

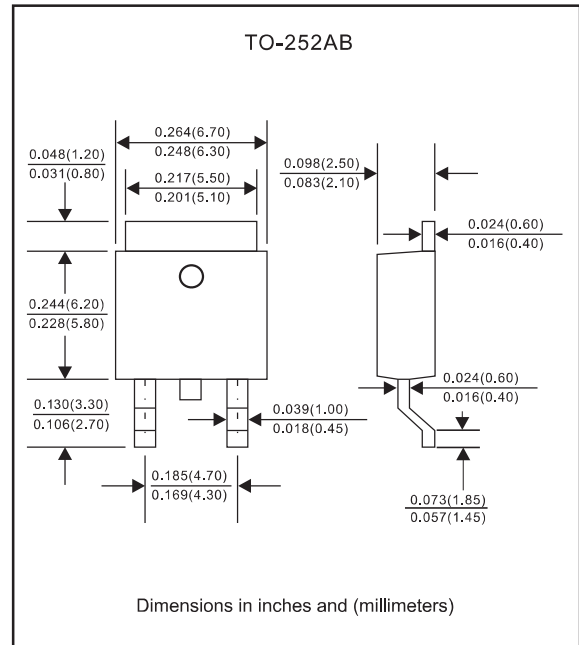
Features

- 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 environmental standards of MIL-STD-19500/228
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

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

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_O			10.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			170	A
Reverse current	$V_R = V_{RRM}$ $T_J = 25^{\circ}\text{C}$	I_R			1.0	μA
	$V_R = V_{RRM}$ $T_J = 125^{\circ}\text{C}$				300	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		45		pF
Storage temperature		T_{STG}	-55		+150	$^{\circ}\text{C}$

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 , ($^{\circ}\text{C}$)
SF102YD-Q1	100	70	100	0.95	35	-55 to +150
SF104YD-Q1	200	140	200			
SF105YD-Q1	300	210	300	1.30		
SF106YD-Q1	400	280	400			
SF107YD-Q1	500	350	500	1.70		
SF108YD-Q1	600	420	600			

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@ $I_F=10.0\text{A}$

*5 Maximum Reverse recovery time, note 1

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

Rating and characteristic curves

FIG.1 - FORWARD CURRENT DERATING CURVE

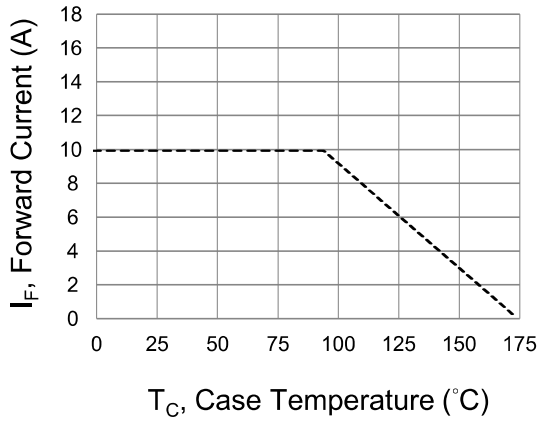


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

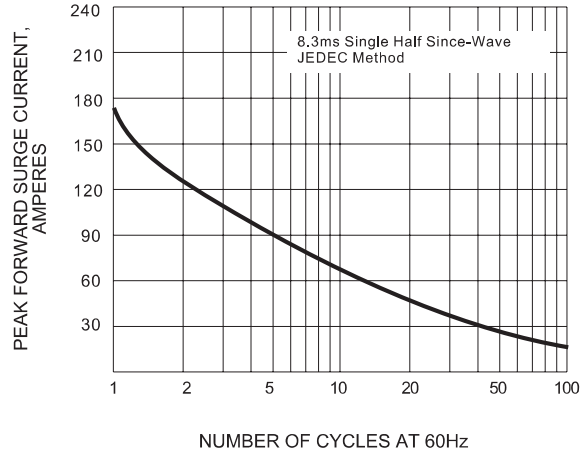


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

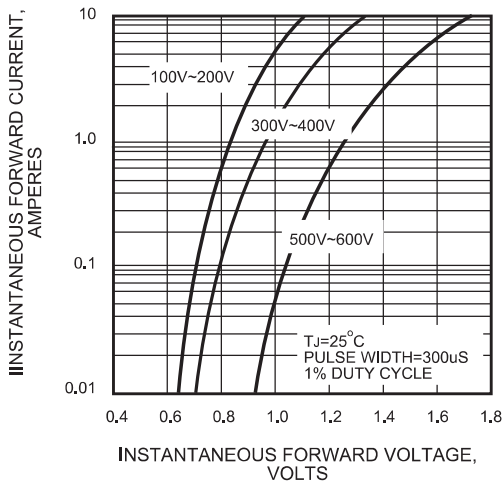


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

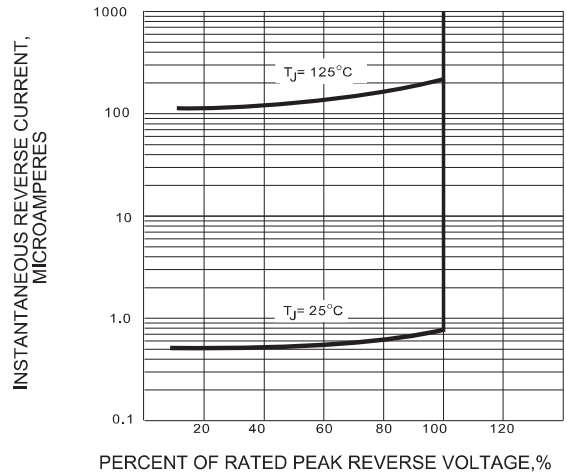
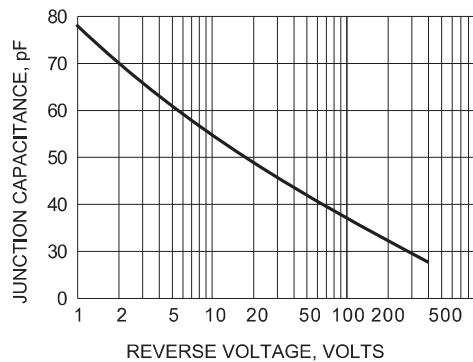
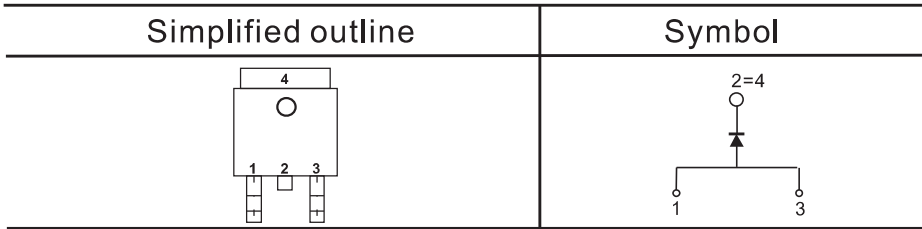


FIG.5 - TYPICAL JUNCTION CAPACITANCE



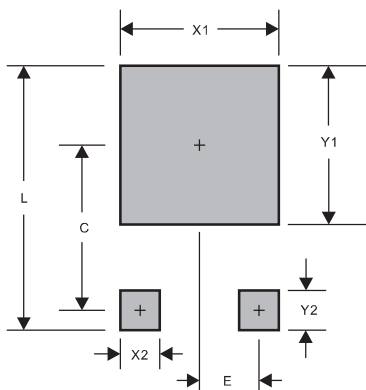
Pinning information



Marking

Type number	Marking code	Example
SF102YD-Q1	SF102Y	
SF104YD-Q1	SF104Y	
SF105YD-Q1	SF105Y	
SF106YD-Q1	SF106Y	
SF107YD-Q1	SF107Y	
SF108YD-Q1	SF108Y	

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)