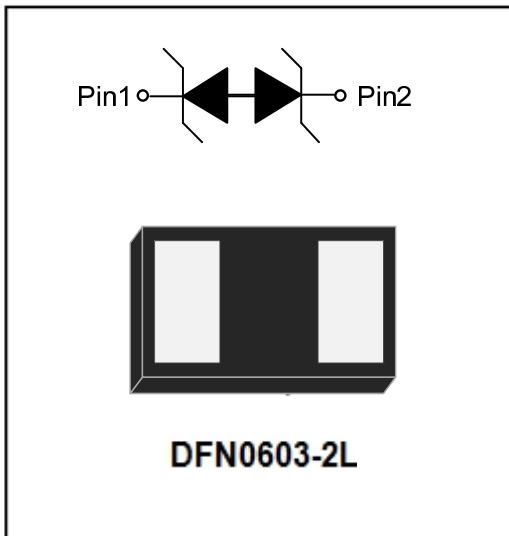


1-Line, Bi-directional, Transient Voltage Suppressor



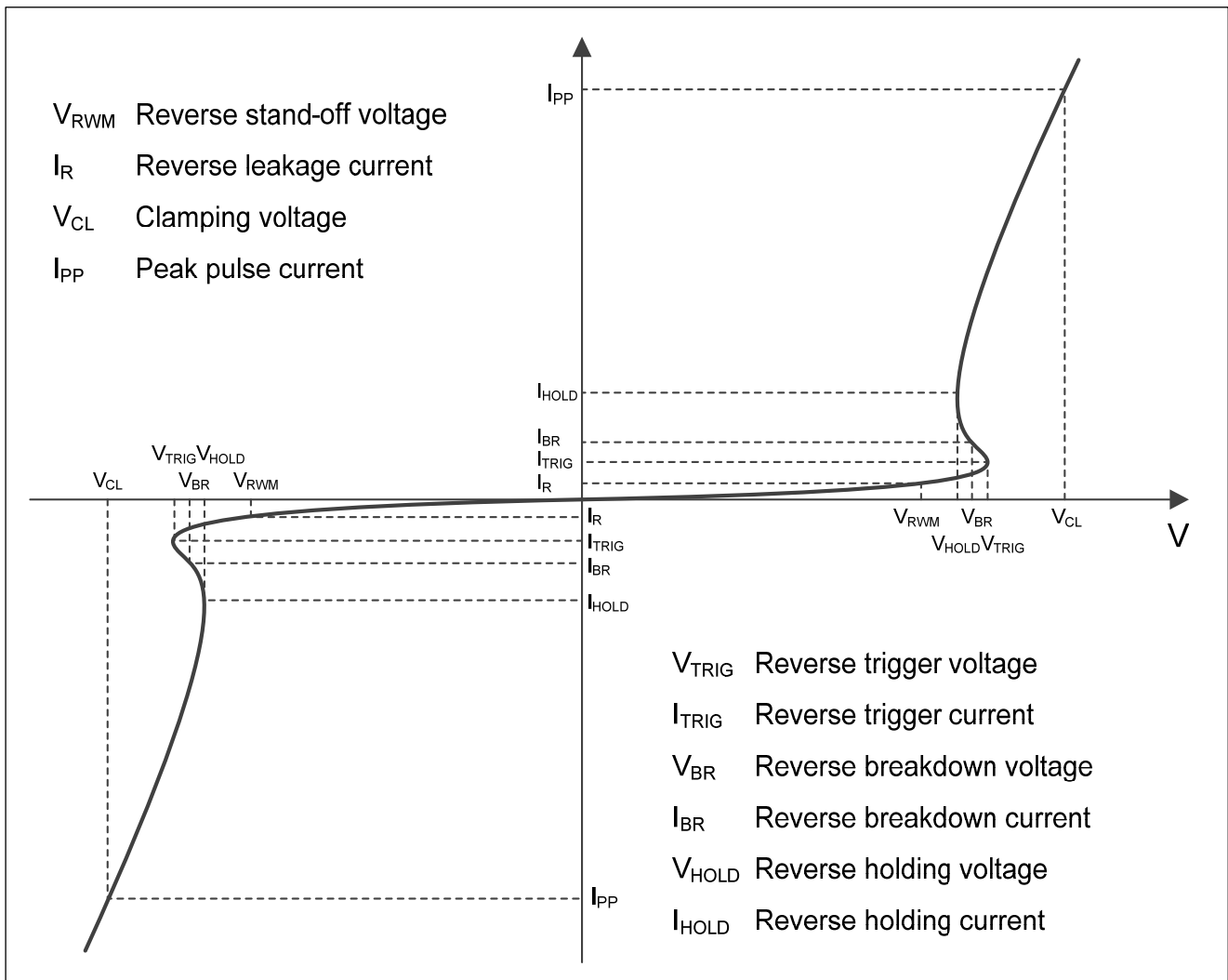
Features

- Stand-off voltage: $\pm 5.5V$ Max
- Transient protection for each line according to IEC61000-4-2(ESD): $\pm 30kV$ (contact)
IEC61000-4-4 (EFT): 40A (5/50ns)
IEC61000-4-5(surge): 6A (8/20 μs)
- Ultra-low capacitance: $C_J = 10pF$ typ
- Low leakage current
- Low clamping voltage: $V_{CL} = 11.0V$ typ. @ $I_{PP} = 16A$ (TLP)
- Solid-state silicon technology

Mechanical Data

- **Package:** DFN0603-2L
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** No marking on bi-directional types
- **Marking:** A6

■ Definitions of electrical characteristics





ESD5V5LZB

■Maximum Ratings

| PARAMETER | SYMBOL | Rating | UNIT |
|---|-----------|----------|-------------|
| Peak pulse power ($t_p = 8/20\mu s$) | P_{pk} | 72 | W |
| Peak pulse current ($t_p = 8/20\mu s$) | I_{pp} | 6 | A |
| ESD according to IEC61000-4-2 air discharge | V_{ESD} | ± 30 | KV |
| ESD according to IEC61000-4-2 contact discharge | | ± 30 | KV |
| Junction temperature | T_J | 125 | $^{\circ}C$ |
| Operating temperature | T_{OP} | -40~85 | $^{\circ}C$ |
| Storage temperature | T_{STG} | -55~150 | $^{\circ}C$ |

■Electrical Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

| PARAMETER | Symbol | UNIT | Conditions | Min | Typ | Max |
|----------------------------------|------------|----------|--------------------------------|-----|------|-----------|
| Reverse maximum working voltage | V_{RWM} | V | | | | ± 5.5 |
| Reverse leakage current | I_R | nA | $V_{RWM} = 5.5V$ | | | 100 |
| Reverse breakdown voltage | V_{BR} | V | $I_{BR} = 1mA$ | 6.1 | 7 | |
| Reverse holding voltage | V_{HOLD} | V | $I_{HOLD} = 50mA$ | 6.1 | 7 | |
| Clamping voltage ¹⁾ | V_{CL} | V | $I_{PP} = 16A, t_p = 100ns$ | | 11.0 | |
| Dynamic resistance ¹⁾ | R_{DYN} | Ω | | | 0.28 | |
| Clamping voltage ²⁾ | V_{CL} | V | $V_{ESD} = 8kV$ | | 11.0 | |
| Clamping voltage ³⁾ | V_{CL} | V | $I_{PP} = 1A, t_p = 8/20\mu s$ | | | 8 |
| | | V | $I_{PP} = 6A, t_p = 8/20\mu s$ | | | 12 |
| Junction capacitance | C_J | pF | $V_R = 0V, f = 1MHz$ | | 10 | 13 |
| | | pF | $V_R = 2.5V, f = 1MHz$ | | 8 | 11 |

(1). TLP parameter: $Z_0 = 50\Omega, t_p = 100ns, t_r = 2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

(2). Contact discharge mode, according to IEC61000-4-2.

(3). Non-repetitive current pulse, according to IEC61000-4-5.

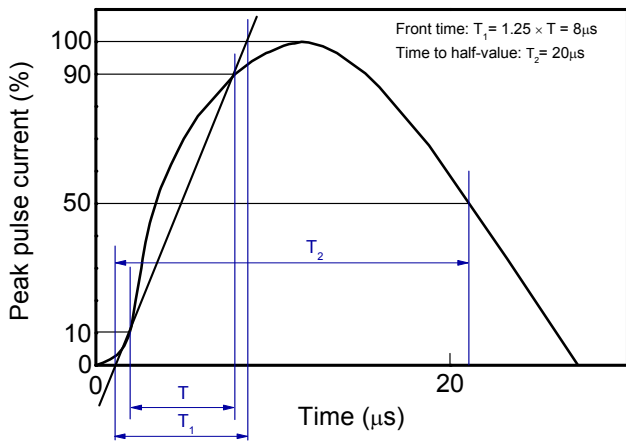
■Ordering Information (Example)

| PREFERRED P/N | UNIT WEIGHT(mg) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| ESD5V5LZB | Approximate 0.18 | 10000 | 100000 | 400000 | Tae& reel |

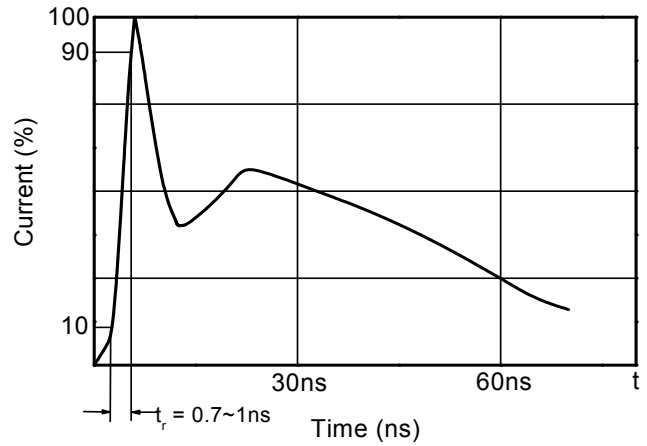


■ Characteristics (Typical)

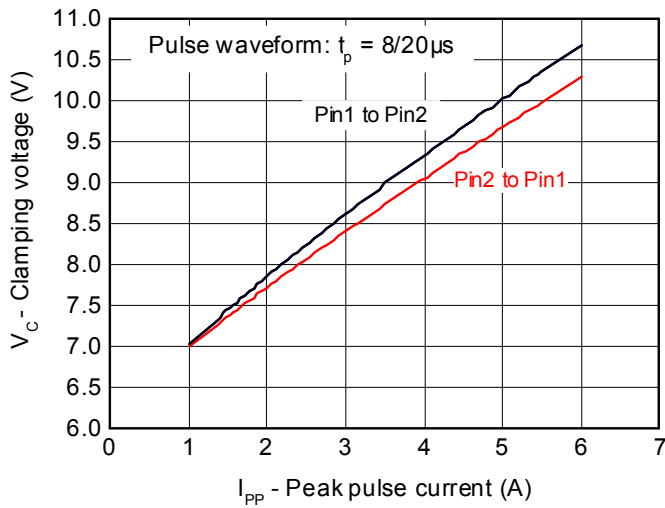
8/20 μ s waveform per IEC61000-4-5



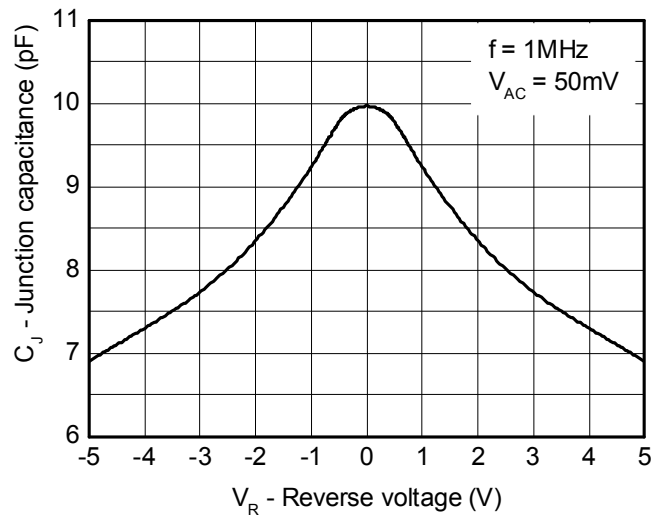
Contact discharge current waveform per IEC61000-4-2



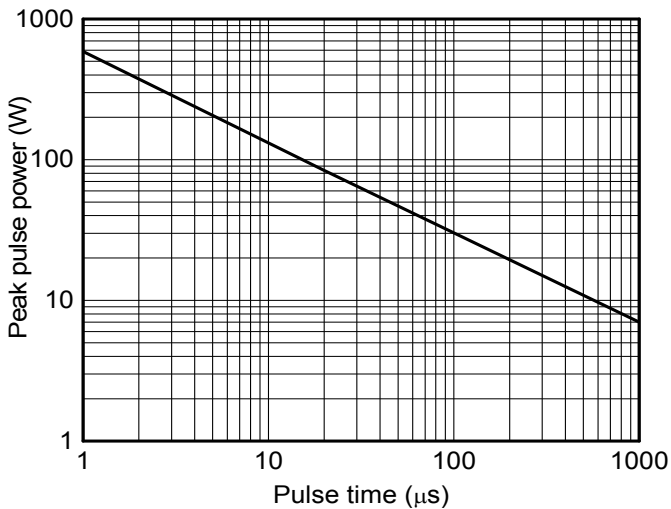
Clamping voltage vs. Peak pulse current



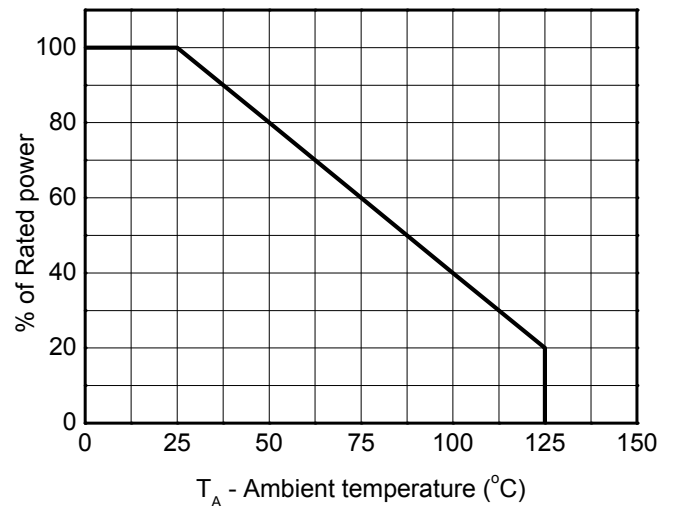
Capacitance vs. Reverse voltage



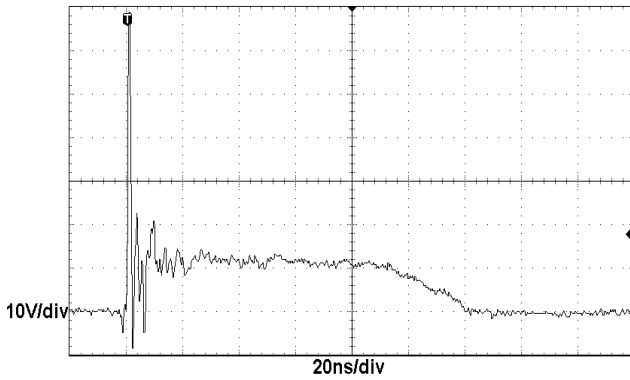
Non-repetitive peak pulse power vs. Pulse time



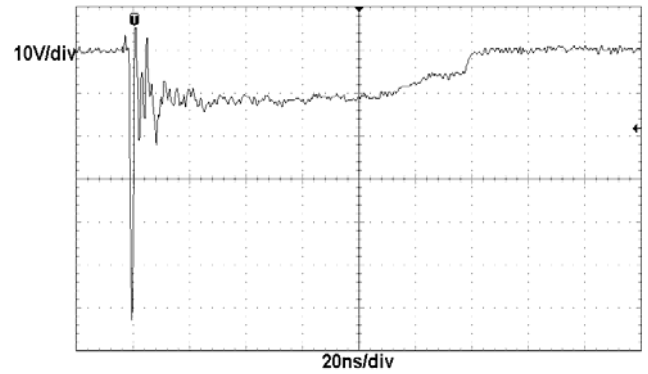
Power derating vs. Ambient temperature



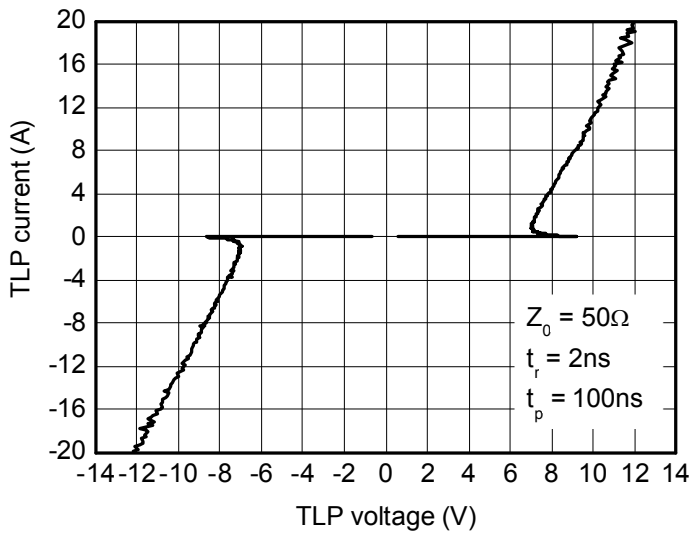
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



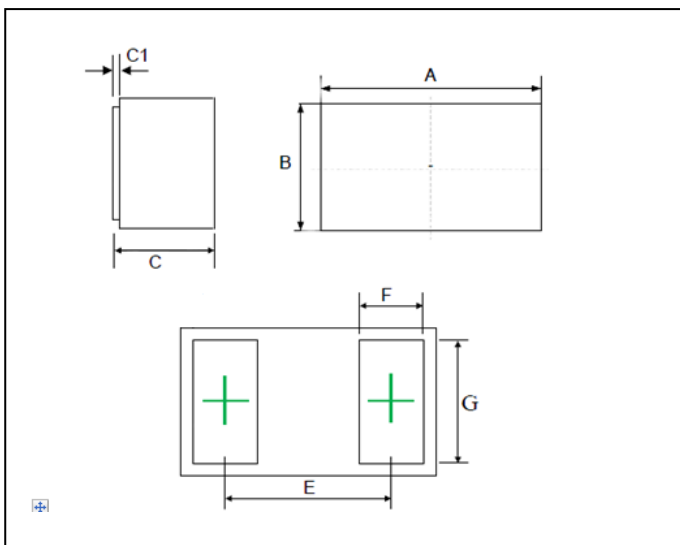
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement



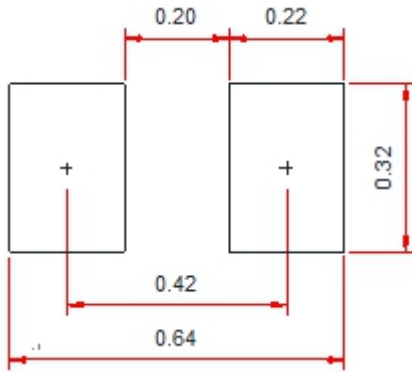
■ Outline Dimensions



| Symbol | min. (mm) | Max. (mm) |
|--------|-----------|-----------|
| A | 0.55 | 0.67 |
| B | 0.25 | 0.37 |
| C | 0.23 | 0.34 |
| C1 | | 0.05 |
| E | | 0.4 |
| F | 0.115 | 0.195 |
| G | 0.215 | 0.295 |



■ Recommend land pattern (Unit:mm)



Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met



ESD5V5LZB

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