

Description

The ASHxxCB Series is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.



Mechanical Characteristics

- ◆ SOD-323
- ◆ ROHS/ Compliant
- ◆ Halogen free
- ◆ Molding compound flammability rating: UL 94V-0
- ◆ Marking: Part number
- ◆ Packing: Tape and Reel per EIA 481

Features

- ◆ IEC 61000-4-2 (ESD)
 - ±30kV Contact Discharge
 - ±30kV Air Discharge
- ◆ 350W peak pulse power (tp=8/20us)
- ◆ IEC 61000-4-4 EFT Protection
 - 40A (5/50ns)
- ◆ Halogen free and RoHS compliant
- ◆ Protects one directional I/O line
- ◆ Transient protection for high-speed data lines
- ◆ Low leakage current
- ◆ AEC-Q101 qualified

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

Dimensions and Pin Configuration



Ordering Information

Part Number	Package	Material	Packing	Reel Size
ASHxxCB	SOD-323	Halogen free	3000/Tape & Reel	7 inch

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

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25°C	P _{pk}	-	350	W
ESD (IEC61000-4-2 air discharge) @25°C	V _{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V _{ESD}	-	±30	kV
Operating temperature	T _{OP}	-55	125	°C
Storage temperature	T _{STG}	-55	150	°C
Lead temperature	T _L	-	260	°C

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

PART NUMBER	DEVICE MARKING	VRWM	V_B	I_T (mA)	$V_C@1A$	V_C		I_R (μA) (max.)	C_T (pF) (max.)
		(V) (max.)	(V) (min.)		(V) (max.)	(V) (max.) (@A)			
ASH03CB	2A	3.3	3.5	1	7.5	16.0	25	1	150
ASH05CB	2B	5.0	6.0	1	9.8	18.0	24	1	120
ASH08CB	2C	8.0	8.5	1	13.4	24.0	18	1	110
ASH12CB	2D	12.0	13.3	1	19.0	32.0	13	1	70
ASH15CB	2J	15.0	16.5	1	24.0	38.0	10	1	40
ASH18CB	2K	18.0	20.0	1	29.0	45.0	8	1	35
ASH24CB	2H	24.0	26.7	1	43.0	52.0	7	1	30
ASH36CB	2N	36.0	38.0	1	60.0	75.0	3	1	25



Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

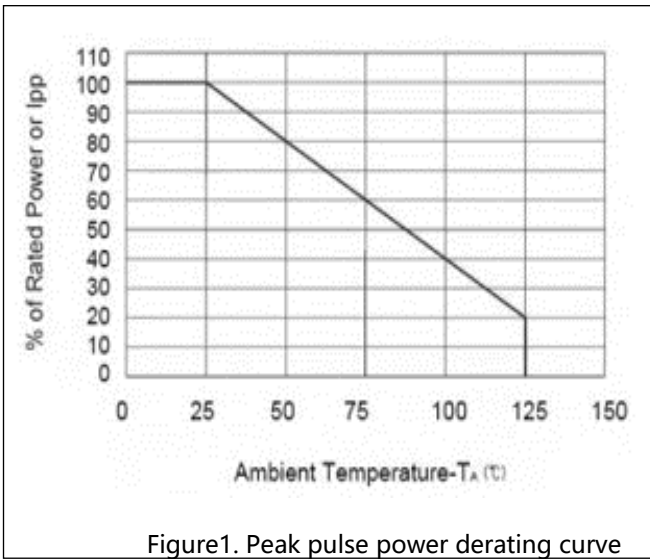


Figure1. Peak pulse power derating curve

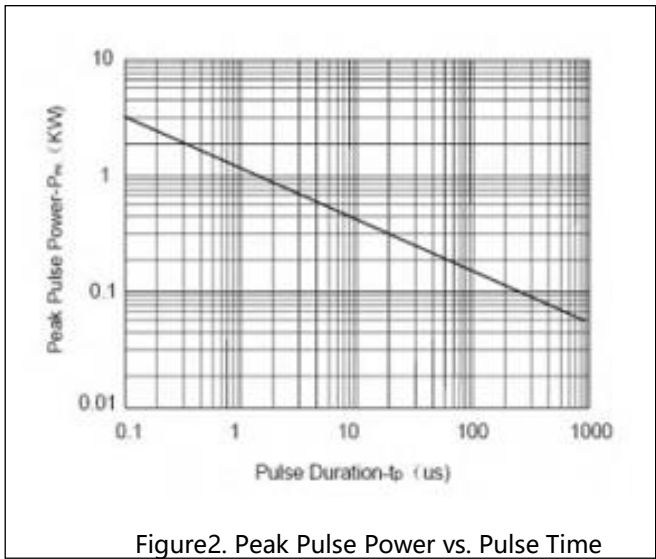


Figure2. Peak Pulse Power vs. Pulse Time

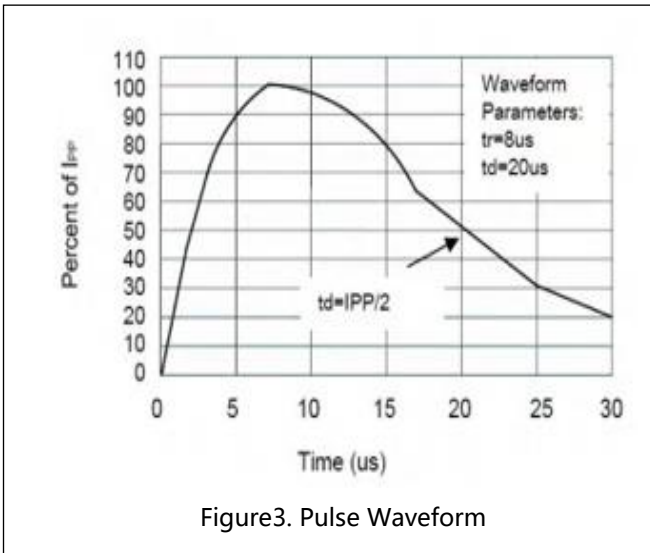


Figure3. Pulse Waveform

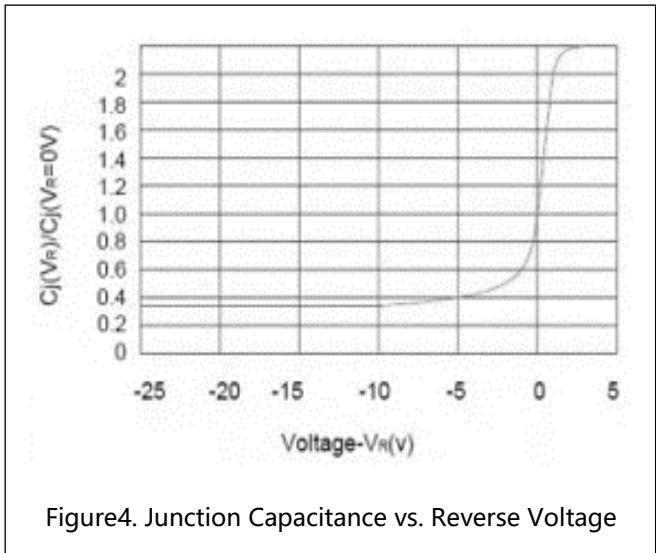
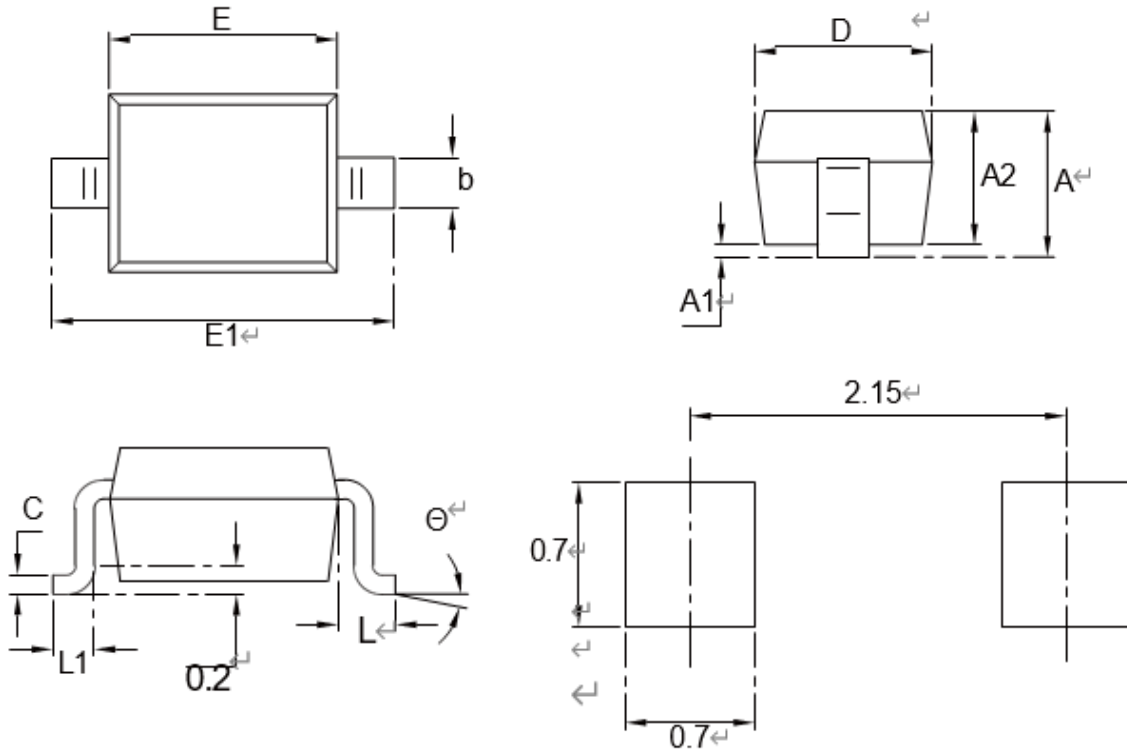


Figure4. Junction Capacitance vs. Reverse Voltage

Package Outline Drawing



Units in millimeters

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.036
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.500	2.700	0.100	0.108
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
Θ	0°	8°	0°	8°

NOTE:

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



Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	13-Aug-2021