



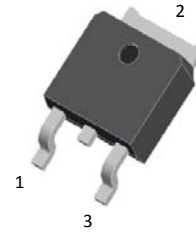
SFD1040-SFD1060

10.0 AMP Super Fast Recovery Rectifier

1. Features

- Adopt FRED chip.
- High frequency operation.
- High current capability.
- High reliability.
- Super fast recovery time,high voltage.
- RoHS Compliant.

TO-252



2. Mechanical Data

- Case:Molded Plastic,TO252 .
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking:marked on body.
- Mounting Position : Any.



3. Maximum Ratings and Electrical Characteristics

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	SFD1040	SFD1060	UNIT
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	400	600	V
Maximum RMS Voltage	V_{RMS}	280	420	V
Maximum DC Blocking Voltage	V_{DC}	400	600	V
Average Rectified Output Current @ $T_c=100^{\circ}C$	$I_{F(AV)}$	10.0		A
Peak Forward Surge Current 8.3ms Single half sine-wave superimposed @ $T_j=25^{\circ}C$ on rated load (JEDEC Method)	I_{FSM}	120		A
I^2t Rating for Fusing ($t < 8.3ms$)	I^2t	59.76		A^2s
Maximum Instantaneous Forward Voltage @ $I_F=10A$	V_{FM}	1.30	1.60	V
Maximum DC reverse current @ $T_j=25^{\circ}C$ at rated DC blocking voltage @ $T_j=125^{\circ}C$	I_R	5.0	300	μA
Maximum Reverse Recovery Time (Note 1)	T_{RR}	35		ns
Typical Thermal Resistance	$R_{\theta JC}$	2.5		$^{\circ}C/W$
Operating Temperature Range	T_j	-55 to+175		$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to+150		$^{\circ}C$

Note:

1. Reverse Recovery Test Conditions: $I_F=0.5A$, $I_R=1.0A$, $I_{RR}=0.25A$.



4. Rating And Characteristic Curves

Fig. 1 Forward Current Derating Curve

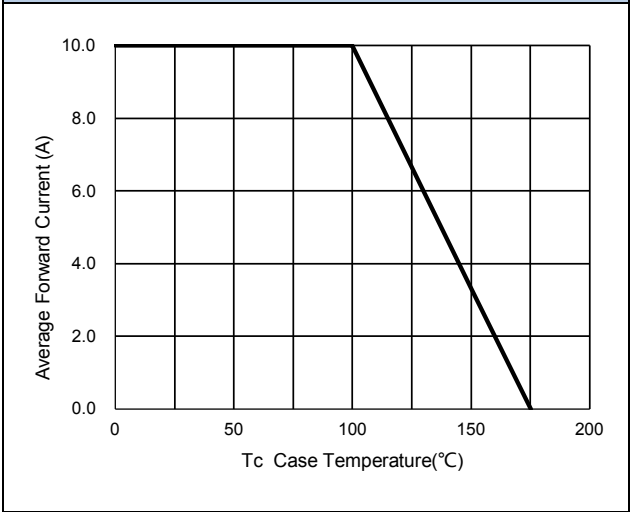


Fig. 2 Typical Forward Characteristics

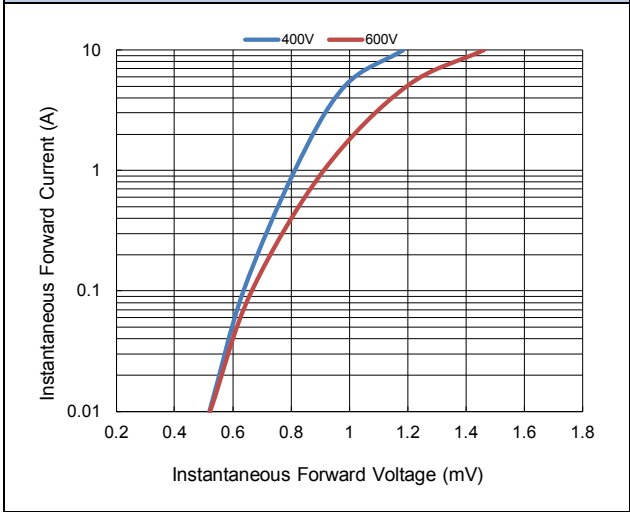


Fig. 3 Forward Surge Current Capability

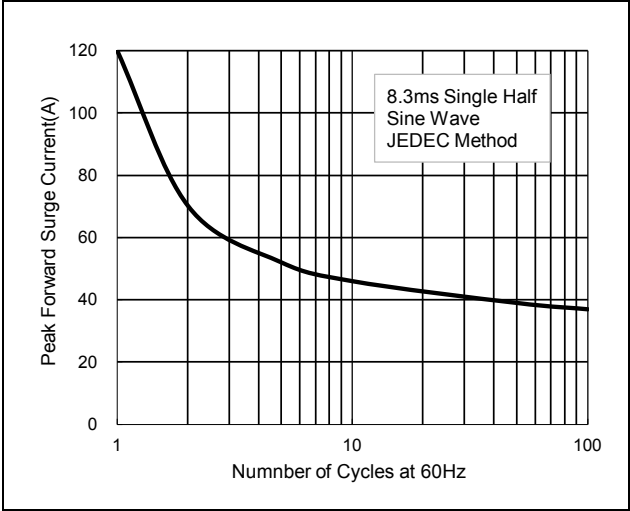
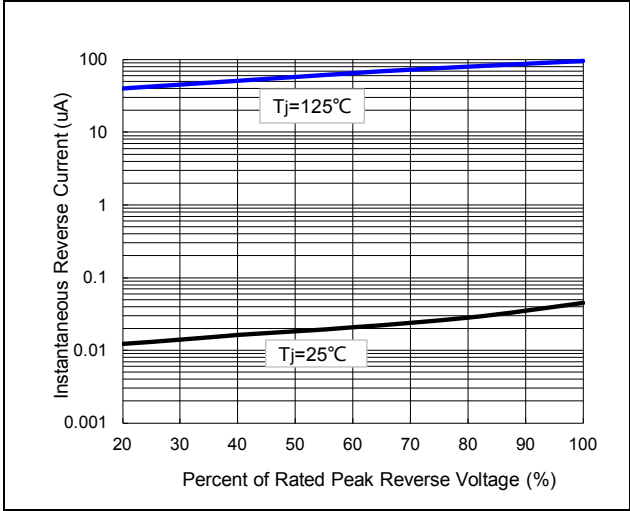


Fig.4 Typical Reverse Characteristics

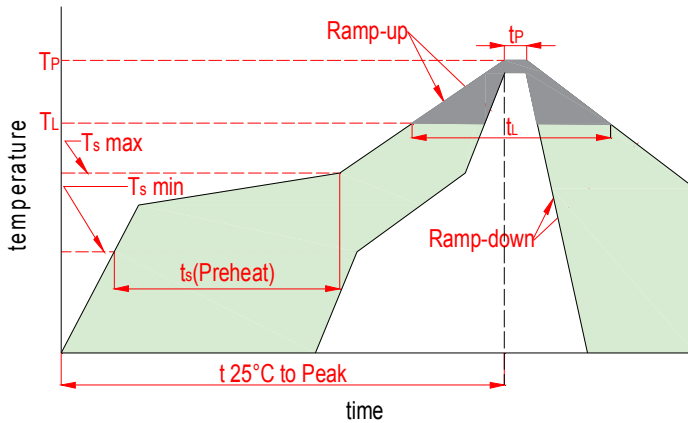




SFD1040-SFD1060

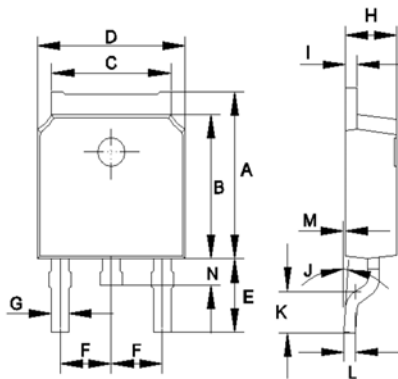
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5. Soldering Parameters



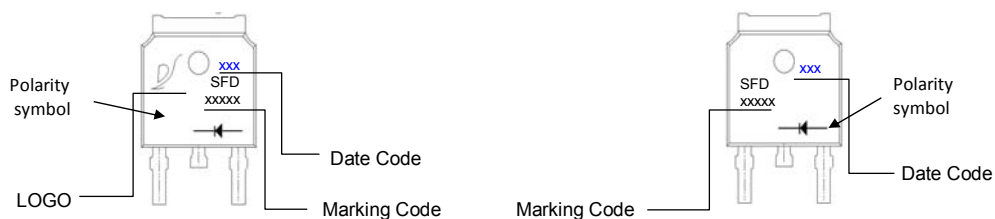
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_p)		260 ^{+0/-5} ℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_p)		8 minutes max
Do not exceed		260℃

6. Dimensions



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.270	0.285	6.85	7.25
B	0.232	0.248	5.90	6.30
C	0.202	0.218	5.13	5.53
D	0.252	0.268	6.40	6.80
E	0.114	0.130	2.90	3.30
F	0.086	0.094	2.19	2.39
G	0.018	0.033	0.45	0.85
H	0.087	0.094	2.20	2.40
I	0.016	0.024	0.41	0.61
J			0°	8°
K	0.057	0.073	1.45	1.85
L	0.016	0.024	0.41	0.61
M	0.000	0.005	0.00	0.12
N	0.024	0.039	0.60	1.00

7. Part Marking System



8. Package Information

Package	Tape Width (mm)	Reel Size		Quantity(pcs)
		mm	inch	
TO252	16	330	13	2500



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