SMAJ150(C)A

SMA Transient Voltage Suppressors Diode
SMA 瞬态电压抑制二极管

1. Description 描述

This device is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.
该器件专为保护敏感电子设备免受雷击及其他瞬态电压事件所引起的电压瞬变干扰而设计的。

2. Features 特性

Feature 特性	Description 描述
Peak Pulse Power Dissipation 峰值脉冲耗散功率	$P_{pk} = 400W$
Low leakage current 低漏电流	$I_R < 5\mu A$
Applications 应用	Clamping Voltage 钳制电压
Environmental Compliance 环保合规	Totally Lead-Free & Fully RoHS Compliant. 完全无铅和符合 RoHS 标准[1] Halogen and Antimony Free, "Green" Device. 无卤素和无锑，“绿色”器件[2]
Automotive Compliance 汽车合规	AEC-Q101 qualified. 通过了 AEC-Q101 认证。

[1] No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
无铅，完全符合欧盟标准 2002/95/EC（RoHS），2011/65/EU （RoHS 2）和 2015/863/EU （RoHS 3）。
[2] Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
无卤素和无锑的“绿色”产品指溴含量<900ppm，氯含量<900ppm（溴+氯总含量<1500ppm）和锑化合物含量<1000ppm。

3. Mechanical Data 封装数据

Feature 特性	Description 描述
Package 封装	SMA(DO-214AC)
Moisture Sensitivity Level 湿敏感度等级	J-STD-020 MSL1
Material 材料	Molded Plastic, “Green” Molding Compound; UL Flammability Classification Rating 94V-0. 模塑塑料封装，“绿色”成型复合材料；UL 可燃性等级 94V-0。
Dimensions 尺寸	$4.3mm \times 2.65mm \times 2.1mm$ body 封装本体（不含引脚）尺寸为 $4.3mm \times 2.65mm \times 2.1mm$
Terminals Compliance 引脚合规	2 terminals, Tin Plated Leads, Solderable per MILSTD-202, Method 208 e3 2 个镀锡引脚，可焊性符合 MIL-STD-202 标准中 208 方法 e3 条款的要求
Weight 重量	0.064 grams (Approximate) 约 0.064 克
Polarity 极性	see Diagrams Below 极性见下图

SMA Top View

Device Symbol

4. Ordering Information 订购信息

Part Number	Compliance	Package	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
SMAJ150A	Automotive	SMA	13	12	5000
SMAJ150CA	Automotive	SMA	13	12	5000

5. Marking Information 丝印信息

Part Number		Marking Code
Unidirectional	SMAJ150A	SM
Bidirectional	SMAJ150CA	VM

6. Absolute Maximum Ratings(T_a =+ 25℃) 绝对最大额定值

Characteristic 特性	Symbol 符号	Value 值	Unit 单位
Peak Pulse Power Dissipation 峰值脉冲耗散功率	P_{pk}	400	W
Reverse Stand-off Work Voltage 反向工作电压	V_{RWM}	150	V
Peak Pulse Current 峰值脉冲电流	I_{pp}	1.6	A
Peak Forward Surge Current (UNI) 峰值正向浪涌电流	I_{FSM}	40	A
Forward Voltage (UNI) $@I_F = 25A$ 正向电压	V_F	3.5	V

7. Thermal Characteristics(T_a =+ 25℃) 热特性

Characteristic 特性	Symbol 符号	Value 值	Unit 单位
Thermal Resistance From Junction To Ambient 结到环境的热阻	$R_{\theta JA}$	30	℃/W
Operating Junction Temperature 运行结温	T_J	-55 ~ +150	℃
Storage Temperature 储藏温度	T_{stg}	-55 ~ +150	℃

8. Electrical Characteristics(T_a =+ 25℃) 电特性

Characteristic 特性	Symbol 符号	Min. 最小值	Typ. 典型值	Max. 最大值	Unit 单位	Conditions 条件
Breakdown Voltage 击穿电压	V_{BR}	167	-	185	V	$I_T = 1mA$
Reverse Leakage Current 反向漏电流	I_R	-	-	5	μA	$V_R = V_{RWM}$
Clamping Voltage 钳位电压	V_{CL}	-	-	243	V	$I_{PP} = 1.6A$

9. Typical Electrical Characteristics Curve 典型电特性曲线

Figure1. Peak Pulse Power Derating Curve

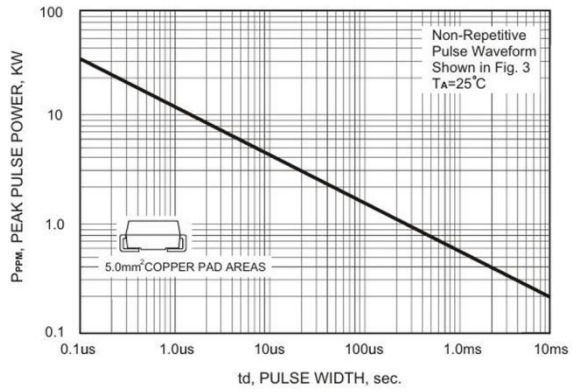


Figure2. Pulse Derating Curve

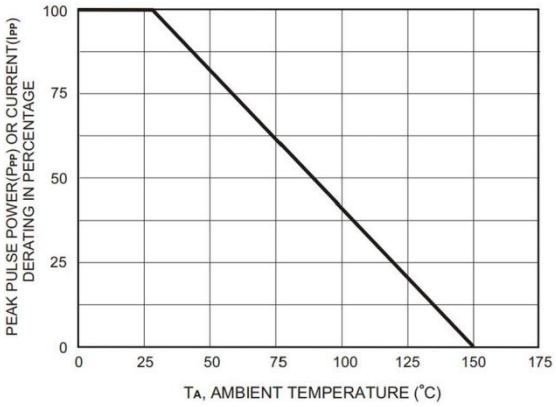


Figure3. Pulse Waveform

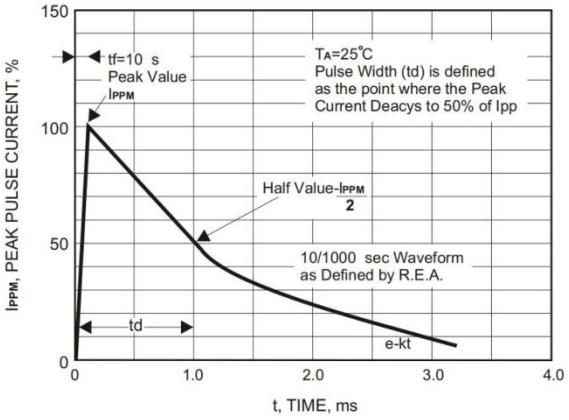


Figure4. Typical Junction Capacitance

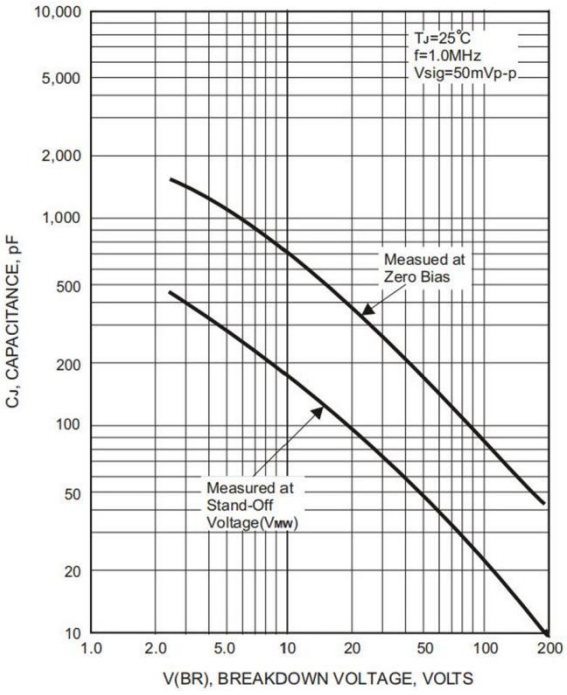
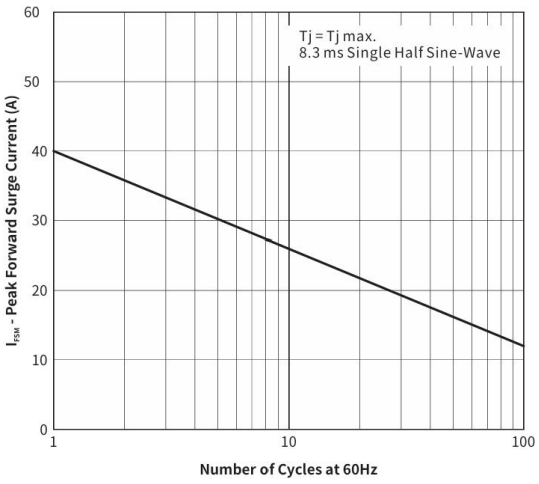
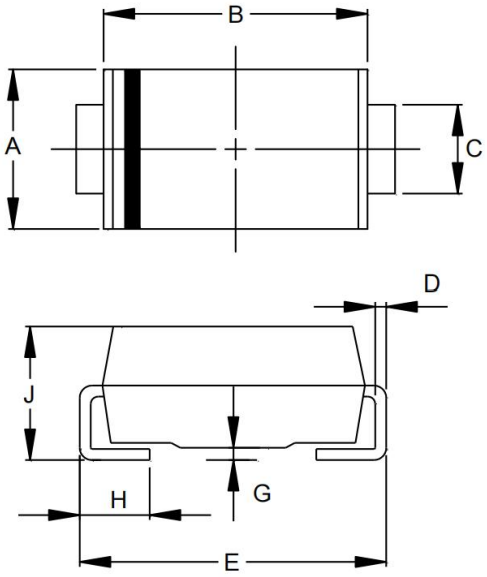


Figure5. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



10. Package Outline Dimensions 封装外形尺寸

SMA



Symbol 符号	Millimeters 毫米	
	Min.最小值	Max.最大值
A	2.54	2.79
B	3.99	4.50
C	1.32	1.47
D	0.15	0.31
E	4.93	5.28
G	-	0.127
H	0.76	1.52
J	1.98	2.29

11. Suggested Pad Layout 推荐焊盘布局

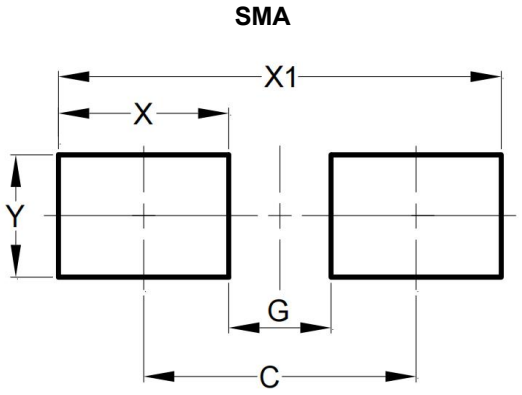


Fig. Soldering footprint for SMA

图 SMA 的引脚焊接

Dimensions 尺寸	Millimeters 毫米
C	4.0
G	1.5
X	2.5
X1	6.5
Y	1.7

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