

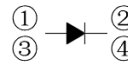
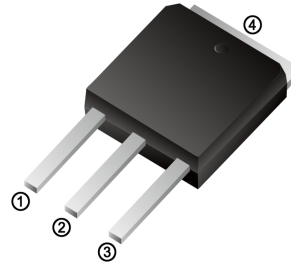


# SF301 THRU SF306 Superfast Recovery Rectifiers

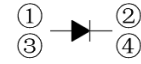
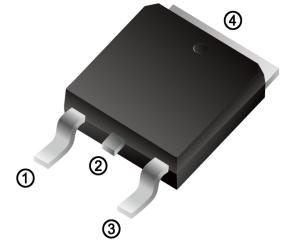
## FEATURES

- High current capability
- Low forward voltage drop
- Low power loss, high efficiency
- High surge capability
- High temperature soldering guaranteed
- Mounting position: any

### TO-251(I-PAK)



### TO-252(D-PAK)



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

CHARACTERISTICS	TO-251	SF301VS	SF302VS	SF303VS	SF304VS	SF305VS	SF306VS	UNIT
	TO-252	SF301DS	SF302DS	SF303DS	SF304DS	SF305DS	SF306DS	
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	100	200	300	400	500	600	V
Maximum RMS Voltage	V <sub>RMS</sub>	70	140	210	280	350	420	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	100	200	300	400	500	600	V
Maximum Average Forward Rectified Current	I <sub(av)< sub=""></sub(av)<>	3.0						A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)	I <sub>FSM</sub>	120						A
Maximum Forward Voltage at 3.0A DC	V <sub>F</sub>	1.0	1.25		1.70			V
Maximum DC Reverse Current at Rated DC Blocking Voltage	I <sub>R</sub>	1.0			300			uA
Typical Junction Capacitance Per Element (Note1)	C <sub>J</sub>	45						pF
Typical Thermal Resistance (Note2)	R <sub>θJC</sub>	25						°C/W
Maximum Reverse Recovery Time(Note3)	T <sub>rr</sub>	35						ns
Operating Temperature Range	T <sub>J</sub>	-55 to +150						°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150						°C

NOTES: 1.Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

2.Mounted on 10cm x 10cm x 1mm copper pad area

3.Reverse Recovery Test Conditions:IF=0.5A,IR=1A,Irr=0.25A



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

FIG.1 - FORWARD CURRENT DERATING CURVE

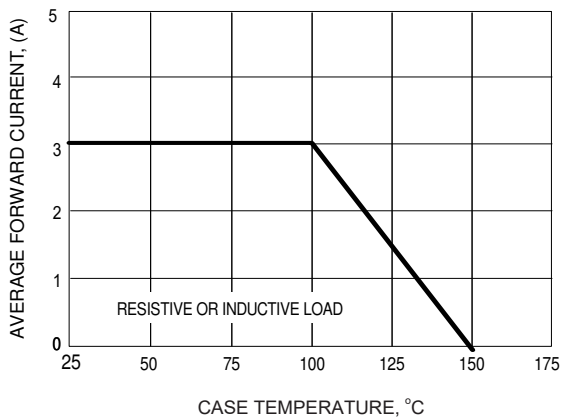


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

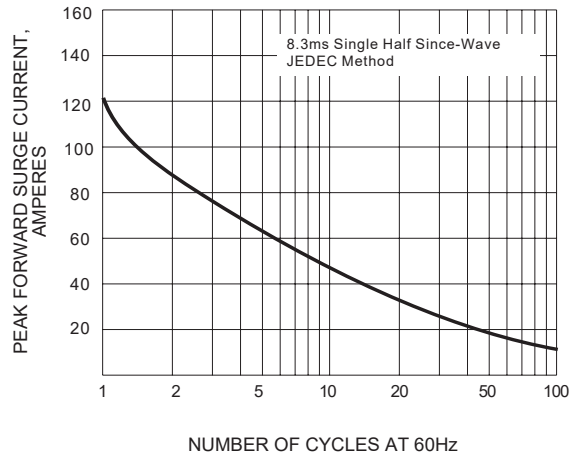


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

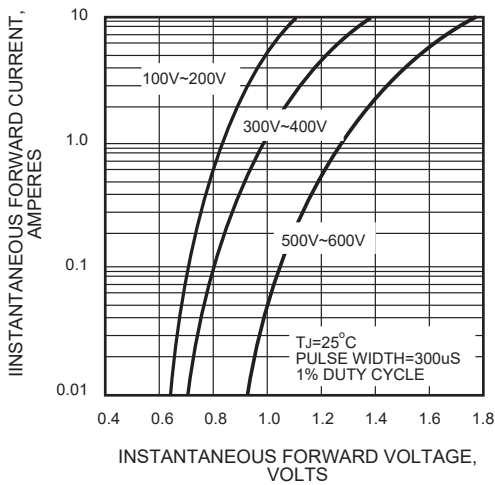


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

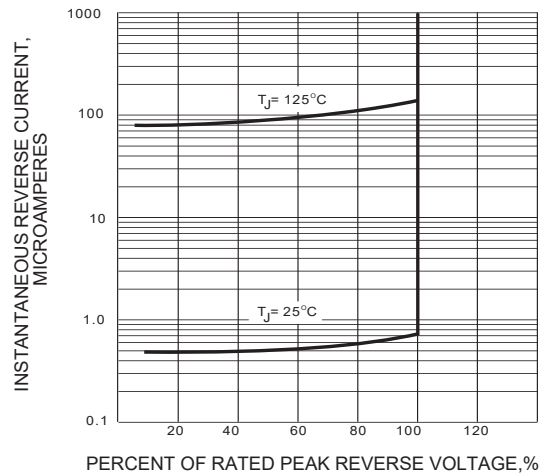
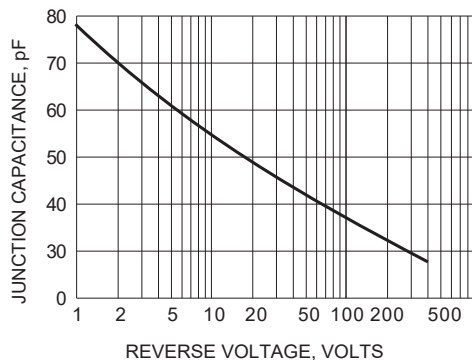


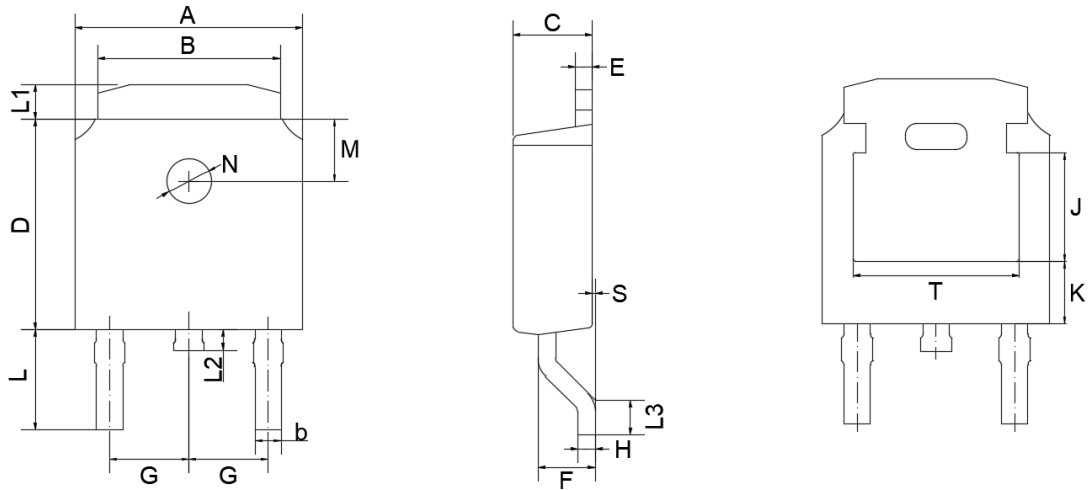
FIG.5 - TYPICAL JUNCTION CAPACITANCE





# SF301 THRU SF306 Superfast Recovery Rectifiers

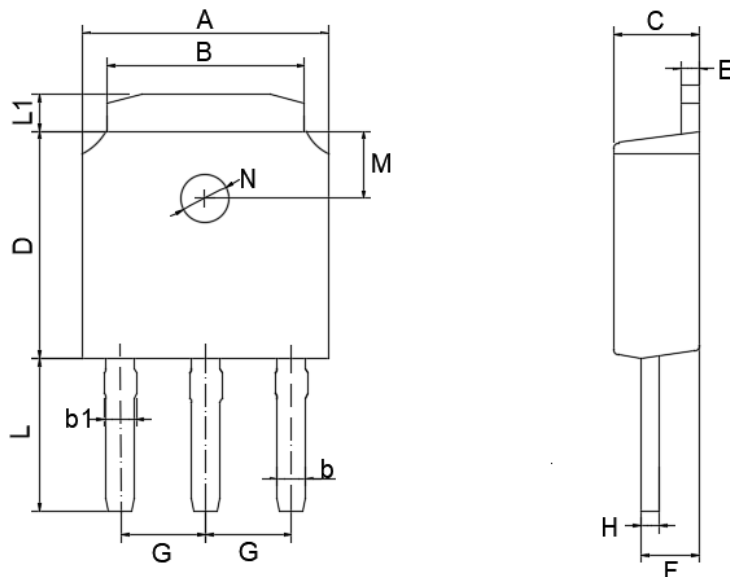
## TO-252(D-PAK) Package Outline Dimensions



TO-252(D-PAK) mechanical data

UNIT		A	B	b	C	D	E	F	G	H	L	L1	L2	L3	M	N	J	K	T
mm	max	6.70	5.50	0.80	2.50	6.30	0.60	1.80	2.29	0.55	3.10	1.20	0.80	1.60	1.8	1.3	3.16	1.80	4.83
	min	6.30	5.10	0.30	2.10	5.90	0.40	1.30	TYPICAL	0.45	2.70	0.80	0.40	1.40	TYPICAL	TYPICAL	ref.	ref.	ref.
mil	max	264	217	31	98	248	24	71	90	22	122	47	31	63	71	51	124	71	190
	min	248	201	12	83	232	16	51	TYPICAL	18	106	31	16	55	TYPICAL	TYPICAL	ref.	ref.	ref.

## TO-251(I-PAK) Package Outline Dimensions



TO-251(I-PAK) mechanical data

UNIT		A	B	b	b1	C	D	E	F	G	H	L	L1	M	N
mm	max	6.70	5.50	0.80	0.90	2.50	6.30	0.60	1.80	2.29	0.55	4.30	1.20	1.8	1.3
	min	6.30	5.10	0.30	0.76	2.10	5.90	0.40	1.30	TYPICAL	0.45	3.90	0.80	TYPICAL	TYPICAL
mil	max	264	217	31	35	98	248	24	71	90	22	169	47	71	51
	min	248	201	12	30	83	232	16	51	TYPICAL	18	154	31	TYPICAL	TYPICAL