



# SF301ET(D) THRU SF306ET(D)

Reverse Voltage -100 to 600 Volts Forward Current - 3.0 Ampere

## SUPER FAST GLASS PASSIVATED RECTIFIERS

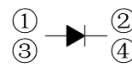
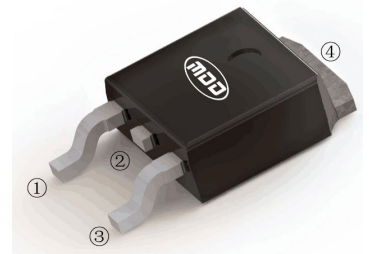
### FEATURES

- ◆ 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)



### MECHANICAL DATA

**Case:** TO-251/252 molded plastic body

**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.0141 ounce (approx), 0.4 grams (approx)

### PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
TO-251	13'	330	2500	340×336×29	2500	353×346×365	25000
TO-252	13'	330	2500	340×336×29	2500	353×346×365	25000

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

MCHARACTERISTICS	TO-251	SF 301ET	SF 302ET	SF 303ET	SF 304ET	SF 305ET	SF 306ET	UNITS
	TO-252	SF 301ED	SF 302ED	SF 303ED	SF 304ED	SF 305ED	SF 306ED	
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	200	300	400	500	600	V
Maximum RMS voltage	$V_{RMS}$	70	140	210	280	350	420	V
Maximum DC blocking voltage	$V_{DC}$	100	200	300	400	500	600	V
Maximum average forward rectified current	$I_{(AV)}$	3.0						A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	120						A
Maximum instantaneous forward voltage at 3.0A	$V_F$	0.95		1.25		1.70		V
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$	$I_R$	1.0 300						$\mu\text{A}$
Typical junction capacitance (NOTE 1)	$C_J$	45						pF
Typical thermal resistance (NOTE 2)	$R_{\theta JC}$	25						$^\circ\text{C}/\text{W}$
Maximum Reverse Recovery Time (Note 3)	$T_{rr}$	35						ns
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150						$^\circ\text{C}$

**Note:** 1. Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.

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

3. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$

4. The typical data above is for reference only.

DN:T18B02A0



# SF301ET(D) THRU SF306ET(D)

Reverse Voltage -100 to 600 Volts Forward Current - 3.0 Ampere

## Rating and Characteristic Curves

FIG.1 - FORWARD CURRENT DERATING CURVE

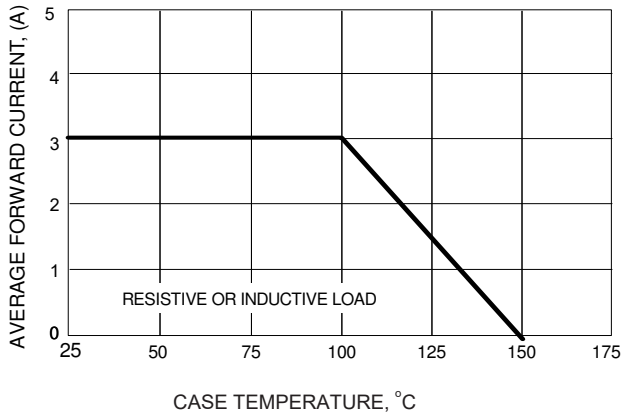


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

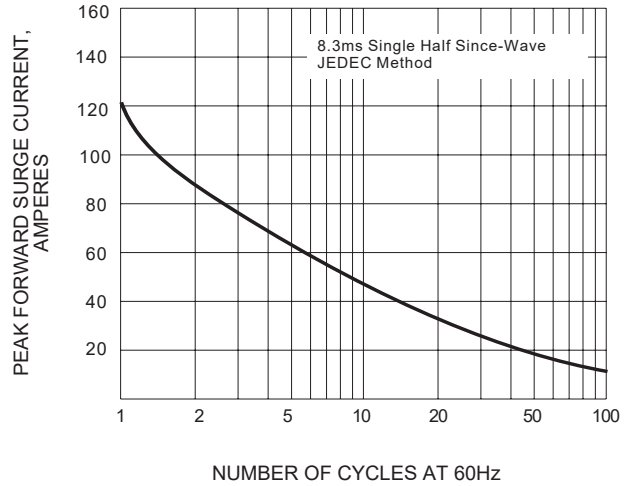


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

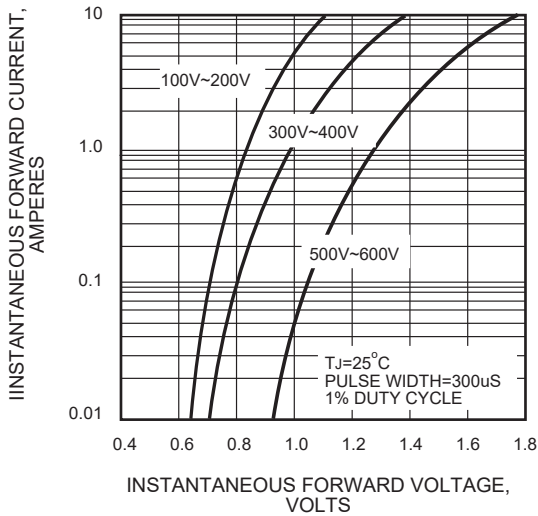


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

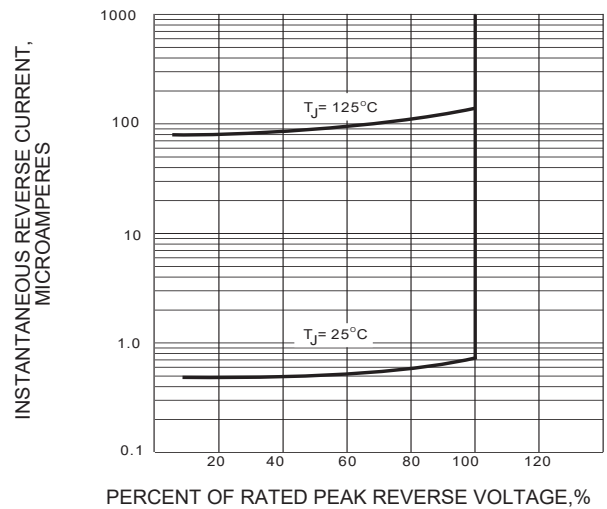
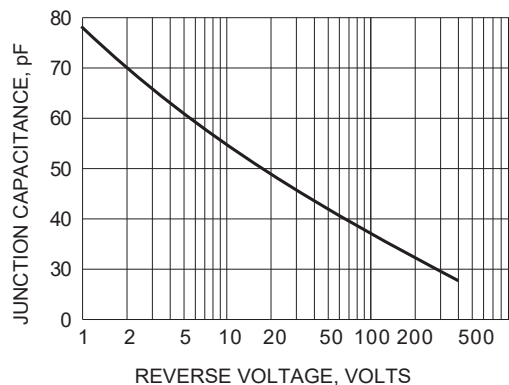


FIG.5 - TYPICAL JUNCTION CAPACITANCE



The curve above is for reference only.

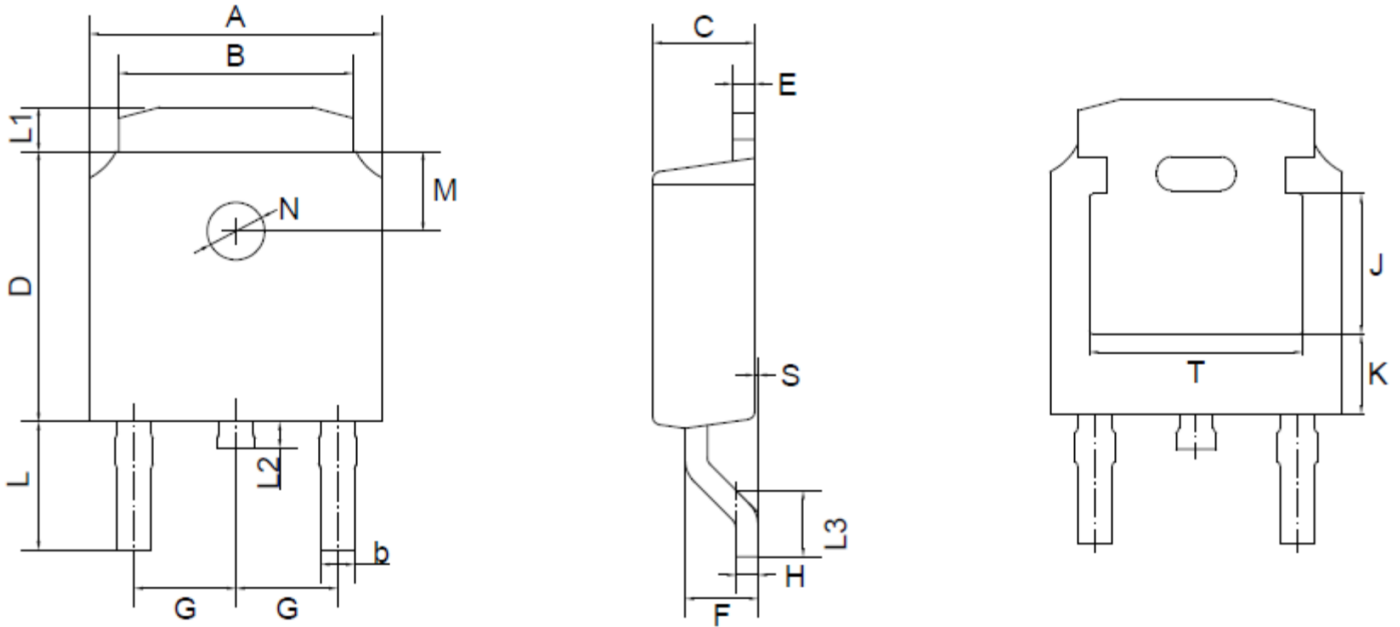


# SF301ET(D) THRU SF306ET(D)

Reverse Voltage -100 to 600 Volts Forward Current - 3.0 Ampere

## Outline Drawing

### 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	0.8	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 ref.	1.80 ref.	4.83 ref.
	min	6.3	5.1	0.3	2.1	5.9	0.4	1.3		0.45	2.7	0.8	0.6	1.40	0.0					
mil	max	264	217	31	98	248	24	71	90 TYPICAL	22	122	47	39	69	4	71 TYPICAL	51 TYPICAL	124 ref.	71 ref.	190 ref.
	min	248	201	12	83	232	16	51		18	106	31	24	55	0					

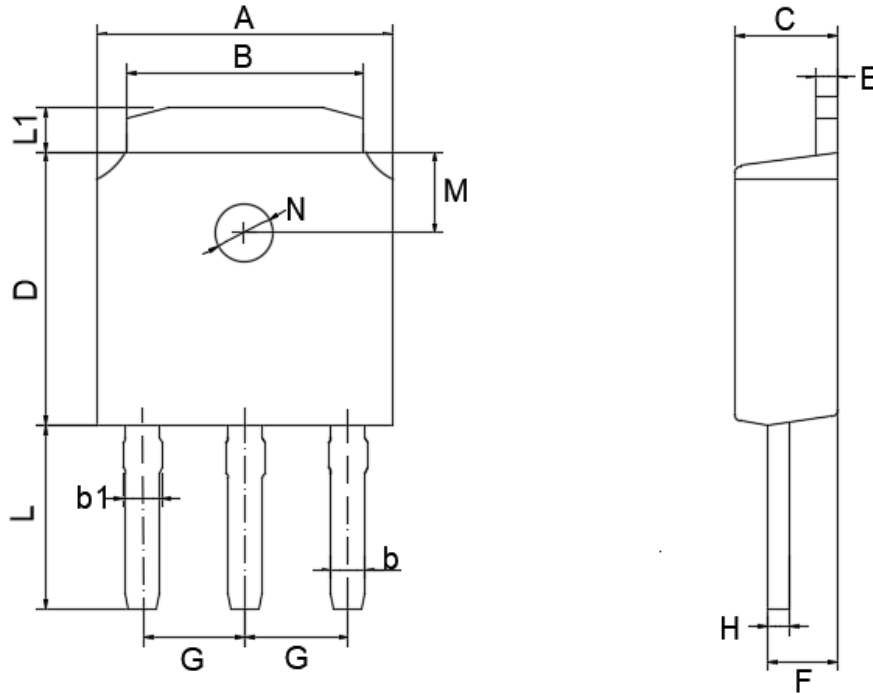


# SF301ET(D) THRU SF306ET(D)

Reverse Voltage -100 to 600 Volts Forward Current - 3.0 Ampere

## Outlitne Drawing

### 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