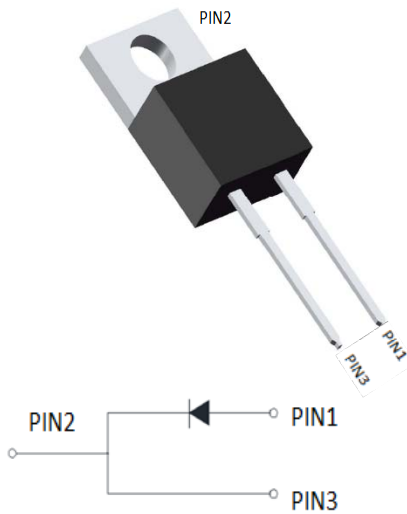


## Ultra-Fast Recovery Rectifier Diodes



### Features

- High frequency operation
- High surge forward current capability
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Adopt GPP chip
- Passivation for enhanced ruggedness and long term reliability
- Solder dip 275 °C max. 7 s, per JESD 22-B106

### Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

### Mechanical Data

- **Package:** TO-220AC  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

### Limiting Values (Absolute Maximum Rating)

PARAMETER	SYMBOL	UNIT	SF1660-B1-0000S
Device Marking Code			SF1660
Repetitive Peak Reverse Voltage	VRRM	V	600
Average Rectified Output Current @60Hz half sine-wave, R-load, Tc(FIG.1)	Io	A	16
Surge(Non-repetitive)Forward Current @60 Hz half sine-wave, 1 cycle, Ta=25°C	IFSM	A	150
Current Squared Time @1ms≤t<8.3ms Tj=25°C	I²t	A²s	93
Storage Temperature	Tstg	°C	-55 ~ +150
Junction Temperature	Tj	°C	-55 ~ +150

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	SF1660-B1-0000S
Maximum instantaneous forward voltage drop per diode	VFM	V	IFM=16.0A	1.7
Maximum DC reverse current at rated DC blocking voltage per diode	I <sub>RRM1</sub>	uA	V <sub>RM</sub> =V <sub>VRRM</sub> Ta=25°C	10
	I <sub>RRM2</sub>		V <sub>RM</sub> =V <sub>VRRM</sub> Ta=125°C	200
Reverse Recovery Time	T <sub>rr</sub>	ns	IF=0.5A I <sub>RM</sub> =1A I <sub>RR</sub> =0.25A	35

### Thermal Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	SF1660-B1-0000S
Thermal Resistance Between junction and case	R <sub>θj-c</sub>	°C/W	2.0



# SF1660-B1-0000S

RoHS  
COMPLIANT

## Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SF1660-B1-0000S	Approximate 1.87	50	1000	5000	Tube

## Characteristics (Typical)

FIG1:  $I_o$  -  $T_c$  Curve

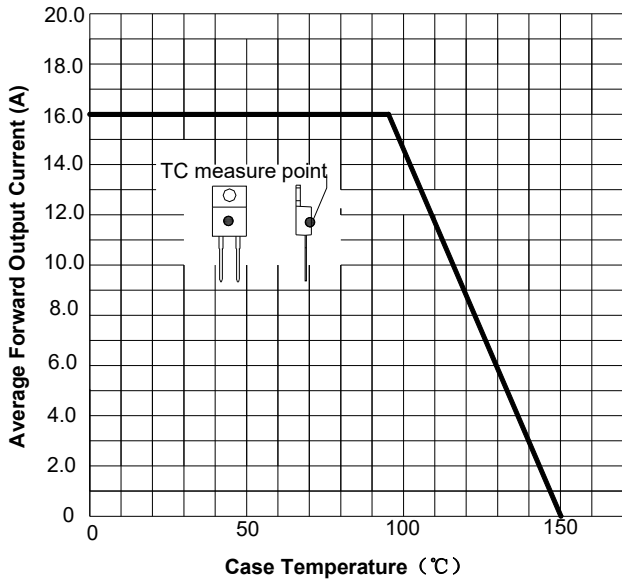


FIG2: Surge Forward Current Capability

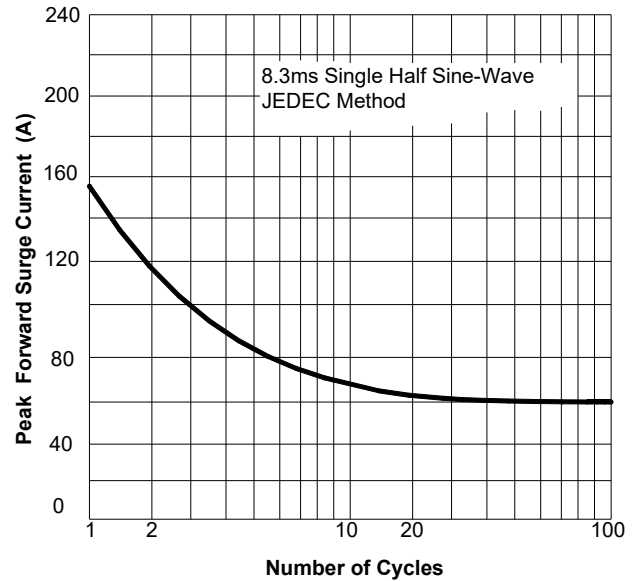


FIG3: Forward Voltage

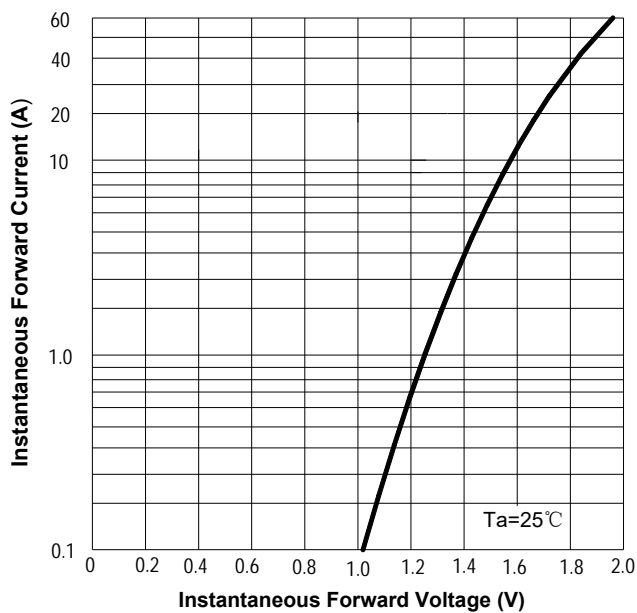


FIG4: Typical Reverse Characteristics

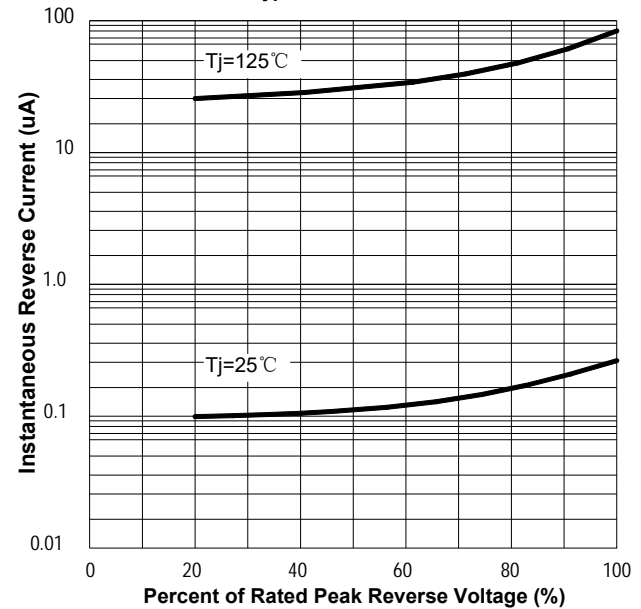
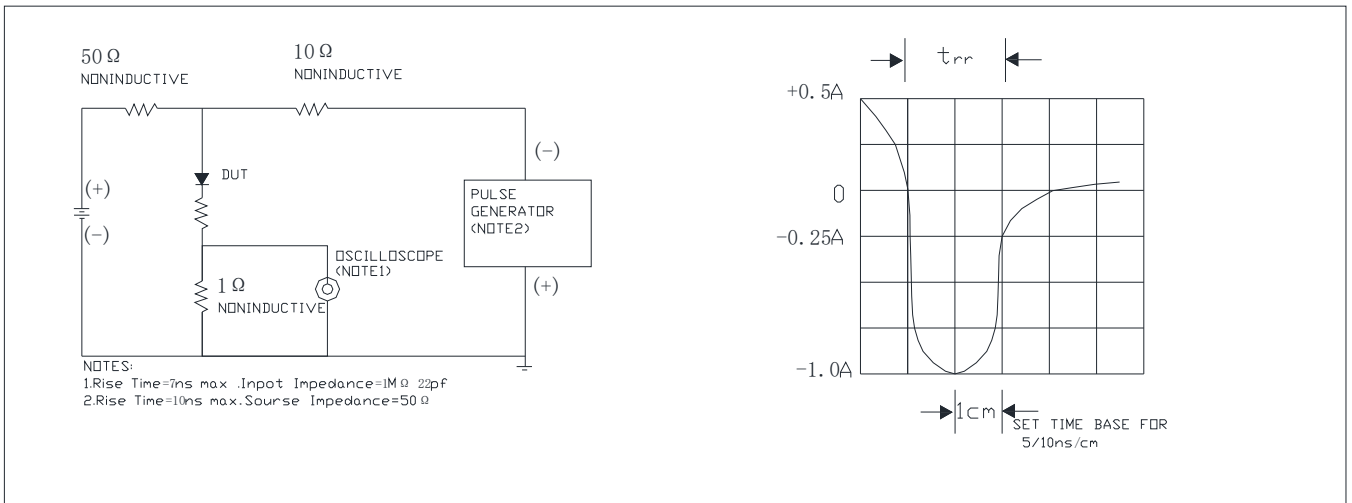
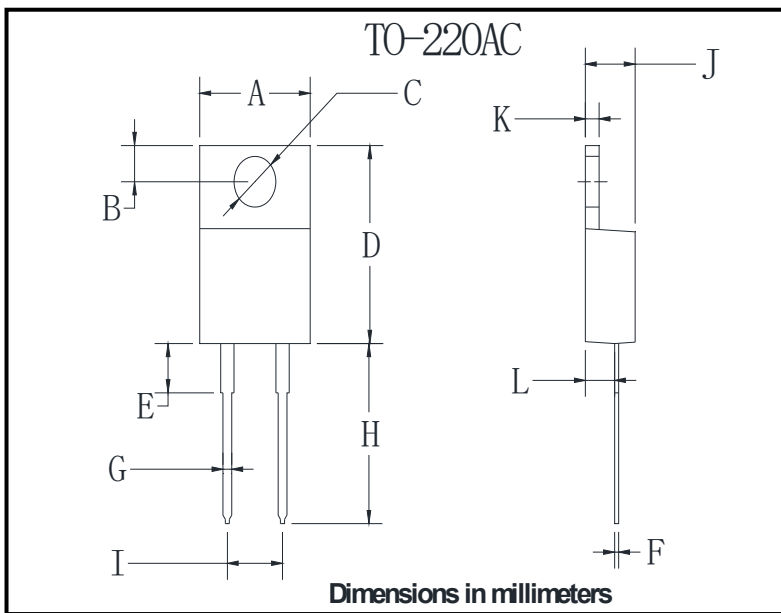


FIG.5 Diagram of circuit and Testing wave form of reverse recovery time



## Outline Dimensions



TO-220AC		
Dim	Min	Max
A	9.5	10.9
B	2.22	3.27
C	3.34	4.31
D	14.5	15.5
E	3.16	4.46
F	0.28	0.64
G	0.68	0.94
H	13.06	14.62
I	4.55	5.60
J	4.04	5.1
K	1.14	1.4
L	2.14	3.19



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