

Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

Brightking's SES08C15L04 has been designed to provide bi-directional protection for sensitive electronics from damage or latch-up due to ESD, lightning and other voltage-induced transient events. Each device will protect four data or I/O lines. It use to meet the immunity requirements of IEC61000 Level 4 (15KV air, 8KV contact discharge).

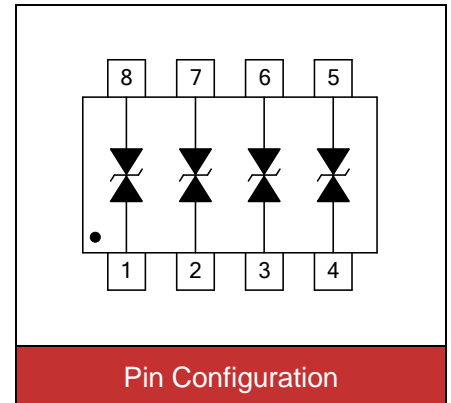


Contact : ±30kV
Air : ±30kV



Features

- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance
- SOIC-08 surface mount package
- Protects four I/O lines
- Peak power dissipation of 500W under 8/20µs waveform
- Working voltage: 15V
- Low leakage current
- Low capacitance and clamping voltage
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270°C
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020



Applications

- RS-232 and RS-422 data line protection
- Microprocessor based equipment
- Audio/Video input protection
- Notebooks, desktops, servers
- Wireless network systems
- Set Top Box (STB)
- Series and parallel ports
- Instrumentation
- Peripherals

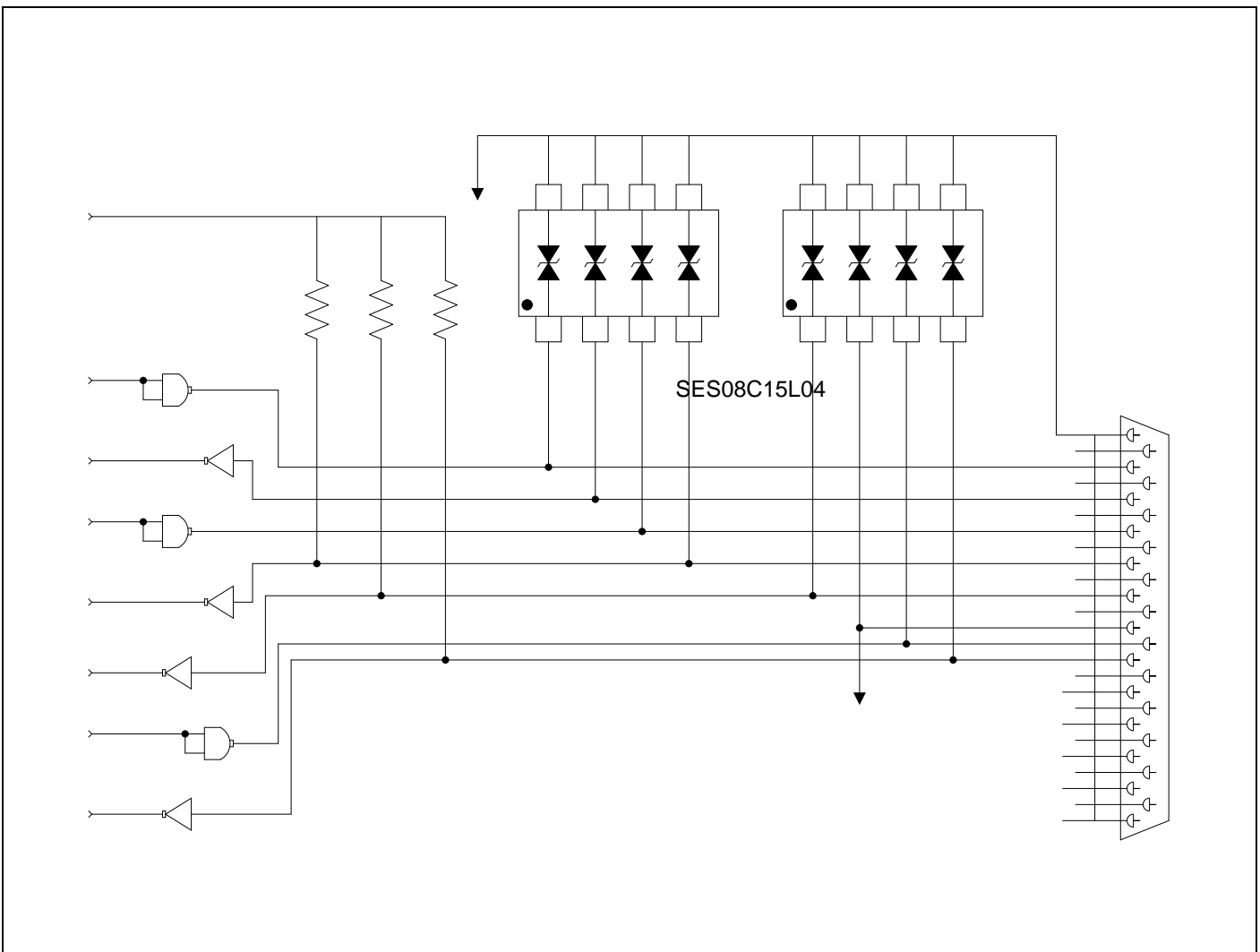
Maximum Ratings

| Rating | Symbol | Value | Unit |
|---------------------------------------|-----------------------------------|----------|------|
| Peak pulse power (tp=8/20µs waveform) | P _{PP} | 500 | W |
| ESD voltage (Contact discharge) | V _{ESD} | ±30 | kV |
| ESD voltage (Air discharge) | | ±30 | |
| Storage & operating temperature range | T _{STG} , T _J | -55~+150 | °C |

Electrical Characteristics ($T_J=25^{\circ}\text{C}$)

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--|-----------|---|------|------|------|---------------|
| Reverse stand-off voltage | V_{RWM} | | | | 15 | V |
| Reverse breakdown voltage | V_{BR} | $I_{BR}=1\text{mA}$ | 16.7 | | | V |
| Reverse leakage current | I_R | $V_R=15\text{V}$ Each I/O pin | | | 1 | μA |
| Clamping voltage ($t_p=8/20\mu\text{s}$) | V_C | $I_{PP}=1\text{A}$ | | | 24 | V |
| Clamping voltage ($t_p=8/20\mu\text{s}$) | V_C | $I_{PP}=10\text{A}$ | | | 30 | V |
| Off state junction capacitance | C_J | 0Vdc, $f=1\text{MHz}$ Between I/O pins and GND | | 80 | | pF |

Applications Information



Typical Characteristics Curves

Figure 1. Power Derating Curve

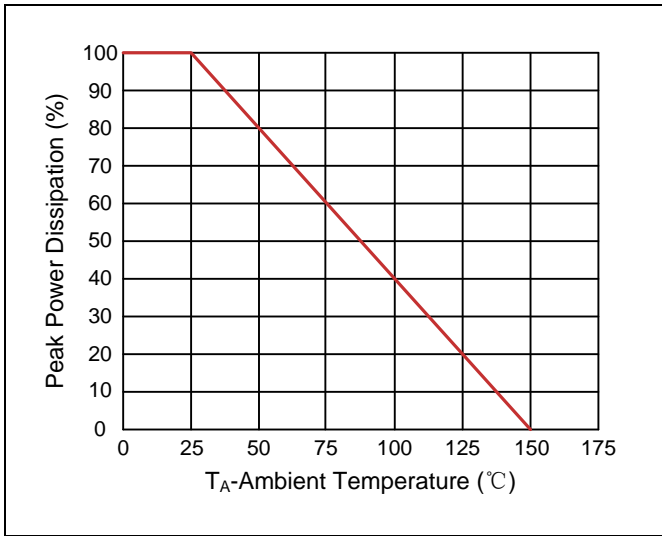


Figure 2. Pulse Waveforms

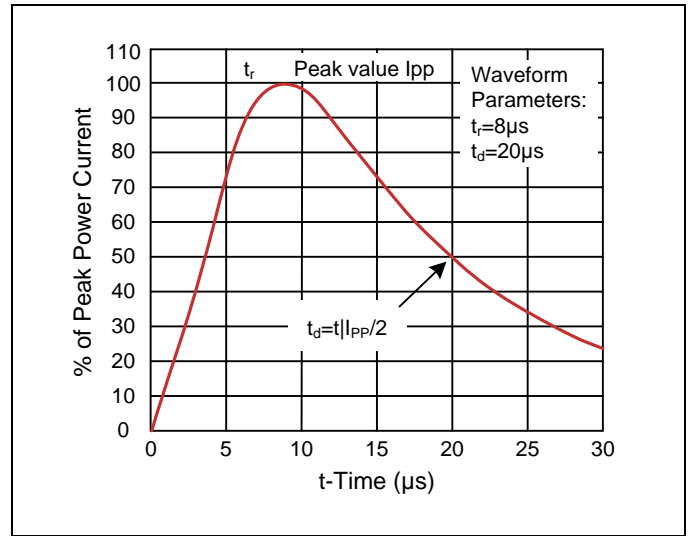
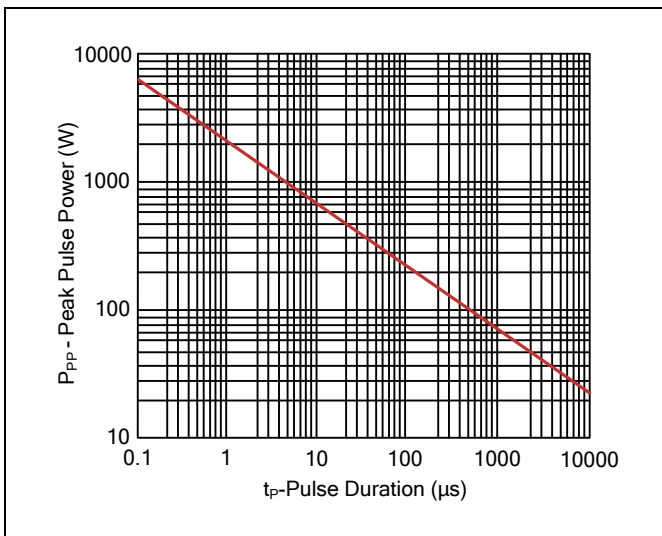
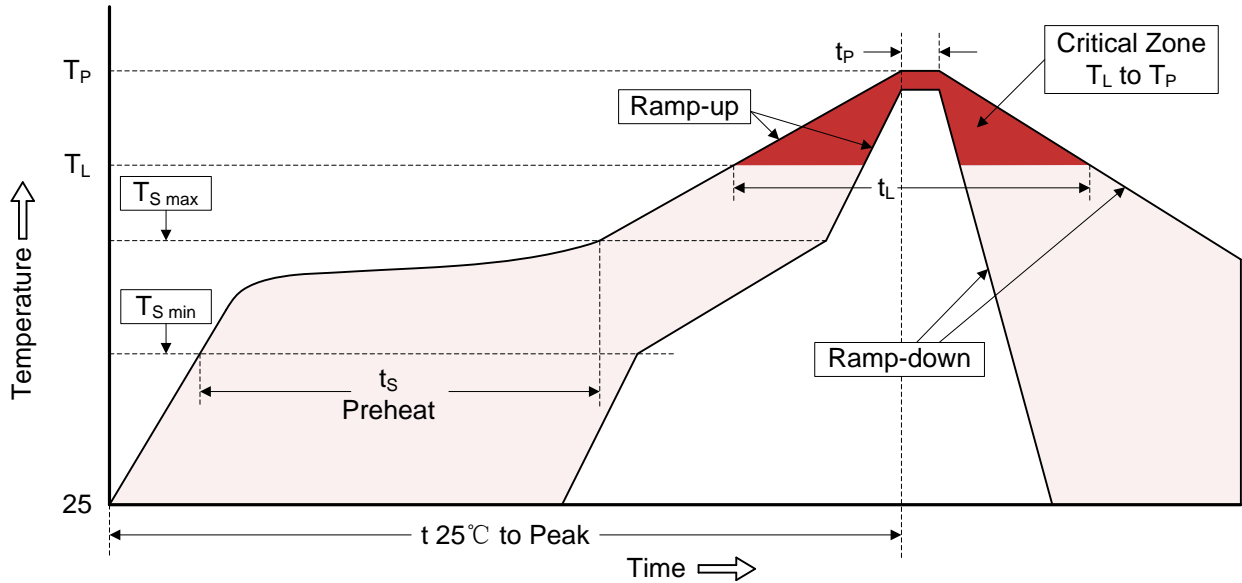


Figure 3. Non-Repetitive Peak Pulse vs. Pulse Time



Recommended Soldering Conditions

Reflow Soldering

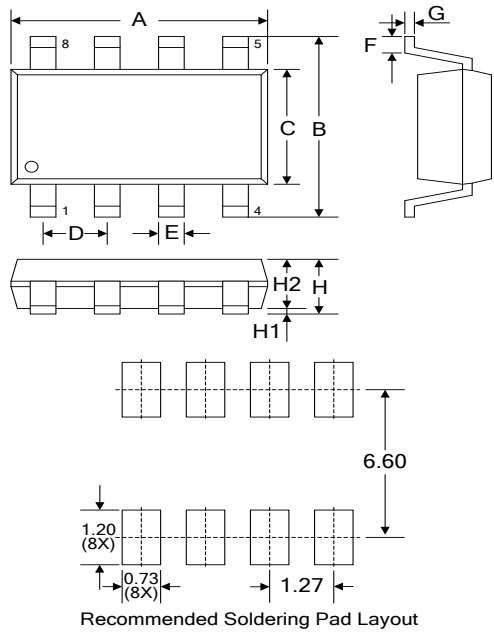


Recommended Conditions

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

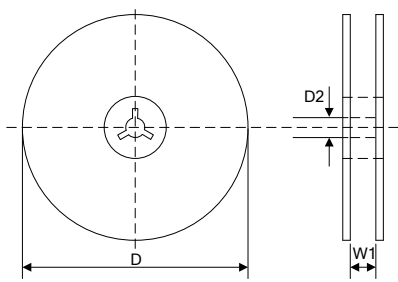
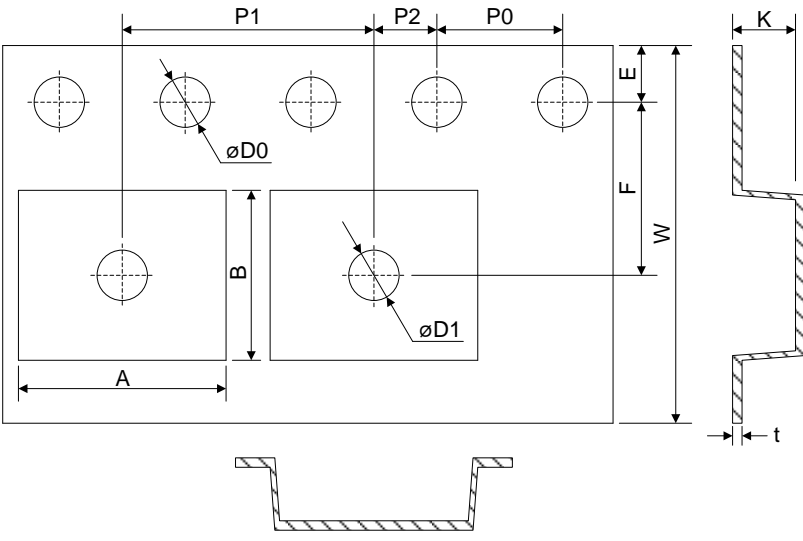
Dimensions (SOIC-08)

| Symbol | Dimension | | | |
|--------|-------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 4.80 | 5.00 | 0.189 | 0.197 |
| B | 5.80 | 6.20 | 0.228 | 0.244 |
| C | 3.80 | 4.00 | 0.150 | 0.157 |
| D | 1.27 | | 0.050 | |
| E | 0.33 | 0.51 | 0.013 | 0.020 |
| F | 0.40 | 1.27 | 0.016 | 0.050 |
| G | 0.19 | 0.25 | 0.007 | 0.010 |
| H | 1.35 | 1.75 | 0.053 | 0.069 |
| H1 | 0.10 | 0.25 | 0.004 | 0.010 |
| H2 | 1.45 | | 0.057 | |



Packaging

| Tape | Symbol | Dimension (mm) |
|------|------------|-------------------|
| | W | 12.00±0.30 |
| P0 | 4.00±0.10 | |
| P1 | 8.00±0.10 | |
| P2 | 2.00±0.10 | |
| D0 | Φ1.55±0.10 | |
| D1 | Φ1.55±0.05 | |
| E | 1.75±0.10 | |
| F | 5.50±0.10 | |
| A | 6.50±0.10 | |
| B | 5.40±0.10 | |
| K | 2.00±0.10 | |
| t | 0.30±0.05 | |
| Reel | D | Φ330.0±3.0 |
| | D2 | Φ13.0 |
| | W1 | 13.5 |
| | | Quantity: 2500PCS |



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [Brightking](#) manufacturer:

Other Similar products are found below :

[NTE4902](#) [P4SMAJ15A](#) [P4SMAJ26A](#) [SMAJ400CA-TP](#) [TGL34-47CA](#) [ESDAULC45-1BF4](#) [SM1605E3/TR13](#) [SMF20A-TP](#) [P4SMAJ12A](#)
[CPDUR24V-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [MPLAD30KP45CAE3](#) [MMBZ27VCLQ-7-F](#) [MMAD1108/TR13](#) [MPLAD30KP24A](#)
[ACPDQC5V0R-HF](#) [DFLT170A-7](#) [NTE4900](#) [NTE4926](#) [NTE4938](#) [SMF22A-TP](#) [SMF12A-TP](#) [SLVU2.8-TP](#) [SMLJ6.5CA-TP](#) [SMAJ6.5CA-](#)
[TP](#) [MMAD1108E3/TR13](#) [D5V0M1U2LP3-7](#) [SMAJ400A-TP](#) [AOZ8811DT-03](#) [AOZ8831DI-05](#) [AOZ8831DT-03](#) [SMAJ188CA](#) [3SMC33CA](#)
[BK](#) [CPDQC3V3C-HF](#) [CPDQC12VE-HF](#) [MPLAD30KP170CA](#) [82357120100](#) [5.0SMLJ15CA-TP](#) [5KP18A-TP](#) [P6KE8.2A-TP](#)
[MPLAD30KP43CAE3](#) [SMAJ43A-TP](#) [D5V0F6U8LP33-7](#) [TVS5501V10MUT5G](#) [5.0SMLJ24CA-TP](#) [SMAJ110CA-TP](#) [MPLAD15KP75CAE3](#)
[MMAD1103e3/TR13](#) [DFLT40AQ-7](#)