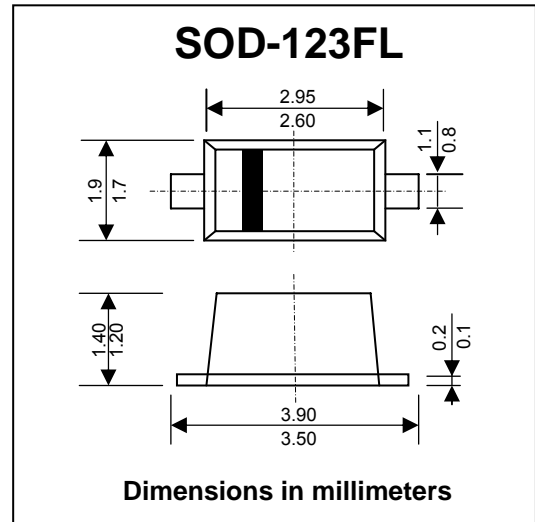


## Fast Recovery Rectifiers

### FR101S ~ FR107S

#### ■ Features

- Metal silicon junction, majority carrier conduction
- For surface mounted applications
- Low power loss, high efficiency
- High forward surge current capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications



#### ■ Absolute Maximum Ratings and Electrical characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

Parameter	Symbols	FR101S	FR102S	FR103S	FR104S	FR105S	FR106S	FR107S	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	
Maximum Instantaneous Forward Voltage at 1A	$V_F$	1.3							A
Maximum Averaged Forward Rectified Current	$I_{F(AV)}$	1							
Peak Forward Surge Current, 8.3 ms Single Half Sine Wave Superimposed on Rated Load	$I_{FSM}$	30							
Maximum DC Reverse Current $T_a=25^\circ\text{C}$ at rated DC blocking voltage $T_a=125^\circ\text{C}$	$I_R$	5 100							$\mu\text{A}$
Typical Junction Capacitance *1	$C_j$	15							pF
Maximum Reverse Recovery Time *2	$t_{rr}$	150				250	500		ns
Typical Thermal Resistance *3	$R_{\theta JA}$	85							$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150							$^\circ\text{C}$

\* 1 Measured at 1MHz and applied reverse voltage of 4V D.C.

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

\* 3 P.C.B. mounted with 2.0" x 2.0" (5x5 cm) copper pad areas.

#### ■ Marking

NO.	FR101S	FR102S	FR103S	FR104S	FR105S	FR106S	FR107S
Marking	F1	F2	F3	F4	F5	F6	F7



■ Typical Characteristics

Fig.1 Forward Current Derating Curve

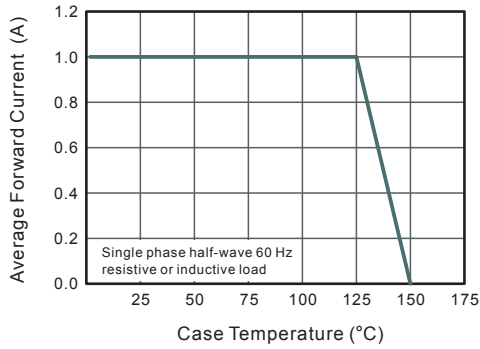


Fig.2 Typical Reverse Characteristics

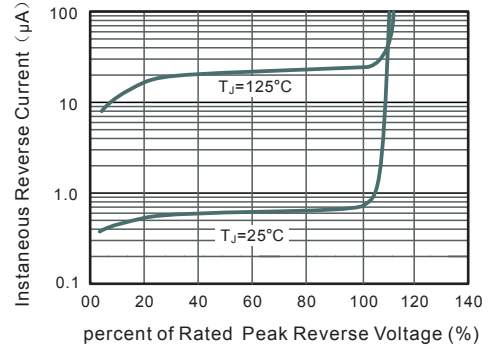


Fig.3 Typical Instantaneous Forward Characteristics

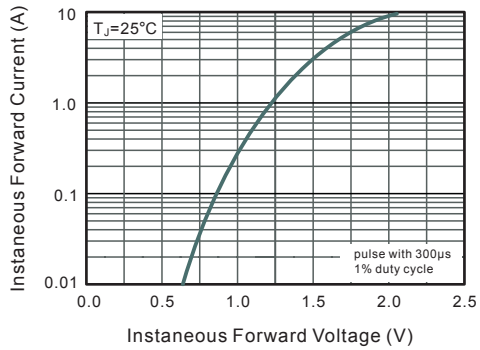


Fig.4 Typical Junction Capacitance

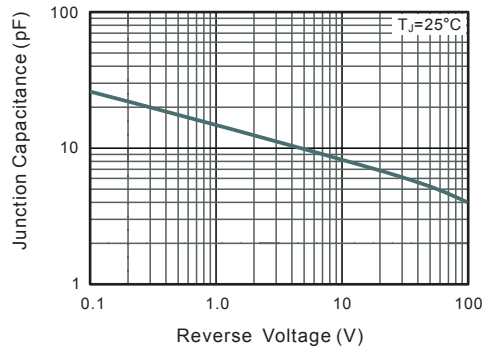
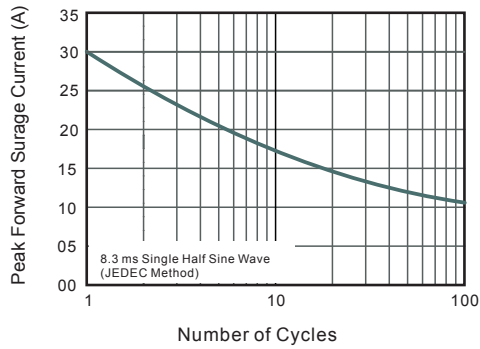


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



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