

1-Line Uni-directional ESD Protection Diode



General description

The SLESD8Z5.0 is an uni-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 SLESD8Z5.0 complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size and high ESD surge protection make SLESD8Z5.0 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features and benefits

- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 8A (8/20 μs)
- Low clamping voltage
- Ultra small package: 1.0x0.6x0.5mm
- RoHS Compliant

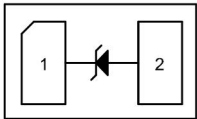
Application information

- Hand Held Portable Applications
- Vbat pin for Mobile Devices
- Battery Protection
- Power Line Protection
- Mobile Phones
- Portable electronics

Ordering information

Device	Package	Marking	Packaging	Reel Size
SLESD8Z5.0	DFN1006-2L	PU	10000/Tape & Reel	7 Inch

Schematic & Pin configuration

Graphic symbol	Pin	Symbol	Description
top view 	1	K	Cathode
	2	A	Anode

Maximum Ratings ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

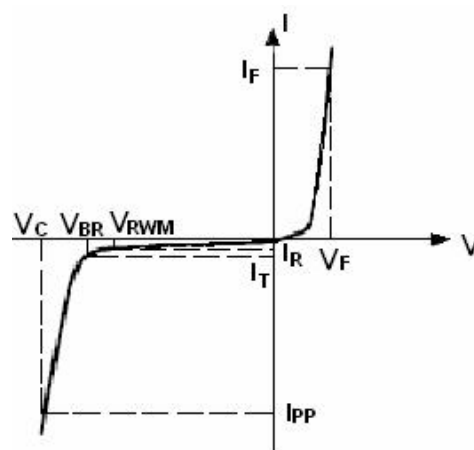
Parameter	Symbol	Value	Unit
Peak Pulse Power ($T_p = 8/20\text{ }\mu\text{s}$)	P_{PPM}	112	W
Rated Peak Pulse Current ($T_p = 8/20\text{ }\mu\text{s}$)	I_{PPM}	8	A
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	30	kV
Maximum lead temperature for soldering during 10s	T_L	260	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$
Operating Temperature Range	T_{OP}	-40 to +125	$^{\circ}\text{C}$

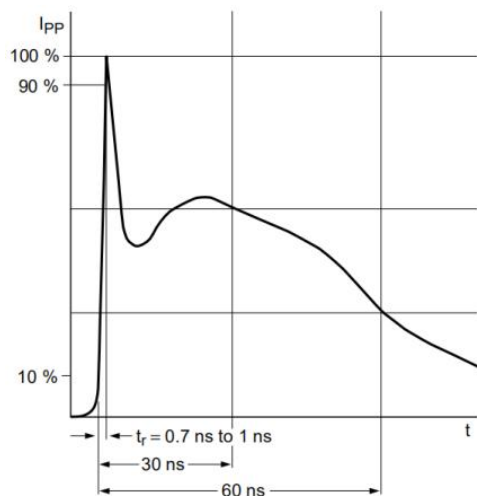
Electrical Characteristics ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.0	6.7	7.9	V	$I_T = 1\text{mA}$
Leakage Current I_{Leak}	I_R	--	--	200	nA	$V_{RWM} = 5\text{V}$
Clamping Voltage	V_C	--	8.0	--	V	$I_{PP} = 1.0\text{A}$, $T_p = 8/20\mu\text{s}$
Clamping Voltage	V_C	--	13.0	14.0	V	$I_{PP} = 8.0\text{A}$, $T_p = 8/20\mu\text{s}$
Junction Capacitance	C_j	--	55	60	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

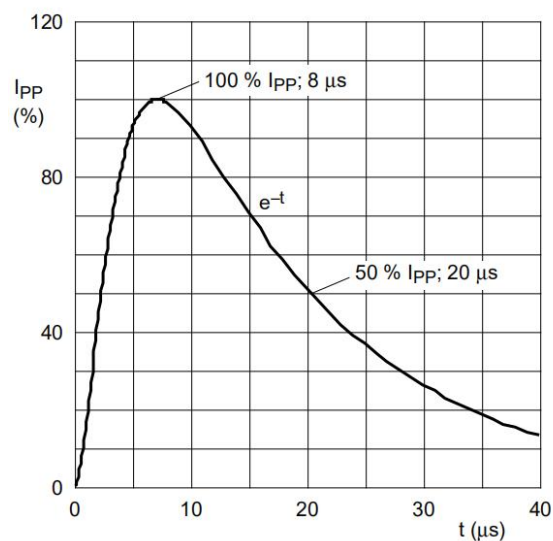
Portion Electronics Parameter

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





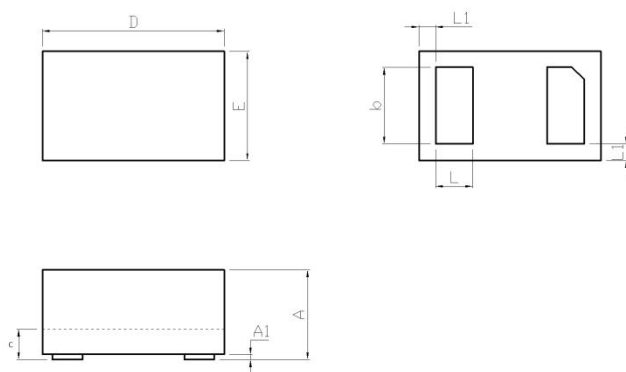
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform(8/20μs pulse)

Package Outline Dimensions

DFN1006-2L



Dimensions In Millimet			
Symbol	Min	Typ	Max
A	0.45	0.50	0.55
A1	0	0.02	0.05
b	0.45	0.5	0.55
c	0.1	0.12	0.14
D	0.95	1.00	1.05
E	0.55	0.60	0.65
L	0.20	0.25	0.30
L1	0.035	0.05	0.065
h	0.07	0.12	0.17