



SF509DS

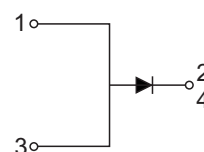
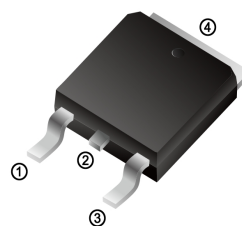
Superfast Recovery Rectifiers

FEATURES

- Low profile package
- Glass Passivated Chip Junction
- Easy to pick and place
- High forward surge capability
- High temperature soldering : 260°C/10 seconds at terminals
- Lead free in comply with EU ROHS 2011/65/EU directives



TO-252(D-PAK)



Mechanical Data

- **Case** : TO-252
- **Terminals** : Solder plated, solderable per MIL-STD-750, Method 2026
- **Polarity** : Cathode line denotes the cathode end
- **Mounting Position** : Any

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating is at 25°C ambient temperature unless otherwise specified

CHARACTERISTICS	TO-252	SF509DS	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	900	V
Maximum RMS voltage	V_{RMS}	630	V
Maximum DC Blocking Voltage	V_{DC}	900	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	5	A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	120	A
Max Instantaneous Forward Voltage at 5.0A	V_F	2.5	V
Maximum DC Reverse Current $T_a = 25^\circ\text{C}$ at Rated DC Reverse Voltage $T_a = 125^\circ\text{C}$	I_R	1 300	μA
Typical Thermal Resistance ⁽¹⁾	$R_{\theta JA}$	50	$^\circ\text{C/W}$
Maximum Reverse Recovery Time ⁽²⁾	t_{rr}	35	ns
Operating Junction Temperature Range	T_j	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^\circ\text{C}$

(1) P.C.B. mounted with 10cm x 10cm x 1mm copper pad areas.

(2) Measured with $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{rr} = 0.25\text{ A}$.





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

Fig.1 Forward Current Derating Curve

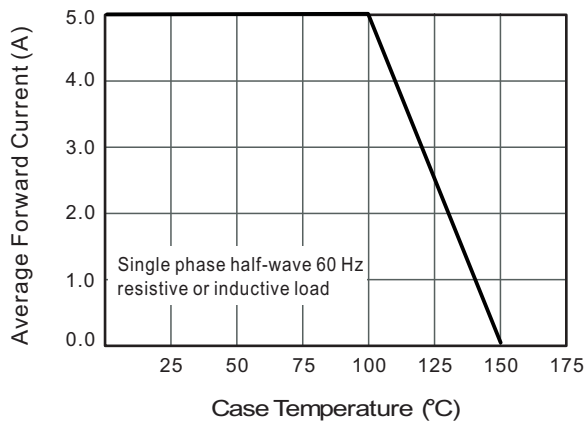


Fig.2 Typical Reverse Characteristics

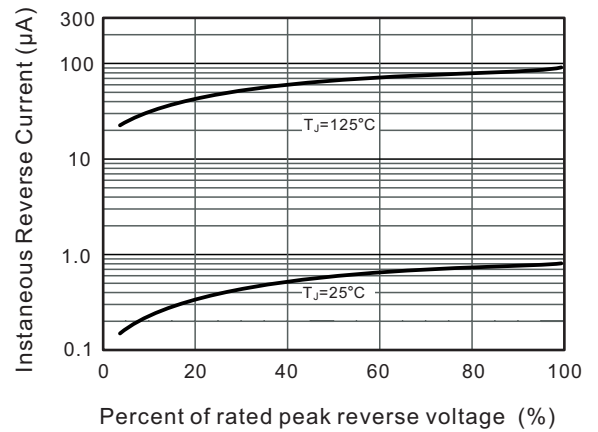


Fig.3 Typical Forward Characteristics

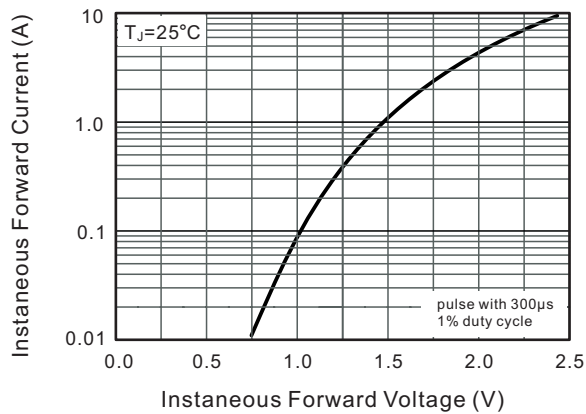
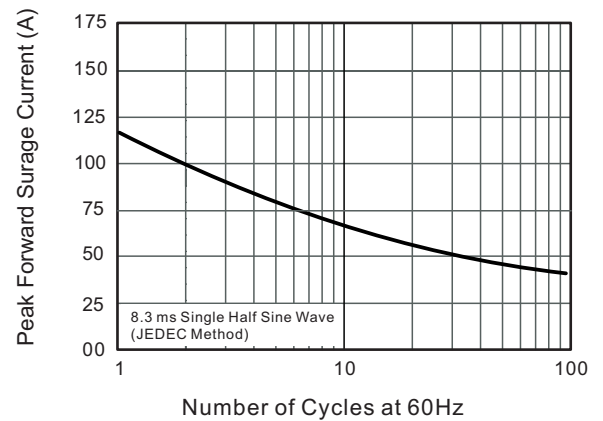


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

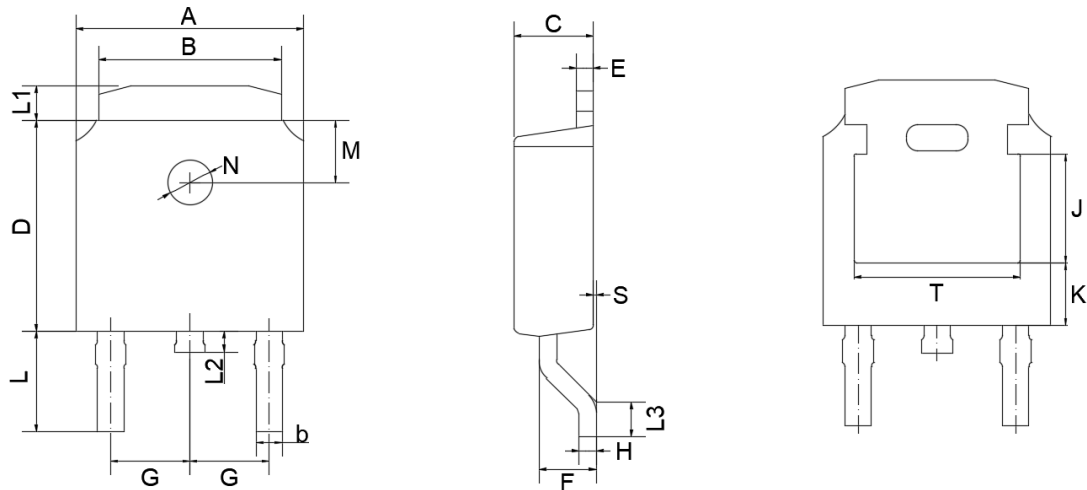




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TO-252(D-PAK) Package Outline Dimensions



TO-252(D-PAK) mechanical data

UNIT		A	B	b	C	D	E	F	G	H	L	L1	L2	L3	S	M	N	J	K	T
mm	max	6.7	5.5	0.86	2.5	6.3	0.6	1.8	2.29 TYPICAL	0.55	3.1	1.2	1.0	1.75	0.1	1.8 TYPICAL	1.3 TYPICAL	3.16	1.80	4.83
	min	6.3	5.1	0.66	2.1	5.9	0.4	1.3		0.45	2.7	0.8	0.6	1.40	0.0			ref.	ref.	ref.
mil	max	264	217	33	98	248	24	71	90 TYPICAL	22	122	47	39	69	4	71 TYPICAL	51 TYPICAL	124	71	190
	min	248	201	26	83	232	16	51		18	106	31	24	55	0			ref.	ref.	ref.