

## Features

- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note 2)("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Glass Passivated Chip Junction
- High Junction Temperature Capability
- Fully Automotive Qualified to AEC-Q101

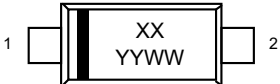

## Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value		Unit
		SM4004PLQ	SM4005PLQ	
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	400	600	V
Working Peak Reverse Voltage	V <sub>RWM</sub>			
DC Blocking Voltage	V <sub>R</sub>			
RMS Reverse Voltage	V <sub>RMS</sub>	280	420	V
Average Rectified Forward Current @ T <sub>L</sub> =135°C	I <sub>F(AV)</sub>	1		A
Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave	I <sub>FSM</sub>	30		A
Non-Repetitive Peak Surge Current @ 1ms Square Wave		60		
Current Squared Time @1ms≤t≤8.3ms	I <sup>2</sup> t	3.7		A <sup>2</sup> s

## Marking Code

Part Number	Marking Code
SM4004PLQ	A4
SM4005PLQ	A5

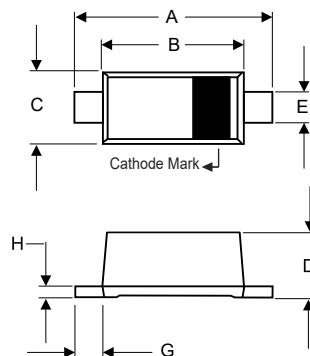
## Internal Structure

Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode	 <p>XX = Marking Code YYWW = Date Code</p>	
2	Anode		

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

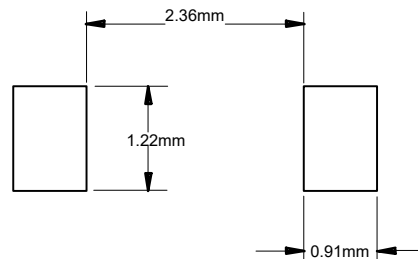
# 1 Amp General Purpose Rectifier 400 to 600 Volts

## SOD-123FL



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.130	0.152	3.30	3.85	
B	0.100	0.122	2.55	3.10	
C	0.055	0.075	1.40	1.90	
D	0.035	0.053	0.90	1.35	
E	0.020	0.041	0.50	1.05	
G	0.010	----	0.25	----	
H	----	0.010	----	0.25	

## SUGGESTED SOLDER PAD LAYOUT



## Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$T_J$	Operating Junction Temperature Range		-55		175	°C
$T_{stg}$	Storage Temperature Range		-55		175	°C
$R_{th(J-L)}$	Thermal Resistance from Junction to Lead	Note 1		35		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		85		°C/W

Note:

1. Mounted on P.C.B. with 3mm\*3mm copper pad areas.

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	$V_F$	$I_F=1A; T_J=25^{\circ}C$			1.1	V
Reverse Current	$I_R$	at Rated $V_R; T_J=25^{\circ}C$ at Rated $V_R; T_J=125^{\circ}C$			5 100	$\mu A$
Junction Capacitance	$C_J$	$V_R=4V; f=1MHz; T_J=25^{\circ}C$		8		pF
Reverse Recovery Time	$t_{rr}$	$I_F=0.5A; I_R=1.0A; I_{rr}=0.25A; T_J=25^{\circ}C$		1.7		$\mu S$

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

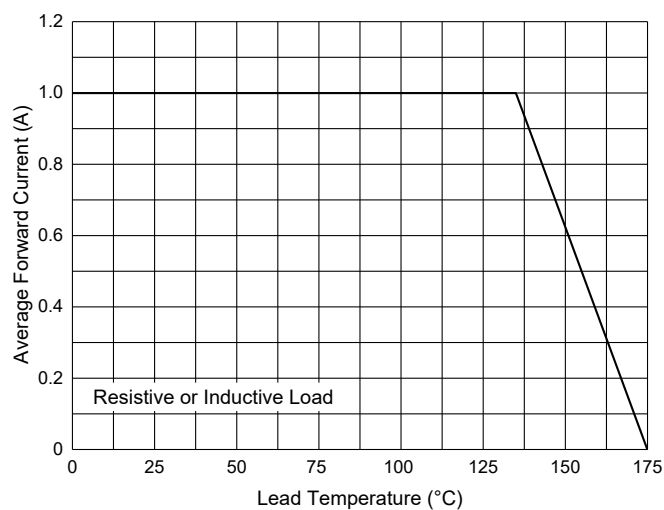


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

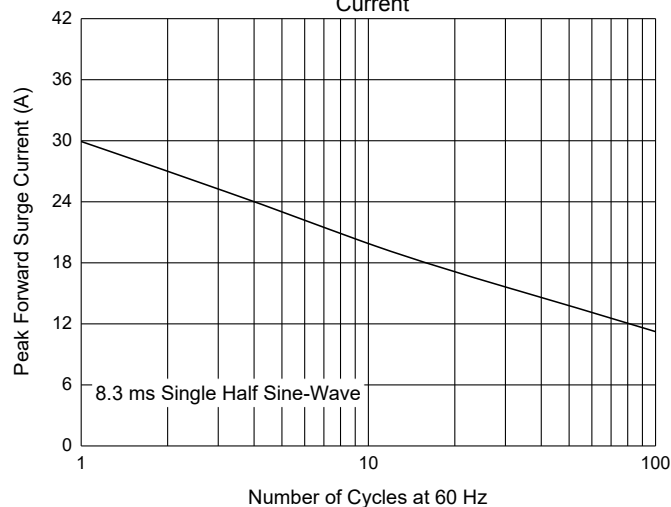


Fig. 3 - Typical Forward Characteristics

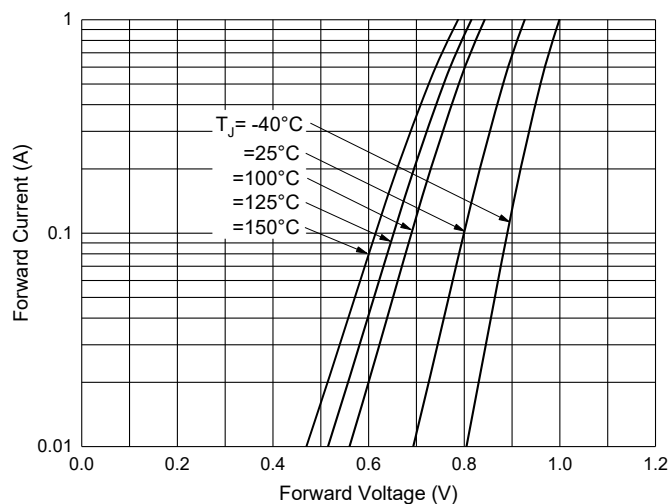


Fig. 4 - Typical Reverse Leakage Characteristics

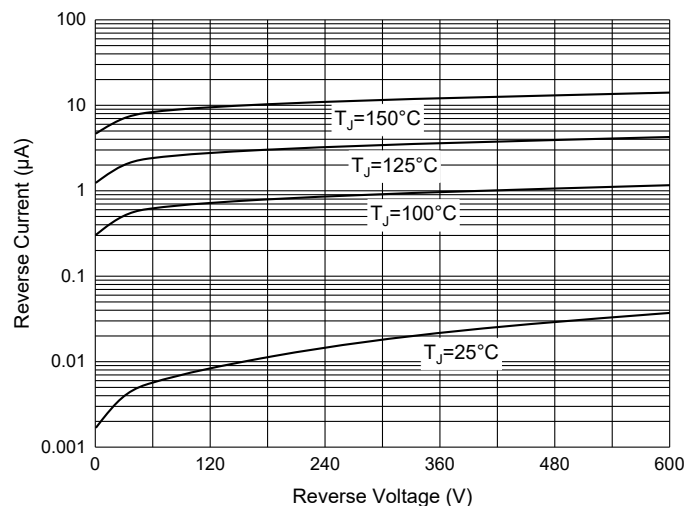
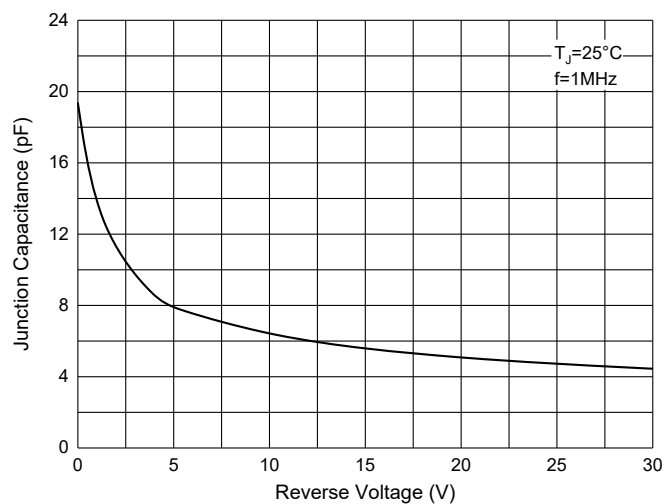


Fig. 5 - Typical Capacitance Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:2.5Kpcs/Reel

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