

RoHS Compliant Product  
 A suffix of "-C" specifies halogen & lead-free

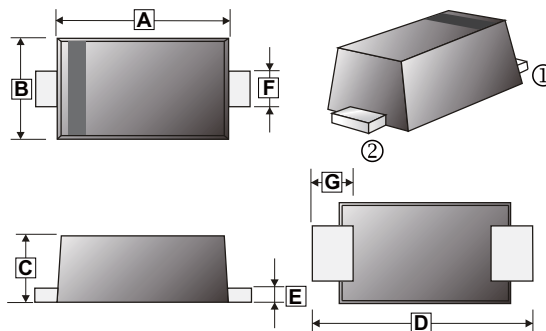
**FEATURES**

- Low forward surge current
- Ideal for surface mounted applications
- Low leakage current

**MECHANICAL DATA**

- Case: JEDEC SOD-123FL, molded plastic over passivated chip
- Terminals: Solder Plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.0008 ounces, 0.022 gram
- Mounting position: Any

**SOD-123FL**



**MARKING**

Product	Marking Code	Product	Marking Code
SM120FL	S2	SM160FL	S6
SM130FL	S3	SM180FL	S8
SM140FL	S4	SM1100FL	SA

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	2.90	E	0.10	0.30
B	1.80	2.00	F	0.80	1.20
C	1.55	1.25	G	0.35	0.85
D	3.50	3.90			

**PACKAGE INFORMATION**

Package	MPQ	LeaderSize
SOD-123FL	2.5K	7' inch

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Rating 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

PARAMETERS	SYMBOL	PART NUMBERS						UNITS	TESTING CONDITIONS
		SM 120FL	SM 130FL	SM 140FL	SM 160FL	SM 180FL	SM 1100FL		
Recurrent Reverse Voltage (Max.)	$V_{RRM}$	20	30	40	60	80	100	V	
RMS Voltage (Max.)	$V_{RMS}$	14	21	28	42	56	70	V	
DC Blocking Voltage (Max.)	$V_{DC}$	20	30	40	60	80	100	V	
Instantaneous Forward Voltage (Max.)	$V_F$	0.50	0.55		0.72	0.85		V	$I_{FM} = 1.0A$
Average Forward Rectified Current (Max.)	$I_{(AV)}$	1.0						A	$T_J = 90^{\circ}C$
Peak Forward Surge Current	$I_{FSM}$	20						A	8.3ms single half sine-wave superimposed on rated load (JEDEC method)

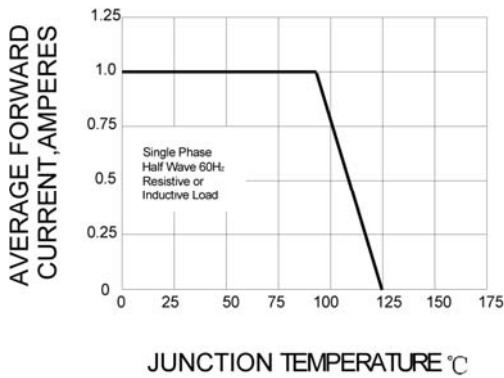
Typical thermal resistance junction to ambient <sup>1</sup>	R <sub>θJA</sub>	200	°C / W	
Typical thermal resistance junction to lead <sup>2</sup>	R <sub>θJL</sub>	25		
DC Reverse Current at Rated DC Blocking Voltage (Max.)	I <sub>R</sub>	0.3	mA	
Typical Junction Capacitance <sup>3</sup>	C <sub>J</sub>	30	pF	
Operating Temperature Range	T <sub>J</sub>	-55 ~ 125	°C	
Storage Temperature Range	T <sub>STG</sub>	-55 ~ 150	°C	

Notes :

1. Mounted on epoxy substrate with 3 x 3 mm CU pads ( $\geq 40 \mu\text{m}$  thick).
2. Mounted with minimum recommended pad size, PC Board FR4.
3. Measured at  $f=1.0\text{MHz}$ ,  $V_R=4.0\text{V}$

**RATINGS AND CHARACTERISTIC CURVES (SM120FL~SM1100FL)**

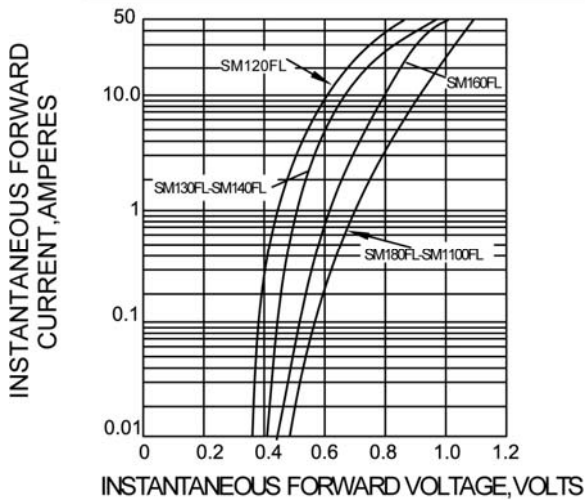
**FIG.1 – FORWARD DERATING CURVE**



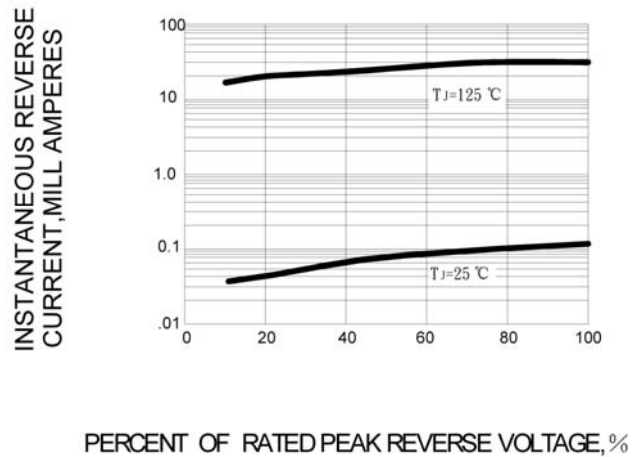
**FIG.2- PEAK FORWARD SURGE CURRENT**



**FIG.3 – TYPICAL FORWARD CHARACTERISTICS**



**FIG.4 – TYPICAL REVERSE CHARACTERISTICS**



**FIG.5-TYPICAL JUNCTION CAPACITANCE**

