

Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

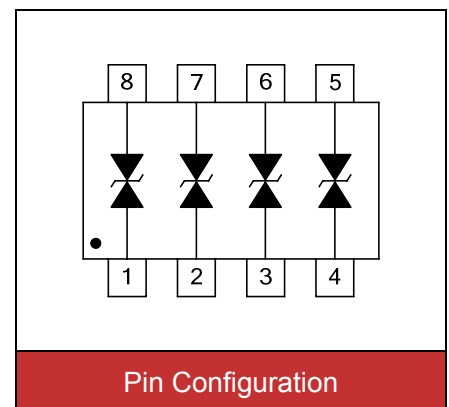
Brightking's SES08C15L04 has been designed to provide bi-directional protection for sensitive electronics from damage or latch-up due to ESD, lightning and other voltage-induced transient events. Each device will protect four data or I/O lines. It use to meet the immunity requirements of IEC61000 Level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



Contact : ±8kV
Air : ±15kV

Features

- IEC61000-4-2 ESD 15KV Air, 8KV 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
- Marking: B SM15C



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

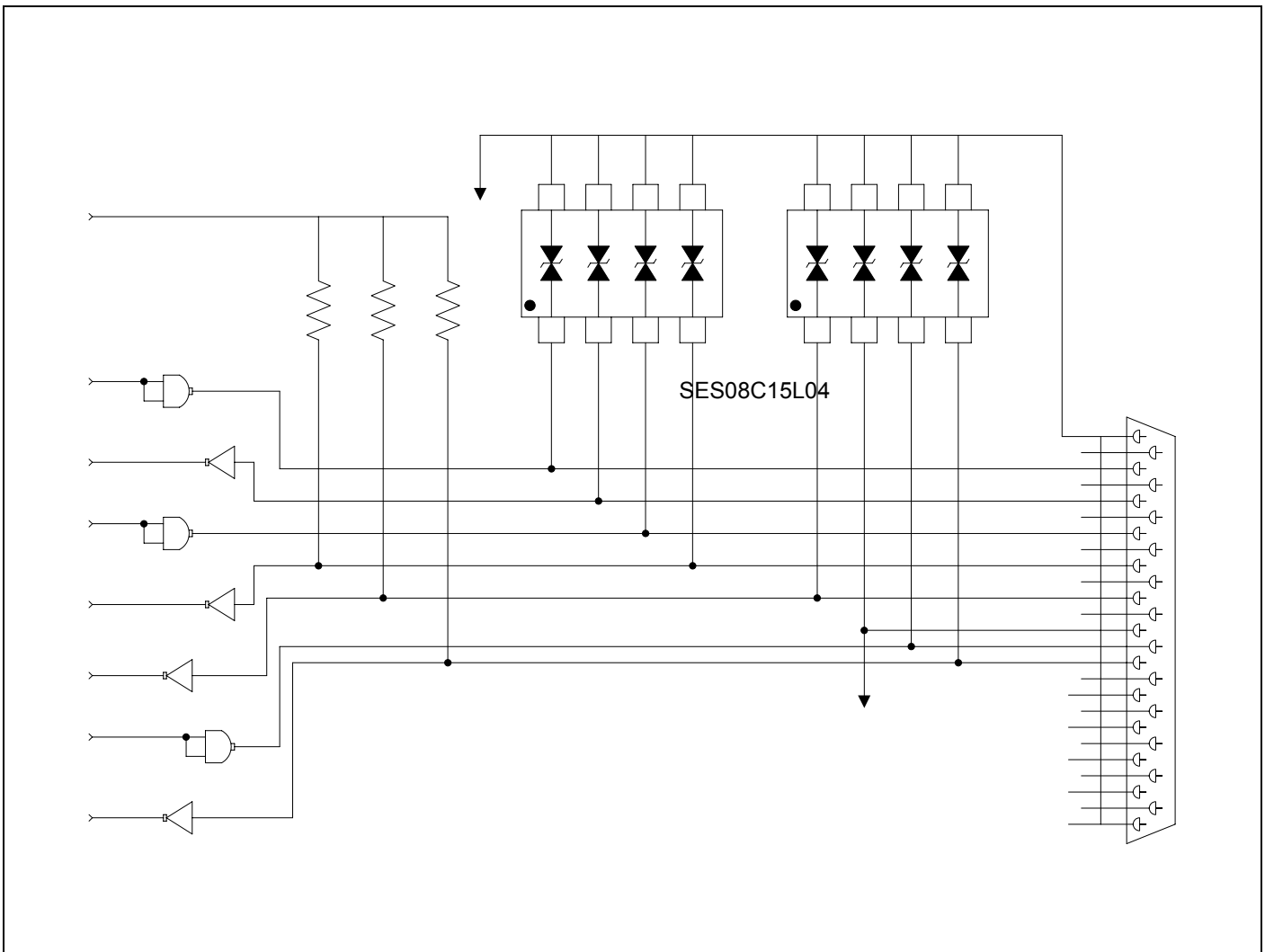
Maximum Ratings

Rating	Symbol	Value	Unit
Peak pulse power (tp=8/20μs waveform)	P _{PP}	500	W
ESD voltage (Contact discharge)	V _{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
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=1MHz Between I/O pins and GND		80		pF

Applications Information



Typical Characteristics Curves

Figure 1. Power Derating Curve

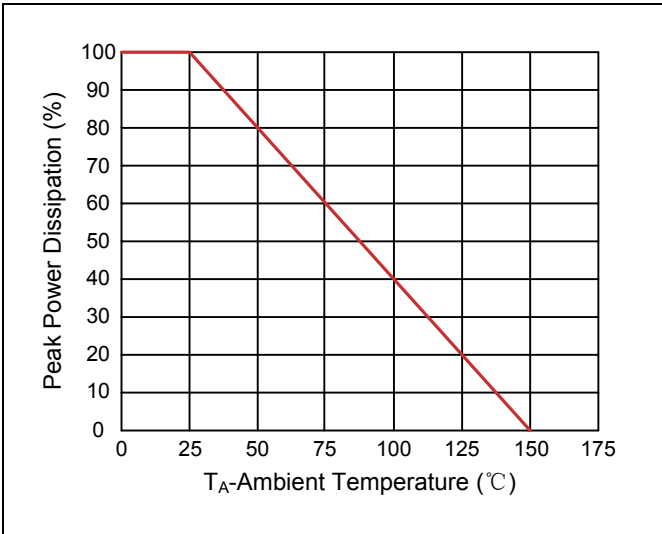


Figure 2. Pulse Waveforms

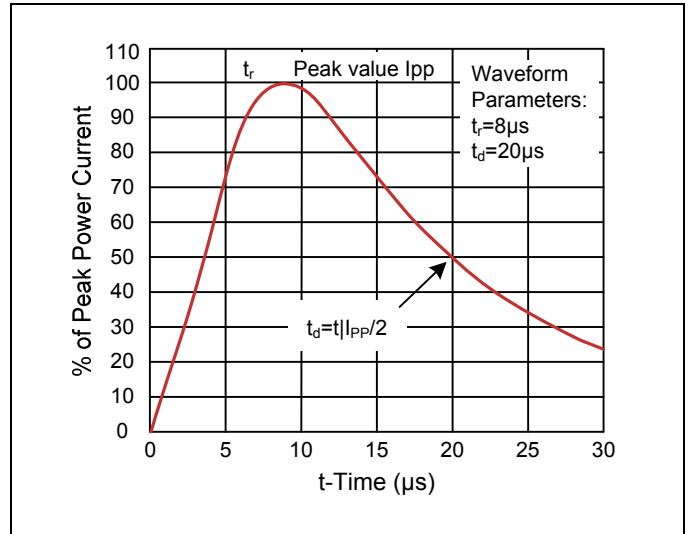
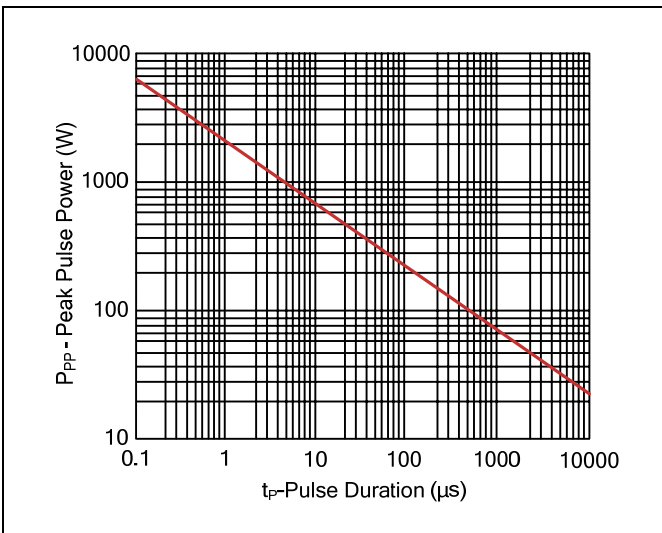
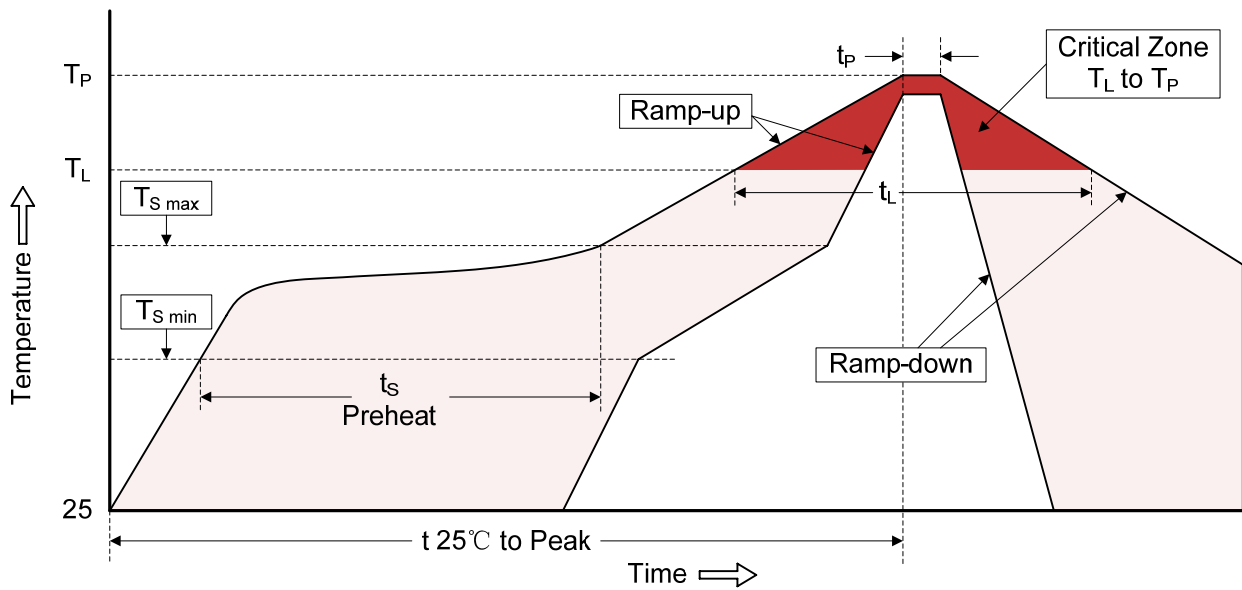


Figure 3. Non-Repetitive Peak Pulse vs. Pulse Time



Recommended Soldering Conditions

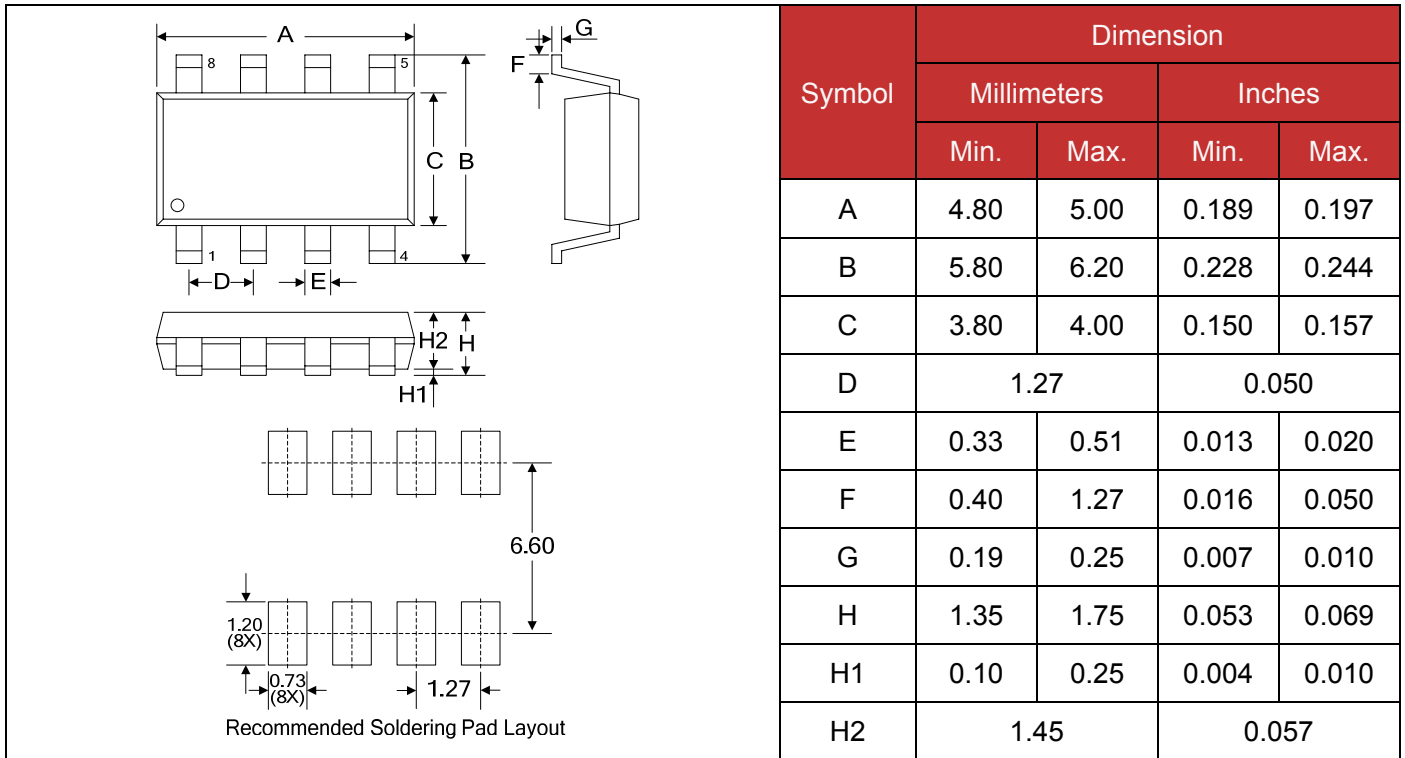
Reflow Soldering



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)



Packaging

