



SFF2002 THRU SFF2006

Superfast Recovery Rectifiers

FEATURES

- ◆ Ultrafast 35 Nanosecond Recovery Time
- ◆ 150° C Operating Junction Temperature
- ◆ Popular ITO-220 & TO-220 Package
- ◆ Epoxy Meets UL94 ,V0 @ 1/8"
- ◆ High Temperature Glass Passivated Junction
- ◆ Low Forward Voltage
- ◆ Low Leakage Current
- ◆ Reverse Voltage to 600 Volts
- ◆ Pb-Free Packages are Available

ITO-220AB



TO-220AB



MECHANICAL DATA

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260° C Max. for 10 Seconds
- Shipped 50 units per plastic tube

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, derate current by 20%.

Type Number	Symbol	SFF2002	SFF2004	SFF2006	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	200	400	600	V
Maximum RMS Voltage	V_{RMS}	140	280	420	V
Maximum DC Blocking Voltage	V_{DC}	200	400	600	V
Maximum Average Forward Rectified Current @ $T_C = 100^\circ\text{C}$	$I_{(AV)}$		20		A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}		125		A
Maximum Instantaneous Forward Voltage @ 10A	V_F	0.975	1.30	1.70	V
Maximum DC Reverse Current @ $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=100^\circ\text{C}$	I_R		10 400		uA uA
Maximum Reverse Recovery Time (Note 1)	T_{rr}		35		nS
Typical Junction Capacitance (Note 2)	C_j		90		pF
Typical Thermal Resistance (Note 3)	$R_{\theta JC}$		2.5		°C/W
Operating Temperature Range	T_J		-65 to +150		°C
Storage Temperature Range	T_{STG}		-65 to +150		°C

- Notes:
1. Reverse Recovery Test Conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$
 2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.
 3. Thermal Resistance from Junction to Case Mounted on Heatsink.



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Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

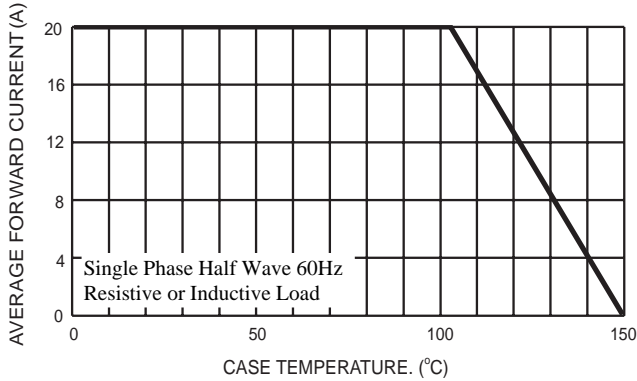


FIG.2- TYPICAL REVERSE CHARACTERISTICS

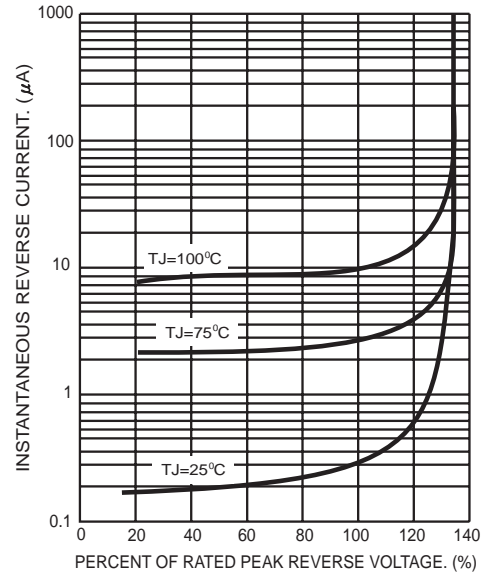


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

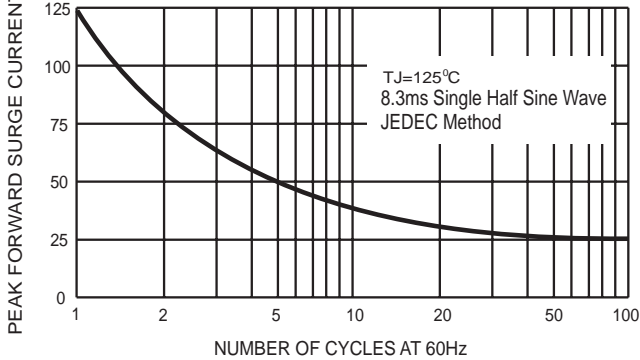


FIG.5- TYPICAL FORWARD CHARACTERISTICS PER LEG

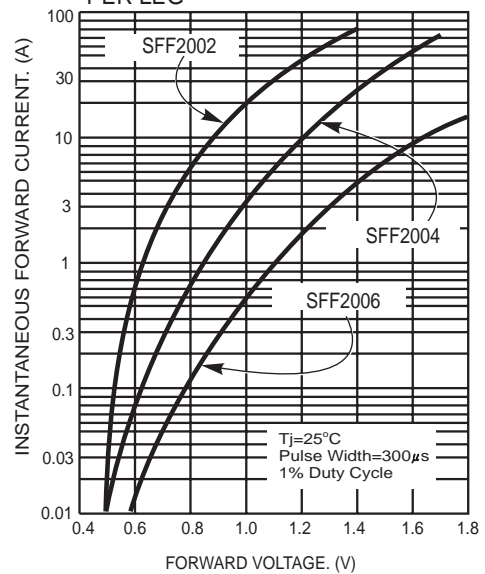


FIG.4- TYPICAL JUNCTION CAPACITANCE PER LEG

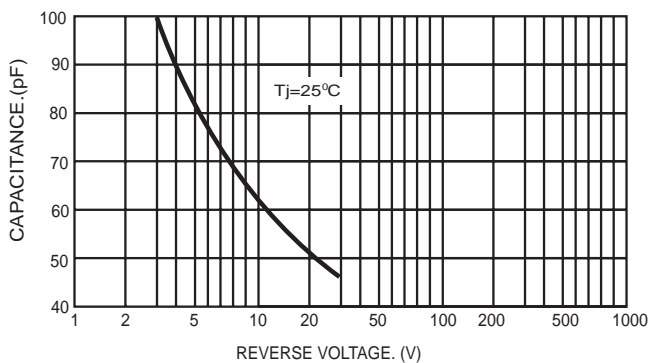
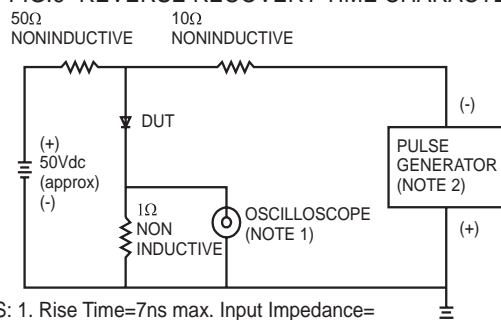
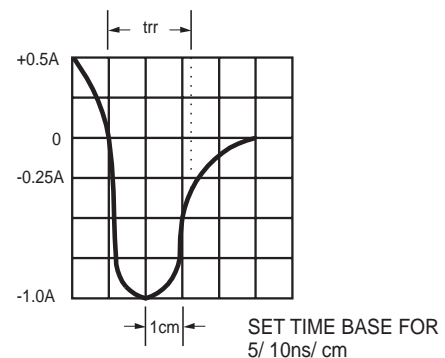


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



- NOTES: 1. Rise Time=7ns max. Input Impedance=1 megohm 22pf
2. Rise Time=10ns max. Source Impedance=50 ohms



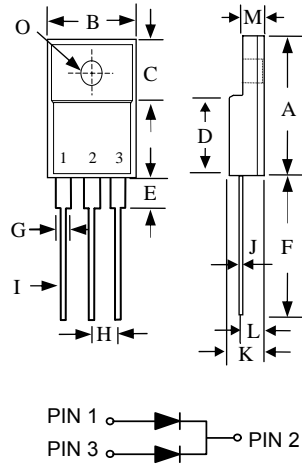


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PACKAGE OUTLINE

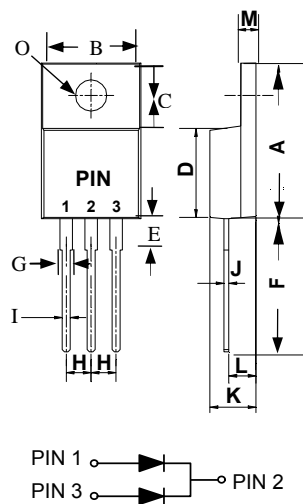
ITO-220AB



ITO-220AB		
DIM.	MIN.	MAX.
A	14.90	15.90
B	9.90	10.40
C	6.45	6.95
D	8.05	8.85
E	2.90	3.90
F	12.8	—
G	1.10	1.4
H	2.35	2.55
I	0.45	0.95
J	0.40	0.65
K	4.35	4.80
L	2.45	2.85
M	2.50	2.85
O	∅3.00	∅3.50

All Dimensions in millimeter

TO-220AB



TO-220AB		
DIM.	MIN.	MAX.
A	14.50	15.50
B	9.90	10.40
C	6.05	6.65
D	8.05	8.85
E	2.90	3.90
F	12.80	—
G	1.10	1.40
H	2.35	2.55
I	0.45	0.95
J	0.40	0.65
K	4.35	4.75
L	2.45	2.85
M	1.15	1.45
O	∅3.55	∅3.85

All Dimensions in millimeter

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