

SPECIFICATION SHEET NO.	S1112- SM12OCL00SCO12	
ORIGINAL MFG/PART NO.	 LGE LGE Diodes/SM12OC-L	
NEXTGEN PART CODE	SM12OCL00SCO12	Indicate This Code For RFQ /Order
DATE	Nov. 12, 2025	
REVISION	A3	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	<p>Bi-directional TVS Diodes Array SMxxOC L Series, Case SOT-23, 3 Pads, Reverse Working Voltage (VRWM): 12V Clamping Voltage (Vc): 19V Max.@1.0A Operating Temperature Range (TOPT) -55°C ~+150°C Package in Tape/Reel, 3000pcs/Reel RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)</p>	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE			
Issued/Checked/Approved			
Effective Date: Nov. 12, 2025			

CUSTOMER APPROVE	
Date:	

DESCRIPTION

The SMxxOC L Series is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium. This series has been specifically designed to protect sensitive components which are connected to power data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events) and EFT (electrical fast transients).

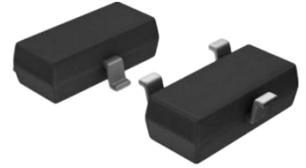


Image shown is a representation only. Exact specifications should be obtained from the product dimension.

MAIN FEATURE

- 130 Watts Peak Pulse Power per (8/20 μ s)
- IEC61000-4-2 (ESD) \pm 15kV (air), \pm 8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- Protects two bidirectional line
- Low Clamping Voltage
- Working Voltages: 5V and 12V
- Meet MSL 1 Requirement
- Cross Competitors Parts and More.
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)



APPLICATION

- Cell phone Handsets And Accessories
- Microprocessor Based Equipment and Personal Digital Assistants (PDA's)
- Notebooks, Desktops and Servers
- Portable Instrumentation and Networking and Telecom
- Serial/Parallel Ports/Quick charger

ELECTRICAL CHARACTERISTICS

- See Page 6.
- All Parameters are Subject To NextGen Components’ Final Confirmation

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code SM12OCL00SCO12 For RFQ and Order.

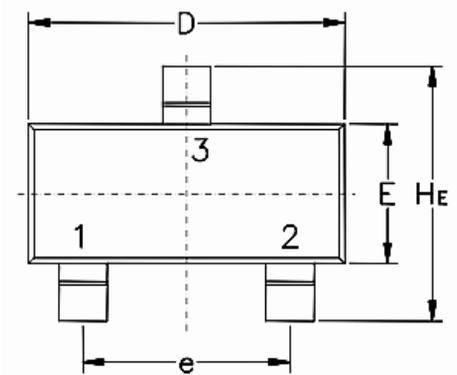
PART CODE GUIDE

RFQ
Request For Quotation

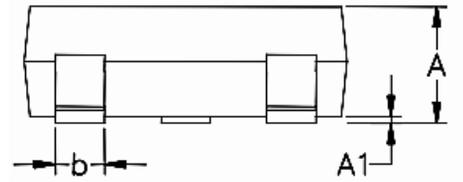
CODE	NAME	KEY SPECIFICATION OPTION
SM	Product Series Code	Bi-directional TVS Diodes Array SMxxOC L Series, Case SOT-23, 3 Pads
12	Reverse Working Voltage (VRWM) Code	05: 5.0V ; 12: 12V
OCL00S	Internal Control Code	Letter or Digits (A~Z, a~z or 0~9)
CO12	Marking Code	Marking “CO12” or See Marking list For different part code
XX	Special/Custom Parameters Code	Letter or Digits (A~Z, a~z or 0~9) for Special Parametric Blank: N/A

DIMENSION- Unit: mm, Case SOT-23 Outline

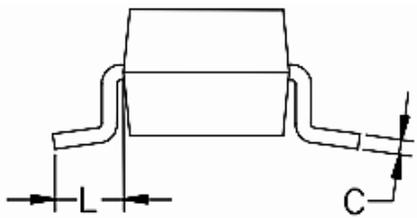
Top View



Side View



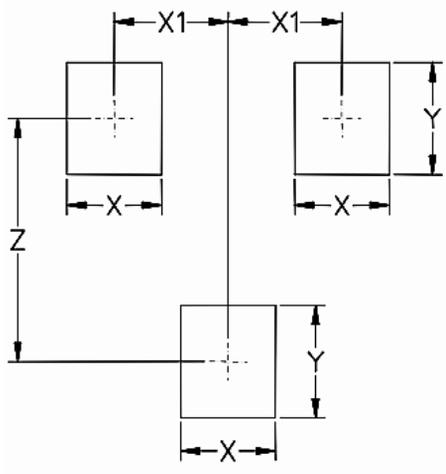
Side View



SYMBOL	DIMENSION (MM)		
	MIN.	TYP.	MAX.
A	0.89	1.00	1.10
A1	0.01	0.06	0.10
b	0.37	0.44	0.50
c	0.09	0.13	0.18
D	2.80	2.90	3.04
E	1.20	1.30	1.40
e	1.78	1.90	2.04
L	0.35	0.54	0.69
HE	2.10	2.40	2.64

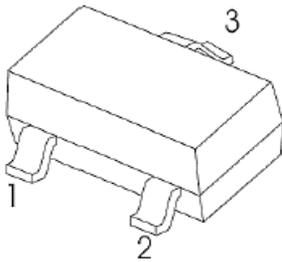
SYMBOL	DIMENSION (INCH)		
	MIN.	TYP.	MAX.
A	0.035	0.040	0.044
A1	0.001	0.002	0.004
b	0.15	0.18	0.20
c	0.003	0.005	0.007
D	0.110	0.114	0.120
E	0.047	0.051	0.055
e	0.070	0.075	0.081
L	0.014	0.021	0.029
HE	0.083	0.094	0.104

Recommend Pad Layout

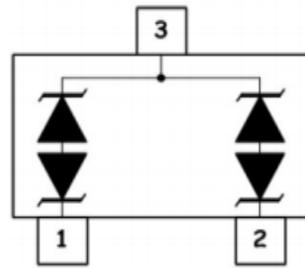


SYMBOL	DIMENSION (MM)	DIMENSION (INCH)
X	0.80	0.031
X1	0.95	0.037
Y	0.90	0.035
Z	2.00	0.079

Pin Configuration



Circuit Diagram



MECHANICAL CHARACTERISTICS

CASE/PACKAGE	FLAMMABILITY RATING	TERMINALS	HIGH TEMPERATURE SOLDERING GUARANTEED	MARKING
JEDEC SOT-23 molded plastic body	UL 94V-0	Matte tin plated	260°C/10s	See Marking list

ABSOLUTE MAX. RATING & CHARACTERISTICS - TA=25°C unless otherwise specified

PARAMETER	SYMBOLS	VALUE	UNITS
ESD per IEC 61000-4-2 (Air)	VESD	±30	KV
ESD per IEC 61000-4-2 (Contact)	VESD	±20	KV
Peak Pulse Power (tp=8/20us waveform)	PPP	130	W
Operating Temperature Range	TOPT	-55 ~ +150	°C
Storage Temperature Range	TSTG	-55 ~ +150	°C
Lead Solder Temperature- Max. (10s Duration)	TL	260 /10s	°C

ELECTRICAL CHARACTERISTICS - TA=25°C unless otherwise specified

PART CODE	MAX. V _{RWM}	MIN. V _B	I _T	V _C				MAX. I _R	MAX. C _T	MARKING LIST
				MAX.	@A	MAX.	@A			
	V	V	mA	V		V		µA	PF	
SM05OCL00SCO05	5	5.6	1	8.5	1	16	8	1	15	CO05
SM12OCL00SCO12	12	13.3	1	19	1	26	5	0.2	15	CO12

ELECTRICAL CHARACTERISTICS CURVE - For Reference Only

Fig 1 8/20µs Waveform per IEC61000-4-5

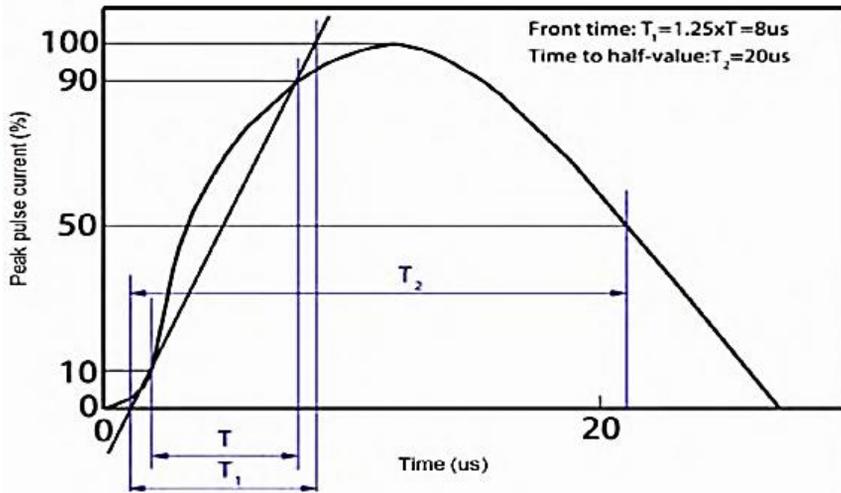
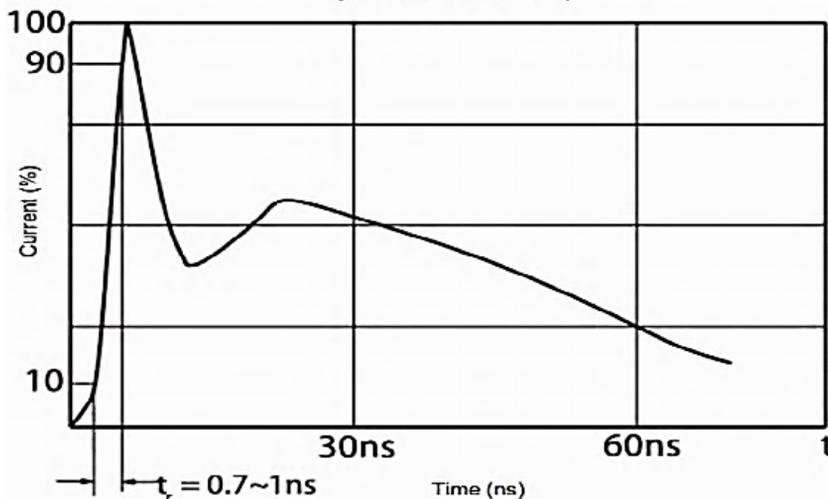


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2



ELECTRICAL CHARACTERISTICS CURVE - For Reference Only

Fig 3 Voltage vs Capacitance

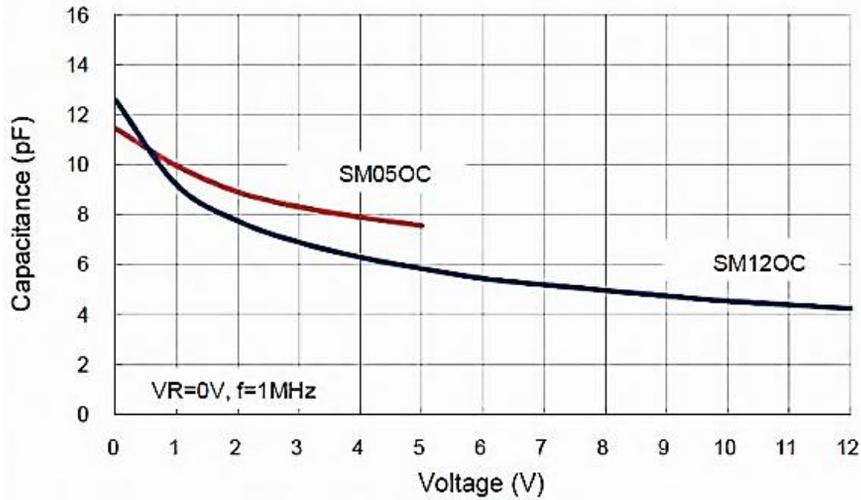
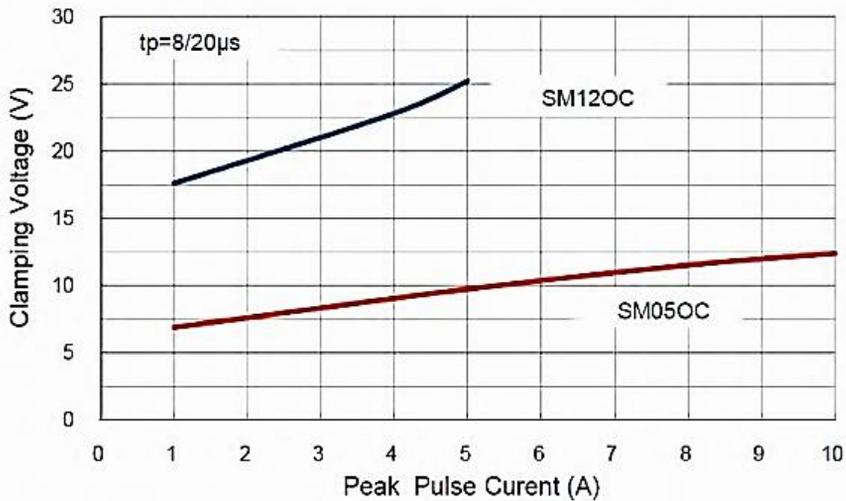
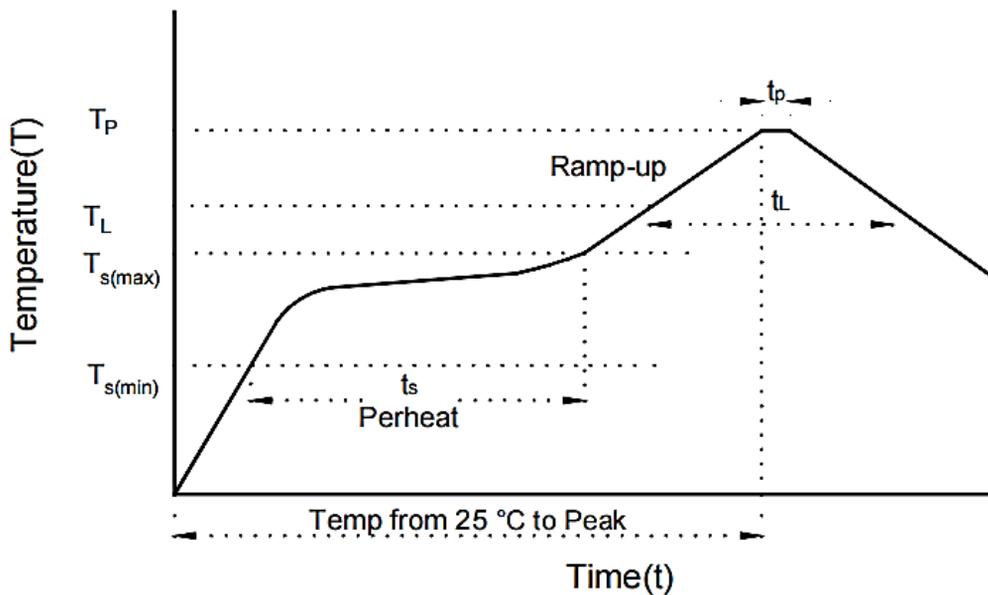


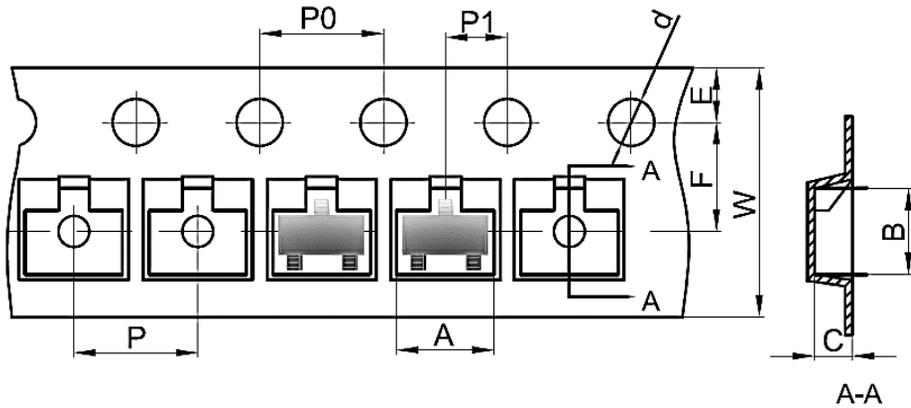
Fig 4 Peak Pulse Current vs Clamping Voltage



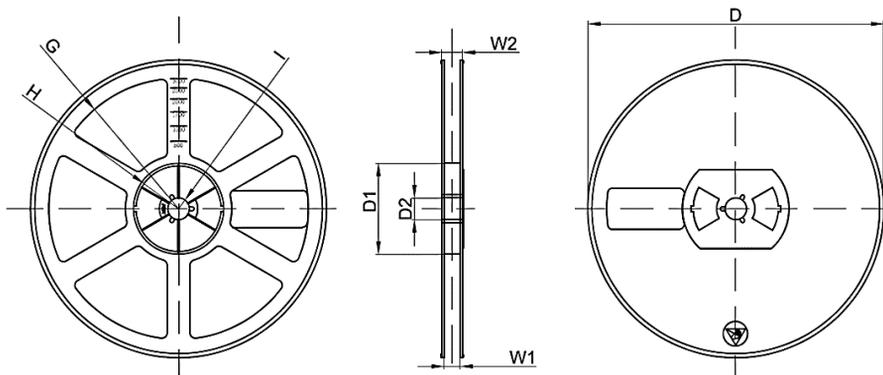
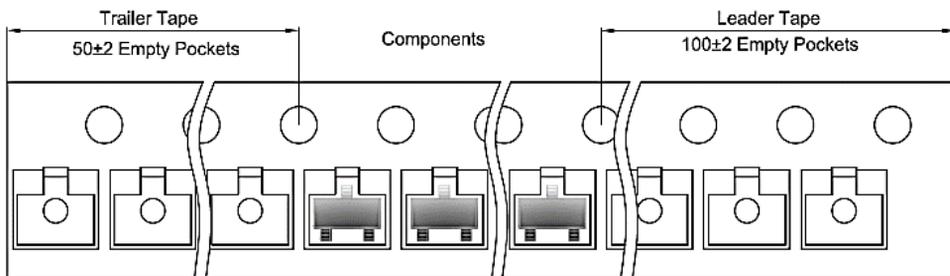
RECOMMENDED SOLDERING PARAMETERS – For Reference Only


PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (T_L Max to T_p)		3°C/second Max
Preheat	Temperature Min (T_s Min.)	150°C
	Temperature Max (T_s Max.)	200°C
	Time (t_s Min. to t_s Max.)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	217°C
	Time (t_l)	60 ~ 150 seconds
Peak/Classification Temperature (T_p)		260 °C
Time within 5°C of actual Peak Temperature (t_p)		10 seconds Max.
Ramp-down Rate		6 °C /Second Max.
Time 25 °C to Peak Temperature		8 Minutes Max.
Suggest reflow times		3 Times Max.

TAPE/REEL - Unit: mm, All Devices are packed in accordance with EIA standard RS-481-A and specifications



Case	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	∅1.5	1.75	3.5	4.0	4.0	2.0	8.0



Reel Size	D	D1	D2	G	H	I	W1	W2	Qty. (pcs)
7"	∅178	54.4	13.0	R78.0	R25.6	R6.5	9.5	12.3	3000

IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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