



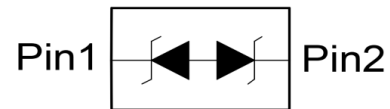
## SSCE5V042L1

1-Line Bidirectional Micro Packaged TVS Diodes for ESD Protection

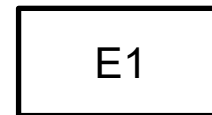
### ● Description

The SSCE5V042L1 is a bi-directional TVS diode, 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 data and power line. The SSCE5V042L1 complies with the IEC 61000-4-2 (ESD) with  $\pm 30$  kV air and  $\pm 30$  kV contact discharge. It is assembled into an ultra-small 0.6x0.3x0.3mm lead-free DFN package. The small size and high ESD surge protection make SSCE5V042L1 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

### ● PIN configuration



Top View



Marking

### ● Feature

- ✧ 72W peak pulse power ( $t_p = 8/20\mu s$ )
- ✧ DFN0603-2L Package
- ✧ Working voltage: 5V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Complies with following standards:
  - IEC61000-4-2(ESD)
    - Air discharge:  $\pm 30$ kV
    - Contact discharge:  $\pm 30$ kV
  - IEC61000-4-5 (Lightning): 6A (8/20 $\mu s$ )

### ● Applications

- ✧ Personal Digital Assistants
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Servers
- ✧ Portable instrumentation

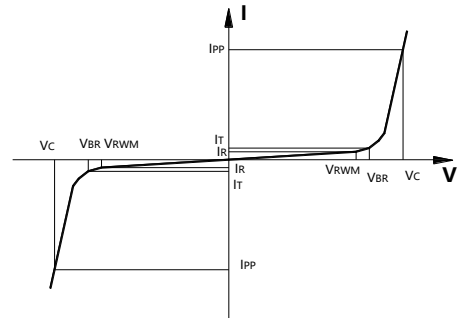
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17  $\mu m$
- ✧ Pin flatness:  $\leq 3$ mil



## ● Electronic Parameter

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$P_{PP}$	Peak Pulse Power



## ● Absolute maximum rating @ $T_A=25^{\circ}C$

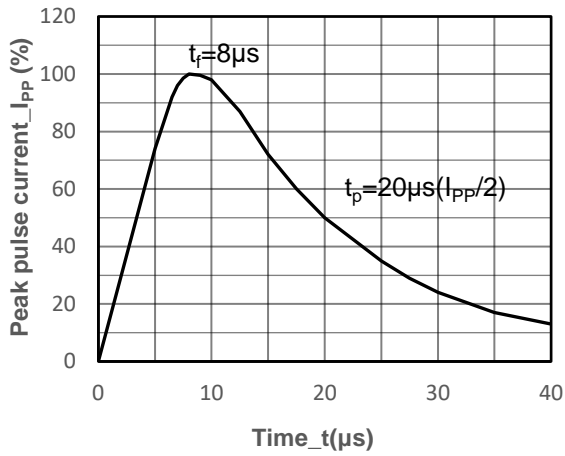
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu$ s)	$P_{PP}$	72	W
Peak Pulse Current (8/20 $\mu$ s)	$I_{PP}$	6	A
ESD Rating per IEC61000-4-2:	Contact	30	kV
	Air	30	
Storage Temperature	$T_{STG}$	-55/+150	$^{\circ}C$
Operating Temperature	$T_J$	-55/+125	$^{\circ}C$

## ● Electrical Characteristics @ $T_A=25^{\circ}C$

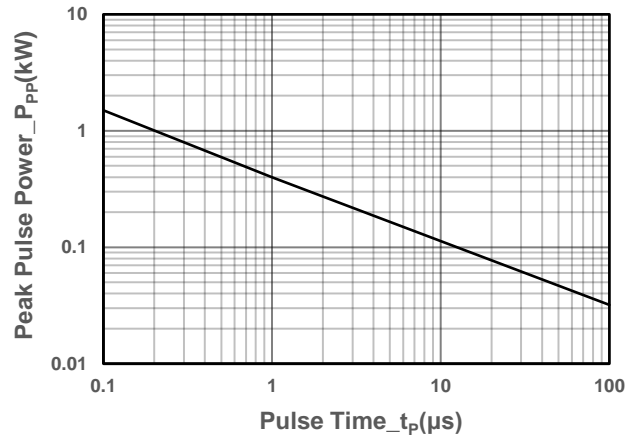
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	5.6	7	7.8	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V$			0.1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A, t_P = 8/20\mu s$		7.5		V
Clamping Voltage	$V_C$	$I_{PP} = 6A, t_P = 8/20\mu s$		8.5	12	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		15	20	pF



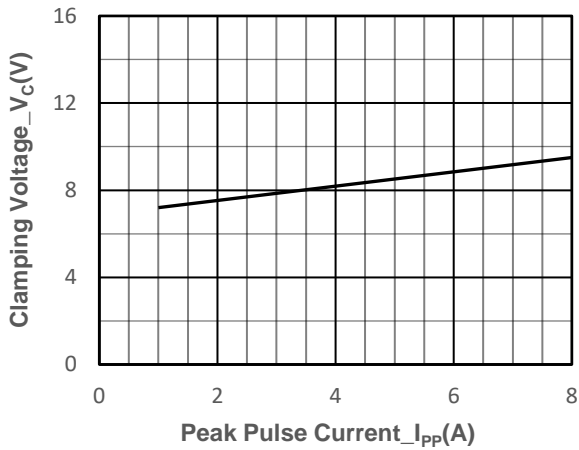
## ● Typical Performance Characteristics



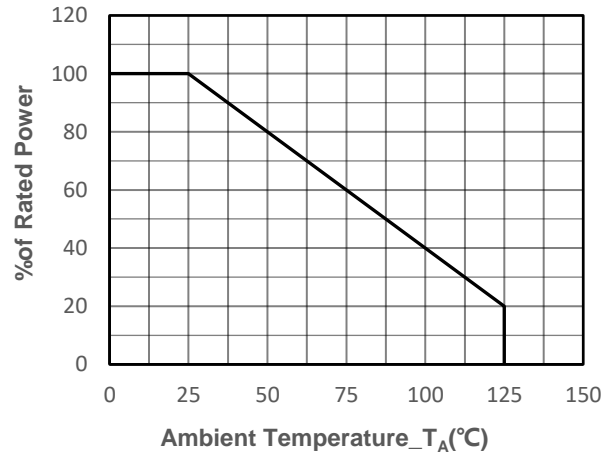
**8/20µs Pulse Waveform**



**Peak Pulse Power vs. Pulse Time**



**Clamping Voltage vs. Peak Pulse Current**



**Power derating vs. Ambient temperature**



## ● Package Information

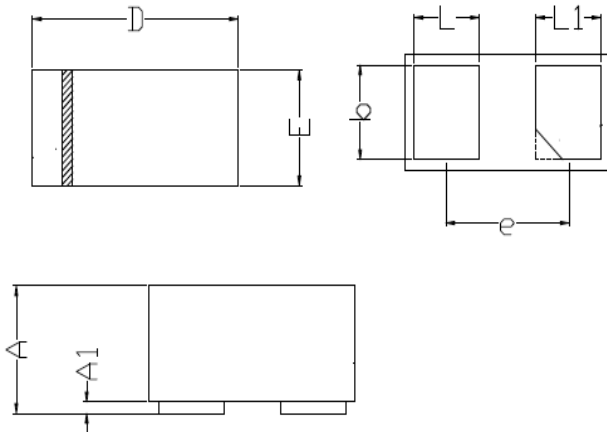
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V042L1	DFN0603-2L	15000	7 Inch

### Mechanical Data

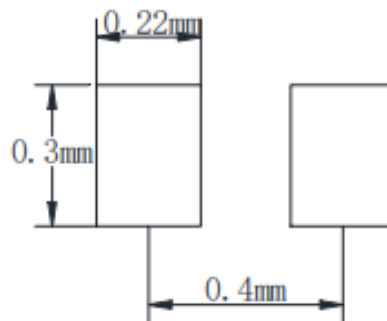
Case: DFN0603-2L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.230	0.330
A1	0.000	0.050
A3	0.102REF	
D	0.550	0.650
E	0.250	0.350
b	0.220	0.270
L	0.120	0.170
L1	0.120	0.170
e	0.40BSC	

### Recommended Pad outline





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