

# DATA SHEET

**ELECTROSTATIC DISCHARGE  
PROTECTION DEVICES**

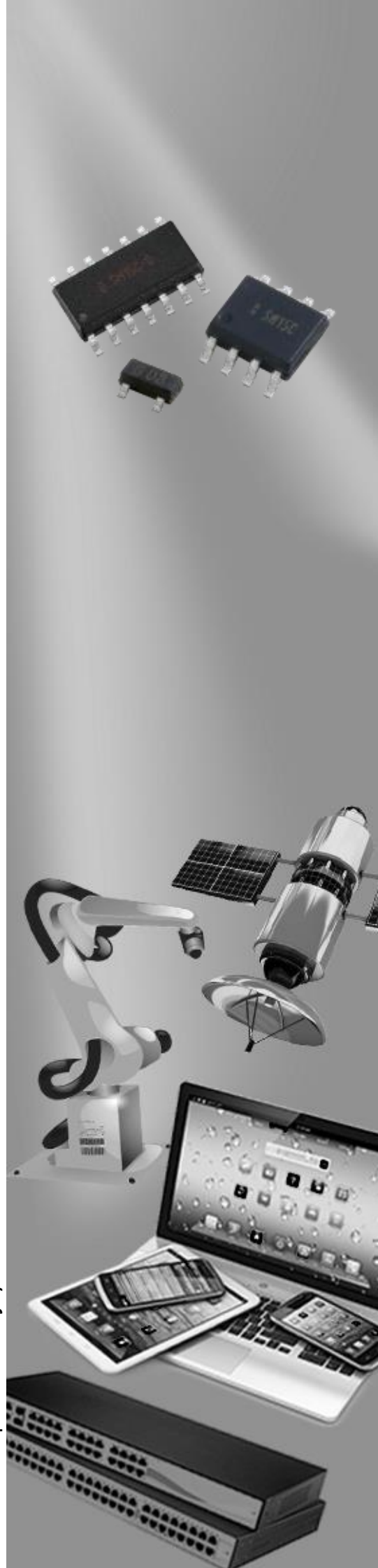
**INDUSTRIAL / CONSUMER**

SHD8C4.5L01

RoHS compliant & Halogen free



Product specification—July 01, 2023 V.2



## Electrostatic Discharged Protection Devices (ESD) Data Sheet

### Description

The SHD8C4.5L01 of Transient Voltage Suppressors is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computer, and PDAs.

It offer superior electrical characteristics such as lower clamping voltage and no device degradation when compared to MLVs.

It is designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD), lightning, electrical fast transients (EFT), and cable discharge events (CDE).

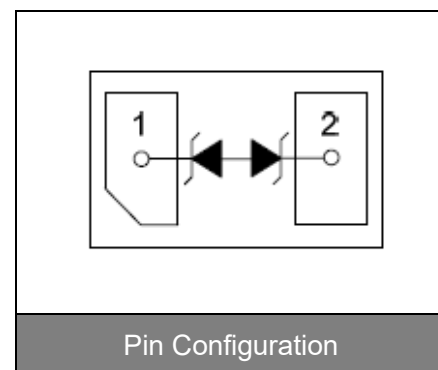


Contact :  $\pm 30\text{kV}$   
Air :  $\pm 30\text{kV}$



### Features

- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance
- SOD-882 surface mount package
- Working voltage: 4.5V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- 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: E3



### Applications

- Cellular Handsets & Accessories
- Notebooks & Handhelds
- Digital Cameras
- Personal Digital Assistants (PDAs)
- Portable Instrumentation
- MP3 Players

### Maximum Ratings

Rating	Symbol	Value	Unit
ESD voltage (Contact discharge)	$V_{\text{ESD}}$	$\pm 30$	kV
ESD voltage (Air discharge)		$\pm 30$	
Storage & operating temperature range	$T_{\text{STG}}, T_{\text{J}}$	-55~+150	°C

**Electrical Characteristics (T<sub>J</sub>=25°C)**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V <sub>RWM</sub>				4.5	V
Reverse breakdown voltage	V <sub>BR</sub>	I <sub>BR</sub> =1mA	4.6			V
Reverse leakage current	I <sub>R</sub>	V <sub>R</sub> =4.5V			1	μA
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =40A		20		V
Peak pulse current (tp=8/20μs)	I <sub>PP</sub>				40	A
Off state junction capacitance	C <sub>J</sub>	0Vdc,f=1MHz		80		pF

**Typical Characteristics Curves**

Figure 1. Pulse Waveforms

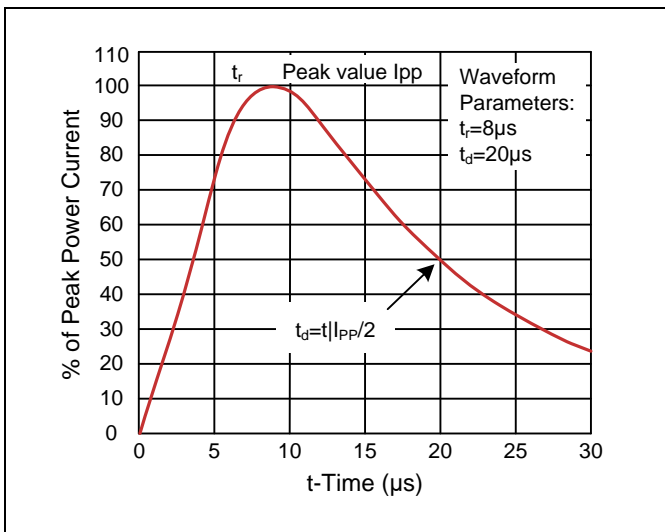


Figure 2. Clamping Voltage vs. Peak Pulse Current

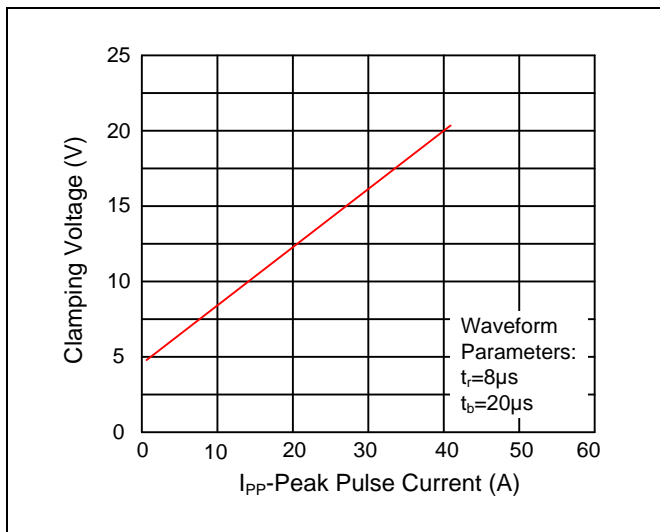


Figure 3. Capacitance vs. Reverse Voltage

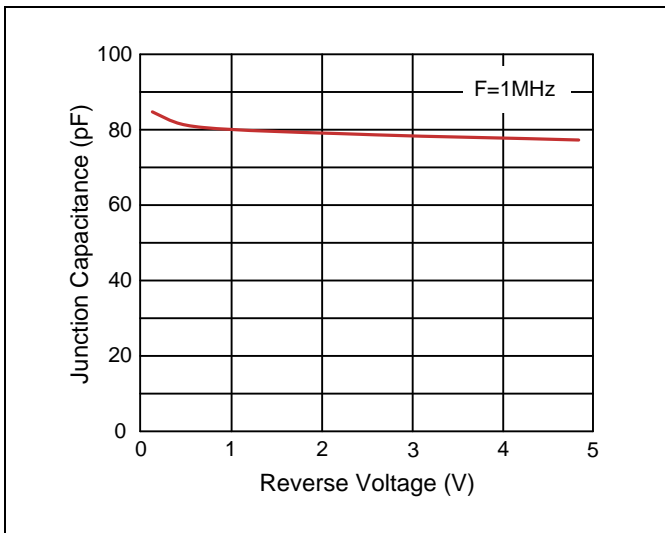
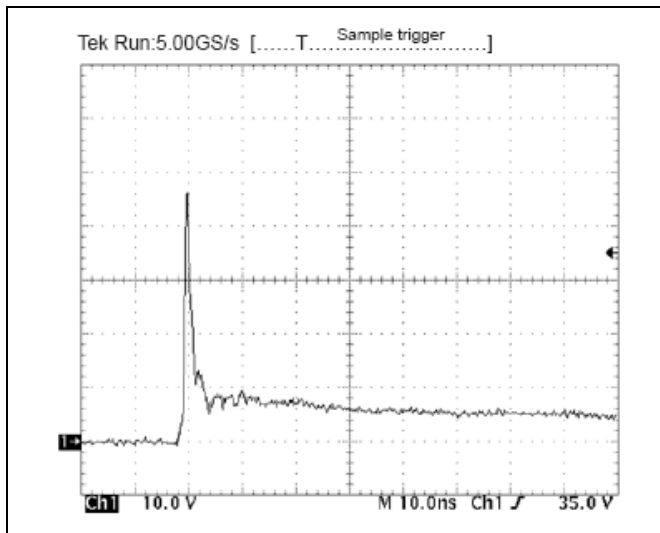
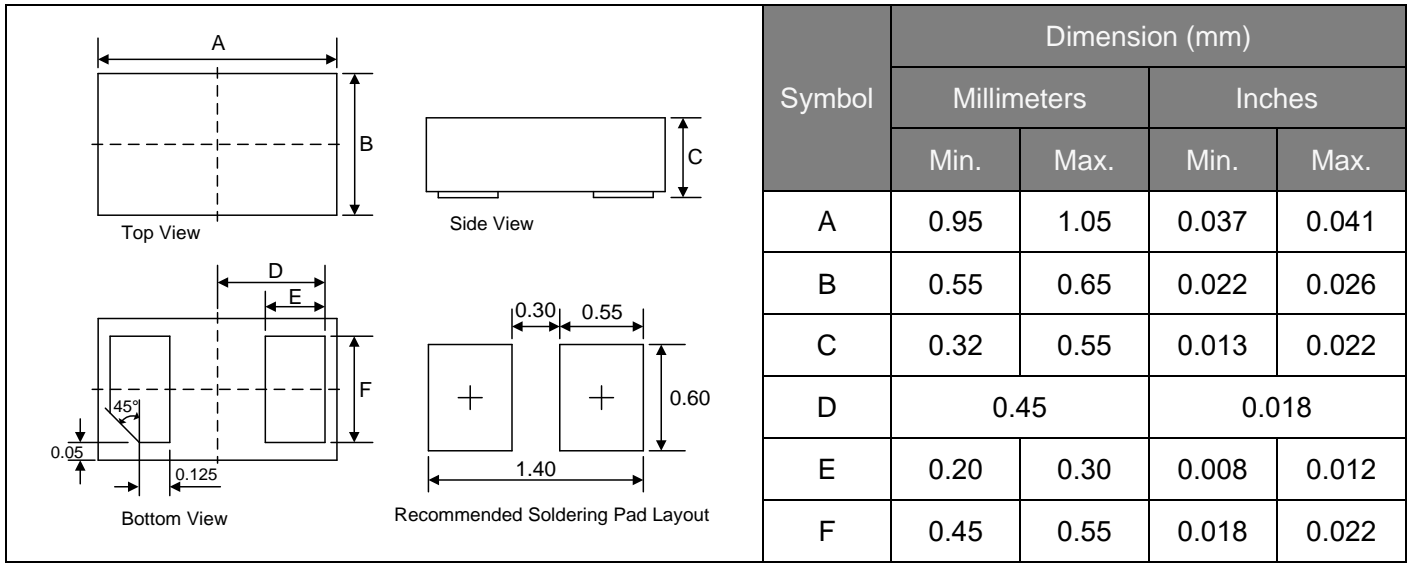


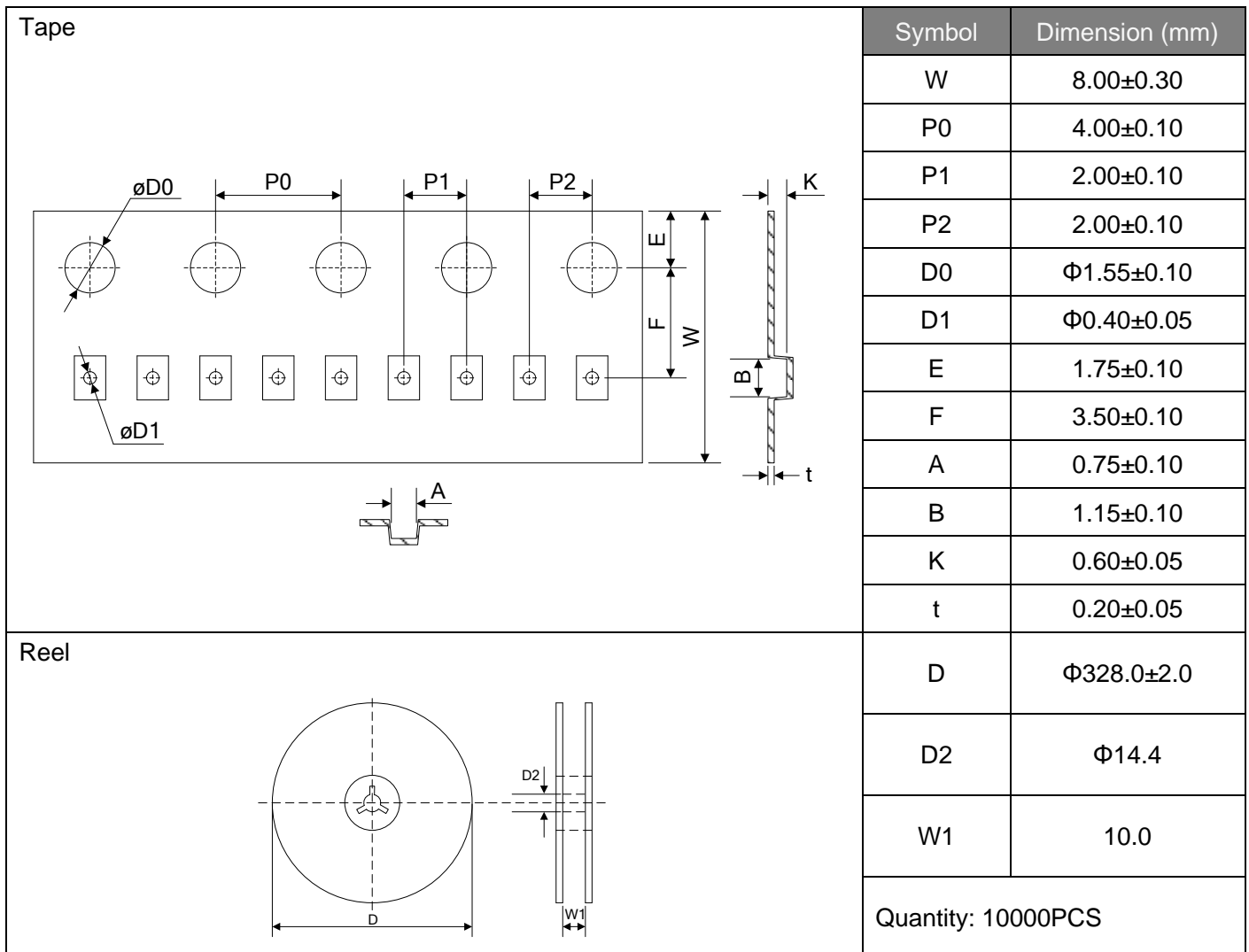
Figure 4. ESD Clamping(8kV Contact IEC61000-4-2)



**Dimensions (SOD882)**



**Packaging**



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