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|----------------------------------|---|---|
| SPECIFICATION SHEET NO. | S1112- SM05OCL00SCO05 | |
| ORIGINAL MFG/PART NO. |  LGE Diodes/SM05OC-L | |
| NEXTGEN PART CODE | SM05OCL00SCO05 | 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): 5.0V Clamping Voltage (Vc): 8.5V 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).

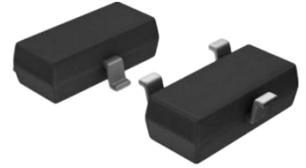


Image shown is a representation only. Exact specifications should be obtained from the product dimension.

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 SM05OCL00SCO05 For RFQ and Order.

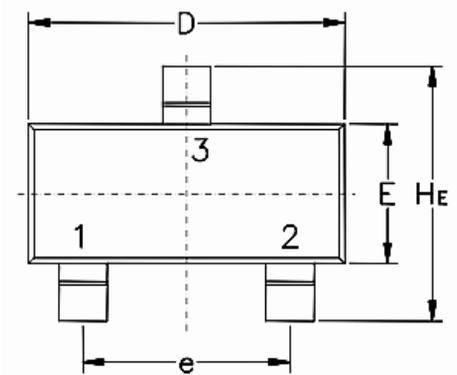
PART CODE GUIDE

RFQ
Request For Quotation

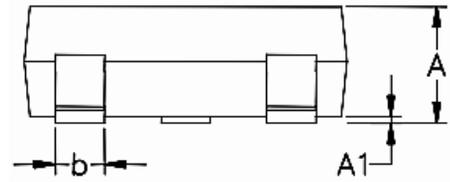
| CODE | NAME | KEY SPECIFICATION OPTION |
|--------|-------------------------------------|---|
| SM | Product Series Code | Bi-directional TVS Diodes Array SMxxOC L Series, Case SOT-23, 3 Pads |
| 05 | Reverse Working Voltage (VRWM) Code | 05: 5.0V ; 12: 12V |
| OCL00S | Internal Control Code | Letter or Digits (A~Z, a~z or 0~9) |
| CO05 | Marking Code | Marking “CO05” 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

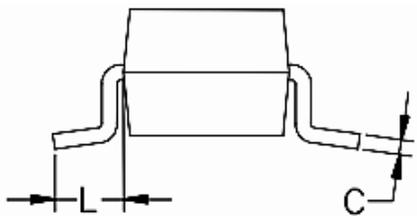
Top View



Side View



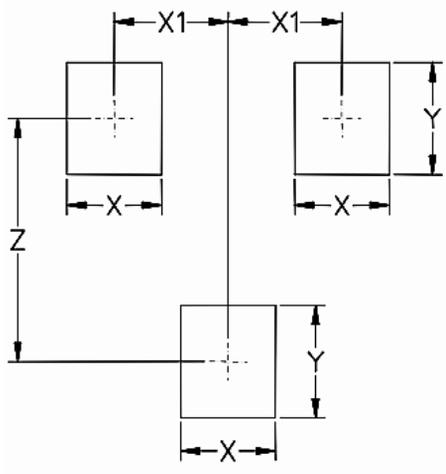
Side View



| 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 |

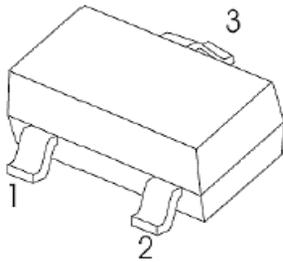
| SYMBOL | DIMENSION (INCH) | | |
|--------|------------------|-------|-------|
| | MIN. | TYP. | MAX. |
| A | 0.035 | 0.040 | 0.044 |
| A1 | 0.001 | 0.002 | 0.004 |
| b | 0.15 | 0.18 | 0.20 |
| c | 0.003 | 0.005 | 0.007 |
| D | 0.110 | 0.114 | 0.120 |
| E | 0.047 | 0.051 | 0.055 |
| e | 0.070 | 0.075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

Recommend Pad Layout

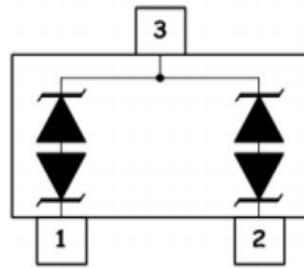


| SYMBOL | DIMENSION (MM) | DIMENSION (INCH) |
|--------|----------------|------------------|
| X | 0.80 | 0.031 |
| X1 | 0.95 | 0.037 |
| Y | 0.90 | 0.035 |
| Z | 2.00 | 0.079 |

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

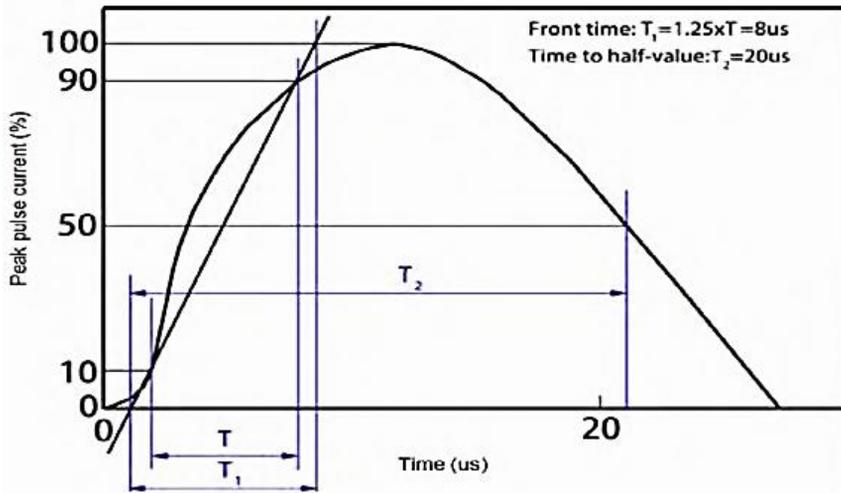
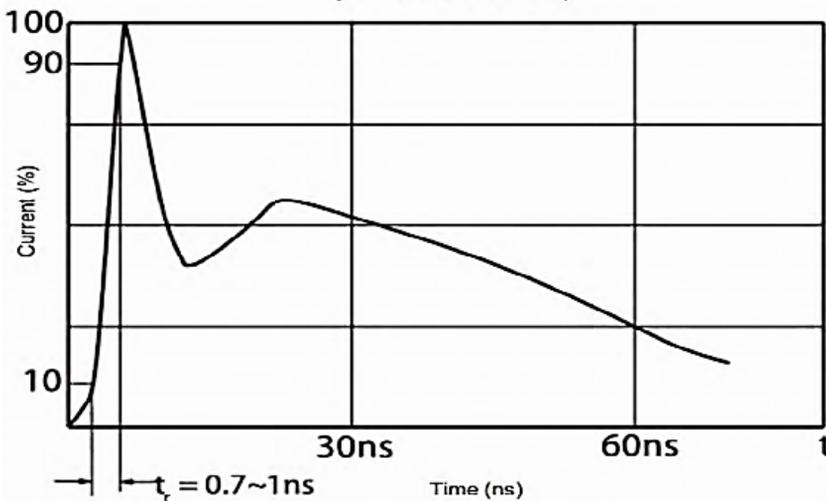


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2



ELECTRICAL CHARACTERISTICS CURVE - For Reference Only

Fig 3 Voltage vs Capacitance

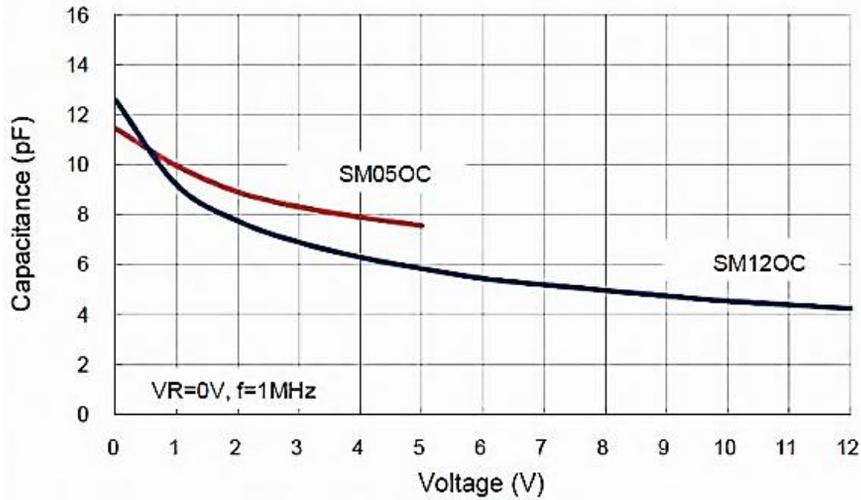
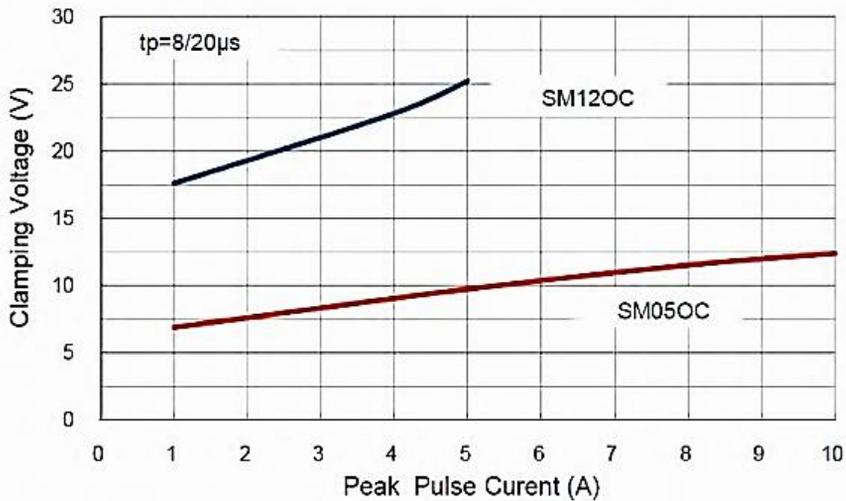
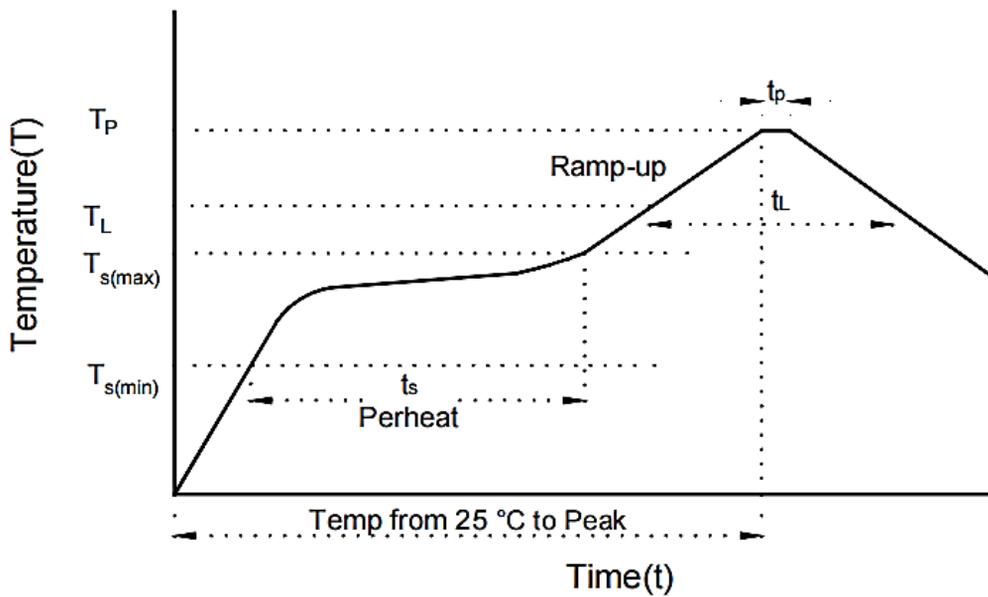


Fig 4 Peak Pulse Current vs Clamping Voltage

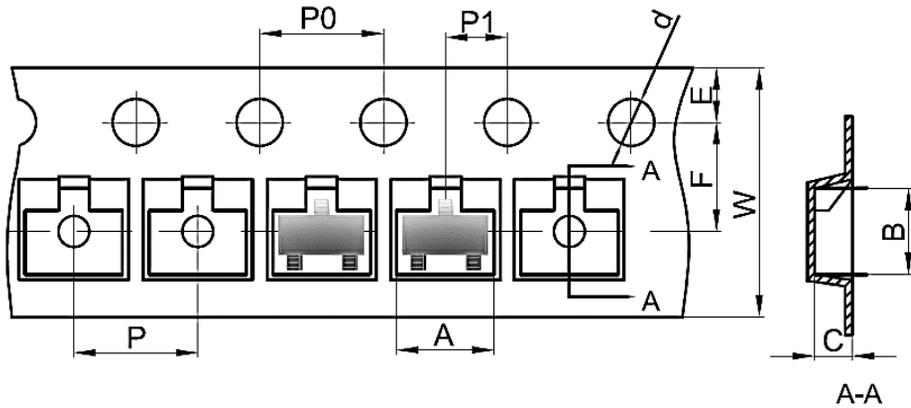


RECOMMENDED SOLDERING PARAMETERS – For Reference Only

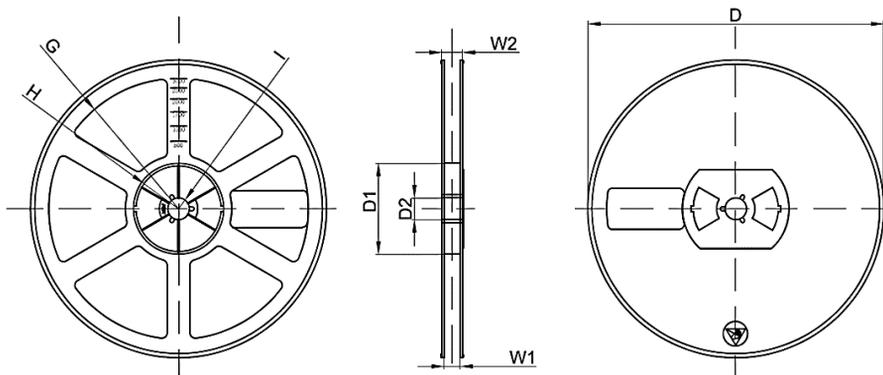
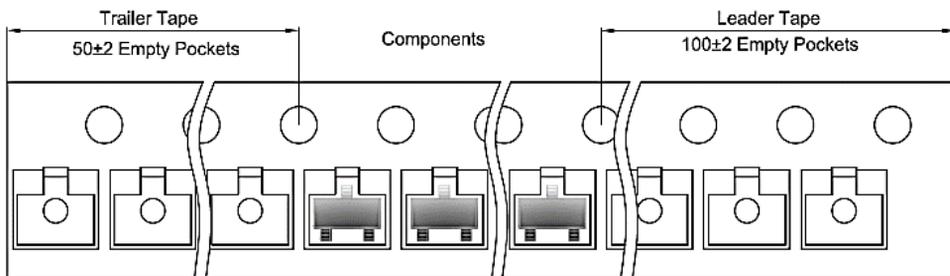


| PROFILE FEATURE | | PB-FREE ASSEMBLY |
|--|----------------------------------|-------------------|
| Average Ramp-up Rate (T_L Max to T_p) | | 3°C/second Max |
| Preheat | Temperature Min (T_s Min.) | 150°C |
| | Temperature Max (T_s Max.) | 200°C |
| | Time (t_s Min. to t_s Max.) | 60 ~ 180 seconds |
| 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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