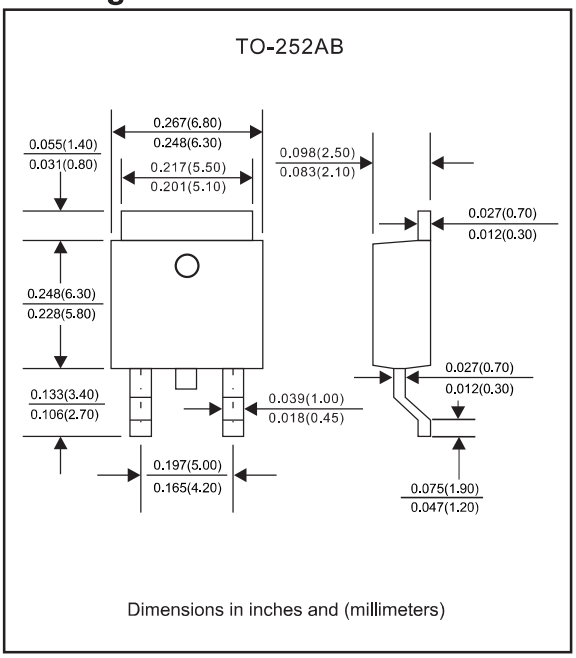
SF51YD THRU SF58YD

5.0A Surface Mount Super Fast Rectifiers-50-600V

Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- High current capability.
- Super fast reovery time for switching mode application.
- High surge current capability.
- Glass passivated chip junction.
- Lead-free parts meet enironmental standards of MIL-STD-19500/228
- Compliant to Halogen-free

Package outline



Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, TO-252AB
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig. 1	I_O			5.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			150	A
Reverse current	V_R = V_{RRM} T_J = 25°C	I_R			5.0	μA
	V_R = V_{RRM} T_J = 125°C				500	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		50		pF
Storage temperature		T_{STG}	-55		+150	°C

SYMBOLS	V_{RRM} *1 (V)	V_{RMS} *2 (V)	V_R *3 (V)	V_F *4 (V)	t_{rr} *5 (ns)	Operating temperature T_J, (°C)
SF51YD	50	35	50	1.00	35	-55 to +150
SF52YD	100	70	100			
SF54YD	200	140	200			
SF56YD	400	280	400	1.30		
SF58YD	600	420	600	1.70		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@I_F=5.0A

*5 Maximum Reverse recovery time, note 1

Note 1. Reverse recovery time test condition, I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Rating and characteristic curves (SF51YD THRU SF58YD)

Fig.1 Forward Current Derating Curve

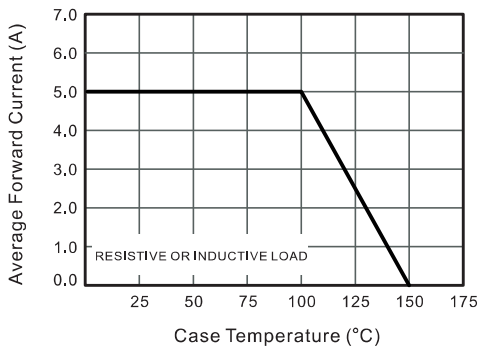


Fig.2 Typical Instaneous Reverse Characteristics

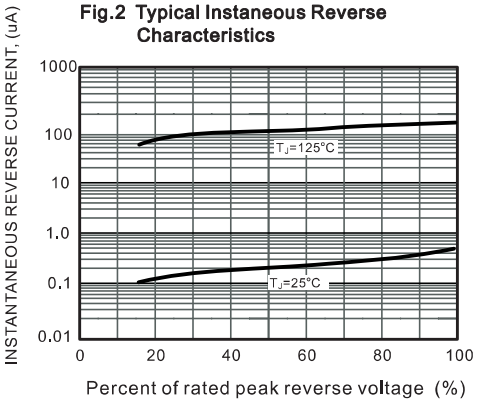


Fig.3 Typical Forward Characteristic

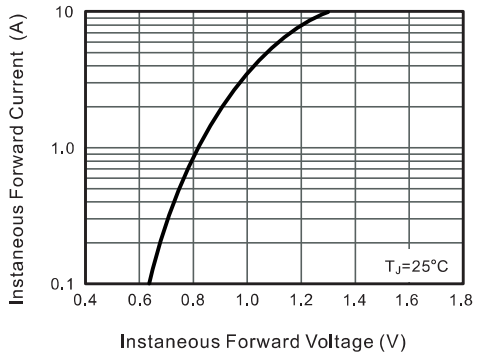


Fig.4 Typical Junction Capacitance

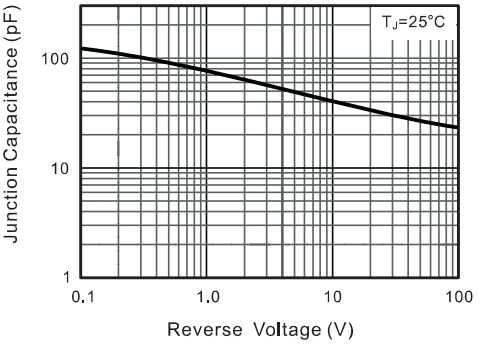


Fig.5 Maximum Non-Repetitive Peak Forward Surage Current

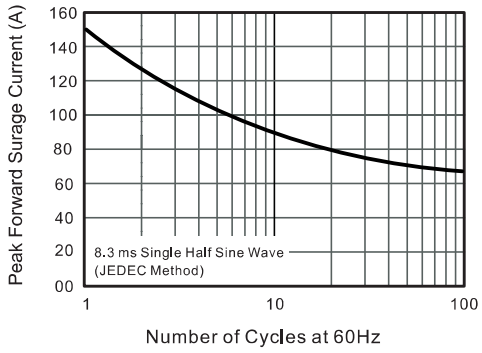
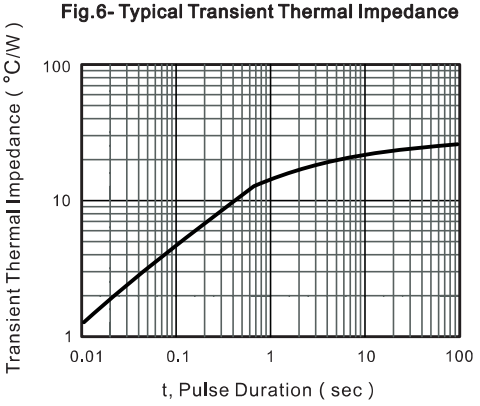


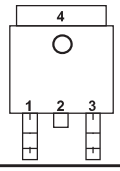
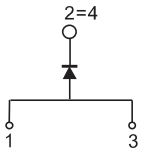
Fig.6- Typical Transient Thermal Impedance



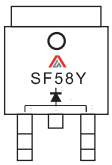
SF51YD THRU SF58YD

5.0A Surface Mount Super Fast Rectifiers-50-600V

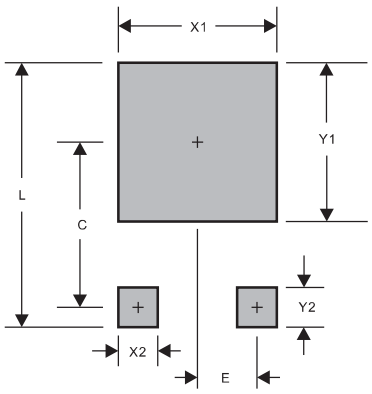
Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code	Example
SF51YD SF52YD SF54YD SF56YD SF58YD	SF51Y SF52Y SF54Y SF56Y SF58Y	

Suggested solder pad layout



PACKAGE	TO-252AB
C	0.272(6.90)
E	0.091(2.30)
L	0.457(11.60)
X1	0.276(7.00)
X2	0.059(1.50)
Y1	0.276(7.00)
Y2	0.098(2.50)

Dimensions in inches and (millimeters)