Electrostatic Discharged Protection Devices (ESD) Data Sheet

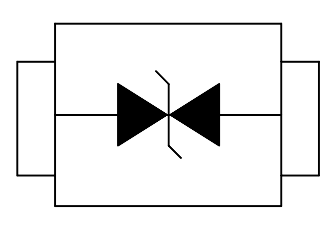
Description

Brightking's XESD32D24C is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications.
It is designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge(ESD), electrical fast transients(EFT), and cable discharge events(CDE).

Contact : ±8kV
Air : ±15kV

Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOD-323 surface mount package
- Protects bi-directional line
- Peak power dissipation of 320W under 8/20μs waveform
- Working voltage: 24V
- Low leakage current
- Low clamping voltage
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270℃
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking: M



Pin Configuration

Applications

- Cellular handsets & Accessories
- Cordless phones
- Personal digital assistants (PDAs)
- Notebooks & Handhelds
- Portable instrumentation
- Digital cameras
- Peripherals
- MP3 players

Maximum Ratings

Rating	Symbol	Value	Unit
Peak pulse power (tp=8/20μs waveform)	P_{PP}	320	W
ESD voltage (Contact discharge)	V_{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

Revision：

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				24	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	26.7			V
Reverse leakage current	I_R	V_R=24V			1	μA
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=1A			43	V
Off state junction capacitance	C_J	0Vdc,f=1MHz		37		pF

Typical Characteristics Curves

Figure 1. Power Derating Curve

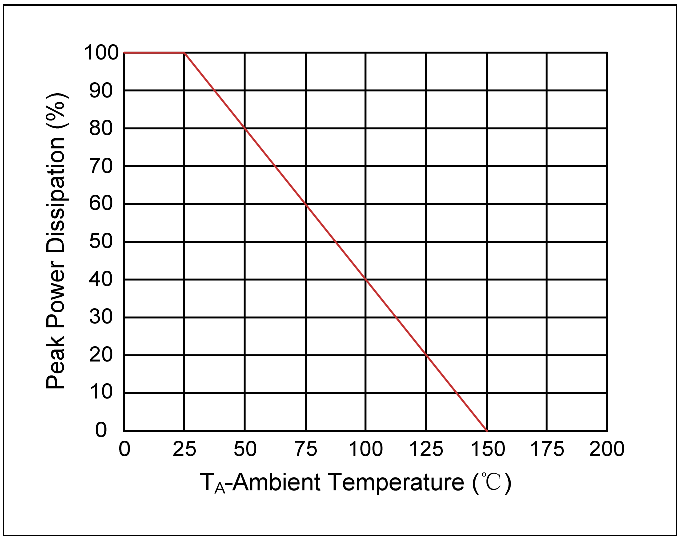


Figure 2. Pulse Waveform

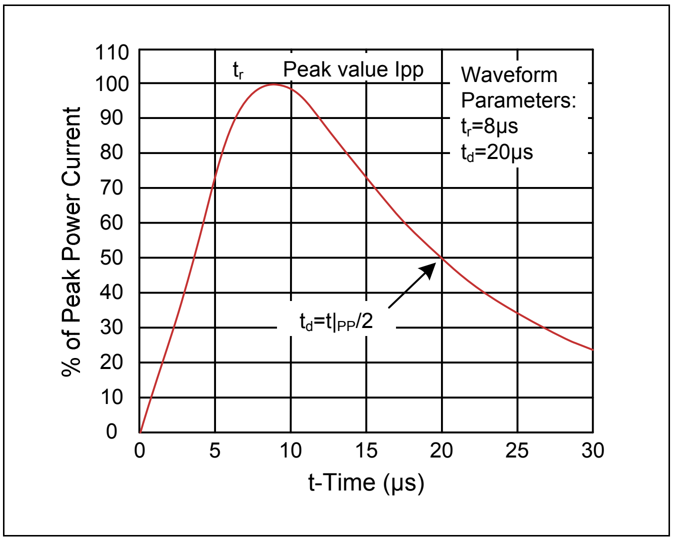
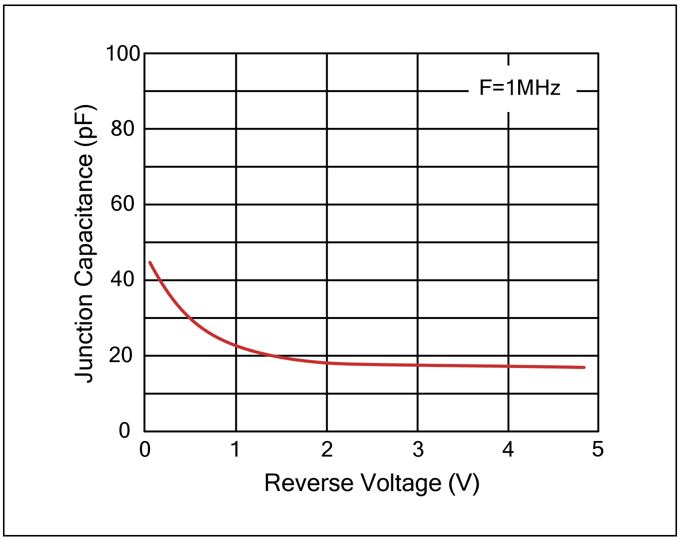
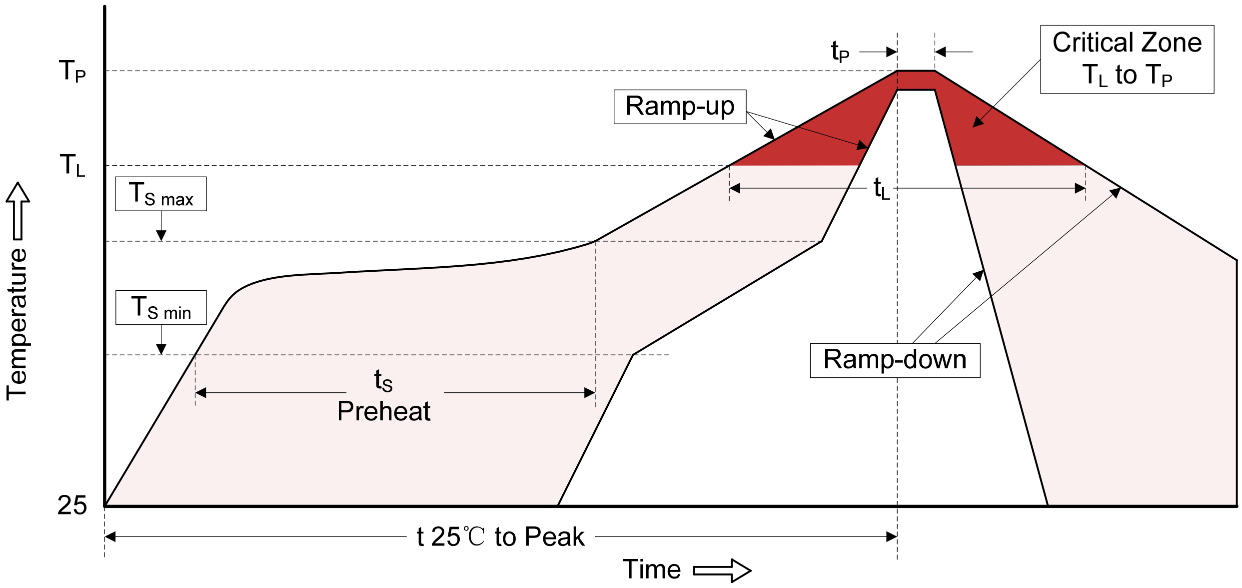


Figure 3. Capacitance vs. Reverse Voltage

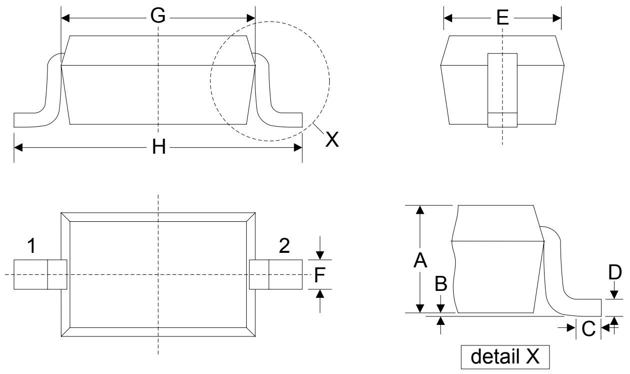


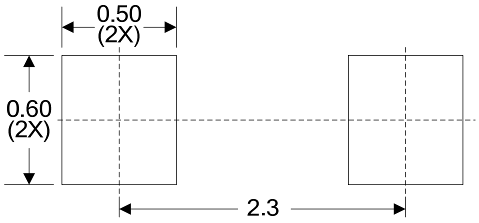
Reflow Soldering



Recommended Condition

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (ts)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 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.



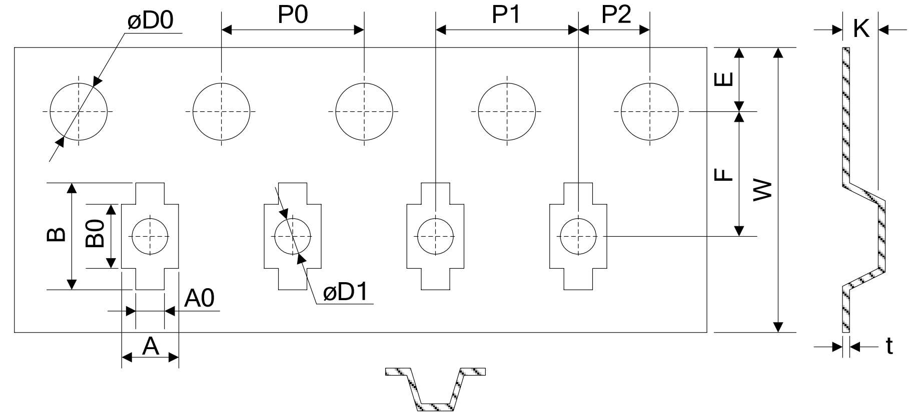


Recommended Soldering Pad Layout

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
B	-	0.10	-	0.004
C	0.20	-	0.008	-
D	0.11	0.20	0.004	0.008
E	1.15	1.35	0.045	0.053
F	-	0.35	-	0.014
G	1.60	1.80	0.063	0.071
H	2.40	2.60	0.094	0.102

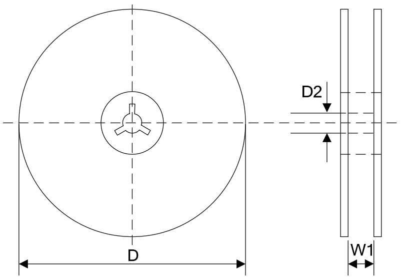
Packaging

Tape



Symbol	Dimension (mm)
W	8.00±0.30
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
D0	Φ1.55±0.10
D1	Φ1.00±0.05
E	1.75±0.10
F	3.50±0.10
A	1.48±0.10
A0	0.80±0.10
B	3.00±0.10
B0	1.80±0.10
K	1.05±0.10
t	0.25±0.05

Reel



Symbol	Dimension (mm)
D	Φ178.0±2.0
D2	Φ13.0
W1	9.5

Quantity: 3000PCS

Revision：