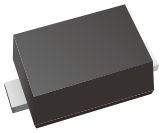
# LTE5L03C01G

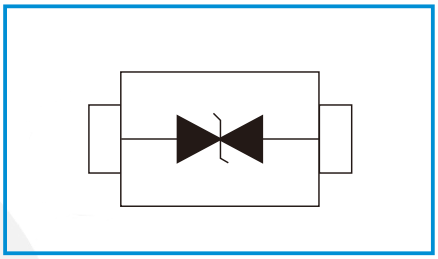
## Low Capacitance Bidirectional TVS/ESD Protection Diode

## Features

- ESD per IEC 61000-4-2 ±30 kV (Contact)
  ESD per IEC 61000-4-2 ±30 kV (Air)
  IEC61000-4-4 (EFT) 40A (5/50us)
- Peak power dissipation: 35W (8/20μs)
- Protects one directional I/O line
- Low clamping voltage
- Working voltages : 3.3V
- Low leakage current
- Low capacitance
- Marking:3CM



Functional Diagram



## Machanical Data

- SOD-523 package
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026
- Packaging: Tape and Reel
- Reel size: 7 inch
- Weight: 0.001 gram (approx.)

## Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports
- Peripherals

## Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{ESD}$ | ESD per IEC 61000-4-2 (Contact)<br>ESD per IEC 61000-4-2 (Air) | ±30<br>±30 | kV |
| $P_{PP}$ | Peak Pulse Power (8/20μs) | 400 | W |
| $T_{OPT}$ | Operating Temperature | -55~150 | °C |
| $T_{STG}$ | Storage Temperature | -55~150 | °C |

## Electrical Characteristics(TA=25°C unless otherwise specified)

| Symbol | Parameter | Test Condition | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| $V_{RWM}$ | Reverse Working Voltage | | | | 3.3 | V |
| $V_{BR}$ | Reverse Breakdown Voltage | $I_T$ = 1mA | 4.0 | | 6.0 | V |
| $I_R$ | Reverse Leakage Current | $V_{RWM}$ = 3.3V | | | 1.0 | μA |
| $V_C$ | Clamping Voltage | $I_{PP}$ = 1A, $t_p$ = 8/20μs | | | 6.5 | V |
| $V_C$ | Clamping Voltage | $I_{PP}$ = 23A, $t_p$ = 8/20μs | | 13 | 18 | V |
| $C_J$ | Junction Capacitance | $V_R$ = 0V, f = 1MHz | | 38 | 45 | pF |

## Characteristic Curves

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

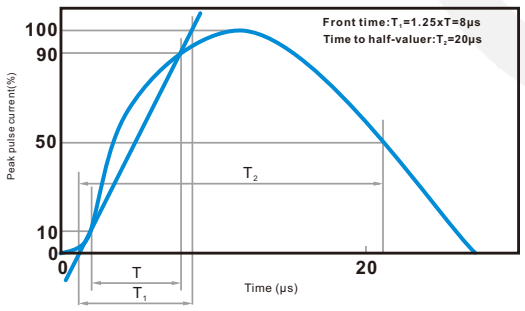



Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2

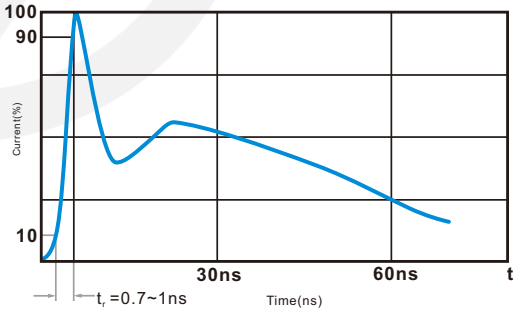
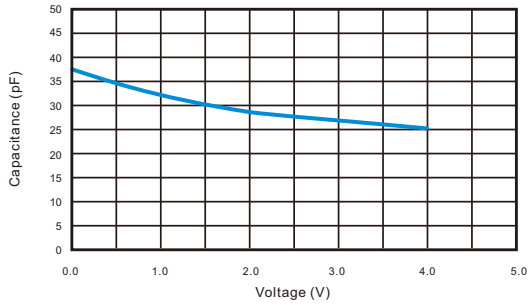
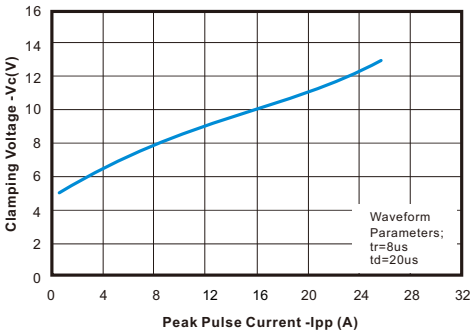


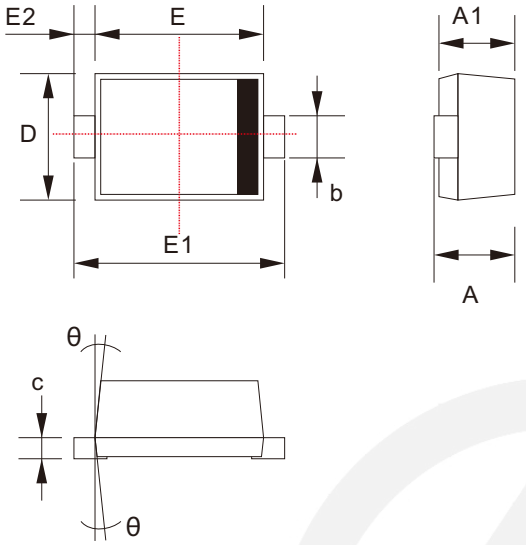

Fig 3 Voltage vs Capacitance




Clamping Voltage vs. Peak Pulse Current



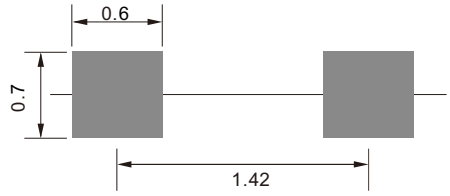
## SOD-523 PACKAGE OUTLINE




Unit : mm

| SYMBOL | DIMENSIONS | |
|---|---|---|
| | MIN. | MAX. |
| A | 0.500 | 0.770 |
| A1 | 0.500 | 0.700 |
| b | 0.250 | 0.380 |
| c | 0.070 | 0.200 |
| D | 0.700 | 0.900 |
| E | 1.100 | 1.300 |
| E1 | 1.500 | 1.700 |
| E2 | 0.200 REF | |
| θ | 7° REF | |

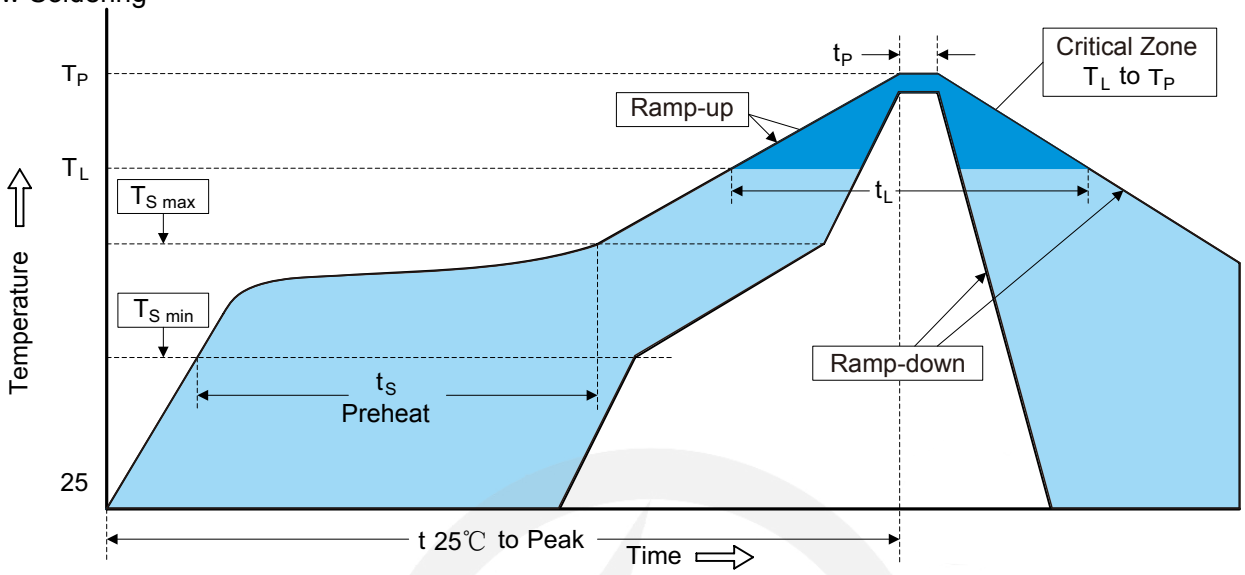
## Recommended Solder Pad Footprint




Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

## Recommended Soldering Conditions

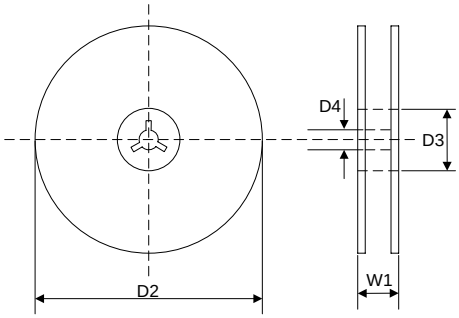
Reflow Soldering




Recommended Conditions

| Profile Feature | Pb-Free Assembly |
|---|---|
| Average ramp-up rate ($T_L$ to $T_P$) | 3℃/second max. |
| Preheat<br>-Temperature Min ($T_{S\ min}$)<br>-Temperature Max ($T_{S\ max}$)<br>-Time (min to max) ( $t_S$) | <br>150℃<br>200℃<br>60-180 seconds |
| $T_{S\ max}$ to $T_L$<br>-Ramp-up Rate | <br>3℃/second max. |
| Time maintained above:<br>-Temperature ($T_L$)<br>-Time ($t_L$) | <br>217℃<br>60-150 seconds |
| Peak Temperature ($T_P$) | 260℃ |
| Time within 5℃ of actual Peak Temperature ($t_P$) | 20-40 seconds |
| Ramp-down Rate | 6℃/second max. |
| Time 25℃ to Peak Temperature | 8 minutes max. |

7” Reel




| | |
|---|---|
| D2 | Φ178.0±2.0 |
| D3 | Φ50.0Min. |
| D4 | Φ13.0±0.5 |
| W1 | 16.0±2.0 |
| Quantity: 3000PCS | |