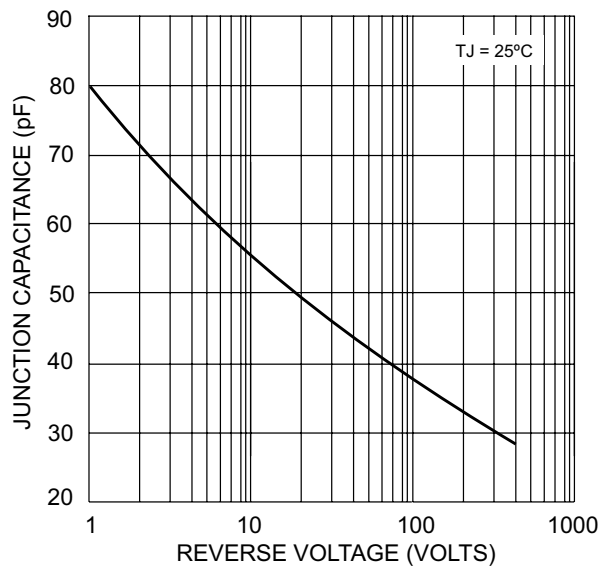


Fig. 5 Typical Junction Capacitance