Description

The CSHS24W2U3 is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines.. It is assembled into a 3-pin DFN2020-3 lead-free package. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multi media card

Features

- 6000 Watts peak pulse power (tp=8/20μs)
- Low leakage current
- Snap back clamping voltage
- Solid-state silicon-avalanche technology
- RoHS compliant

Mechanical Data

- Power lines
- Personal digital assistants (PDA's)
- Microprocessors based equipment
- Notebooks, desktops, and servers
- Cell phone handsets and accessories
- Portable electronics
- Peripherals

Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
CSHS24W2U3	DFN2*2- 3L	P24 003	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

Pin Configuration and Functions

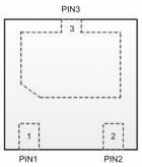
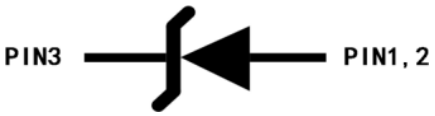
Outline	Circuit Diagram
	

Table-2 Pin configuration

Absolute Maximum Rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	6000	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		Refer to Table-4	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±30	kV
Junction temperature	T_J	-	125	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Table-3 Absolute Maximum rating

Eletrical Characteristics

At Ta = 25℃ unless otherwise noted

Parameters	Symbol	conditions	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				24	V
Reverse Breakdown Voltage	V_{BR}	I_T= 1mA	26	27	30	V
Reverse Leakage Current	I_R	V_{RWM}=24V			1	uA
Peak Pulse Current	I_{PP}	TP=8/20us@25℃			180	A
Clamping Voltage	V_{CL}	I_{PP}=70A; TP=8/20us		30	32	V
		I_{PP}=100A; TP=8/20us		30	33	
		I_{PP}=180A; TP=8/20us		31	35	
Junction capacitance	CJ	V_{RWM}=0V, f=1MHz		750		pF

Table-4 Electrical Characteristics

Ratings and Characteristic Curves (TA =25℃unless otherwise noted)

Figure 1. ESD clamping

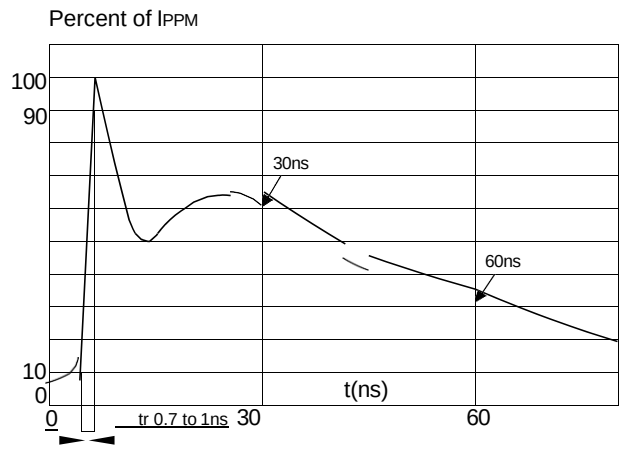


Figure 2 Peak pulse power derating curve

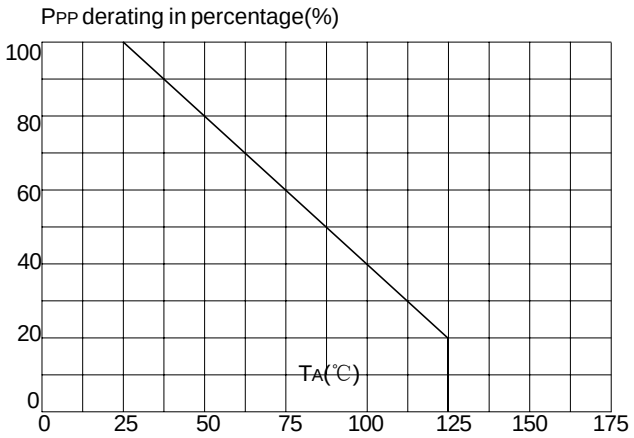


Figure 3 8/20us Pulse Waveform

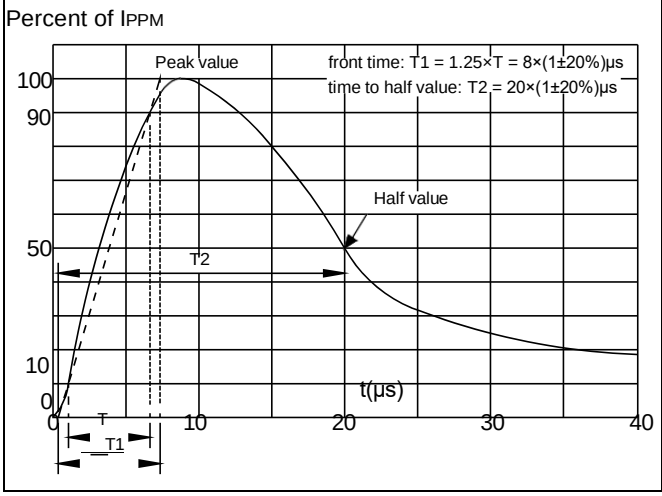
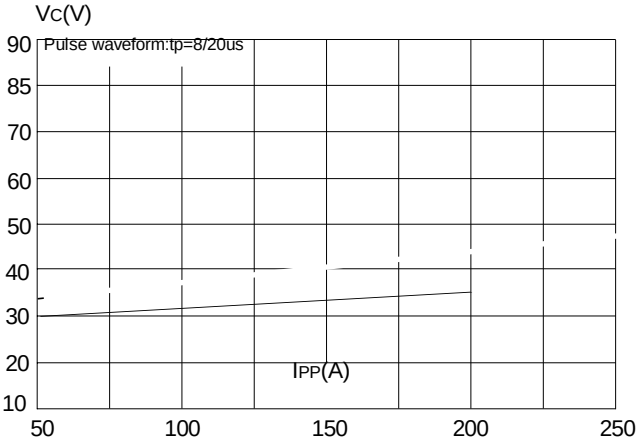
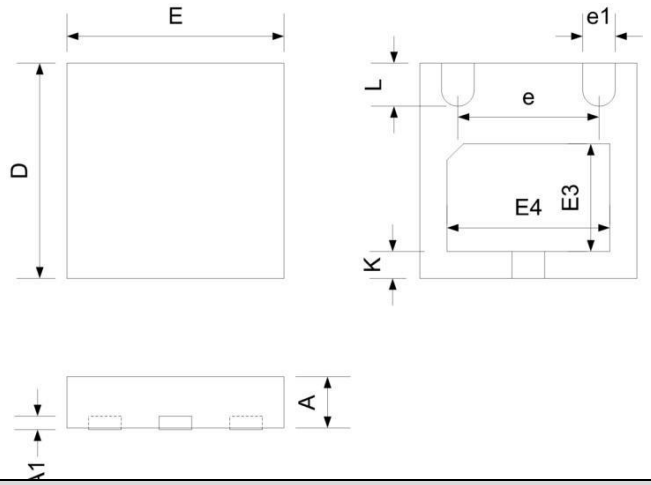


Figure 4 Clamping voltage vs.peak pulse current



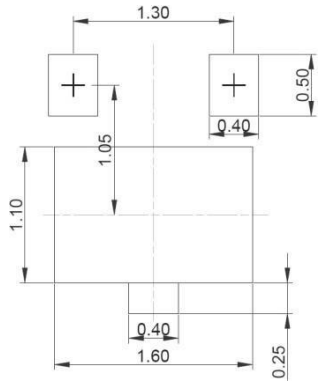
Dimension



Symbol	Dimensions in Millimeters		
	Min.	Max.	
D	1.900	2.000	2.100
E	1.900	2.000	2.100
e	1.200	1.300	1.400
e1	0.200	0.300	0.400
E3	0.850	1.000	1.150
E4	1,350	1.500	1.650
K	0.150	0.250	0.350
L	0.300	0,400	0.500
A	0.425	0.475	0.525

Table-5 product dimensions

Recommended Land Pattern



Note:

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

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	10-Sep-2023