

Low Capacitance ESD Protection Diode

1 Features

- IEC 61000-4-2 ESD Protection
 - $\pm 20\text{kV}$ Contact Discharge
 - $\pm 20\text{kV}$ Air Gap Discharge
- IEC 61000-4-4 EFT Protection
 - 40 A (5/50 ns)
- Peak Reverse Working Voltage: 5.0V (Maximum)
- IO Capacitance:
 - 0.35 pF (Typical)
- DC Breakdown Voltage: 7.0 to 9.0 V (Minimum to Maximum)
- Low Leakage Current: 1 μ A (Maximum)
- Package DFN1006-2L

2 Applications

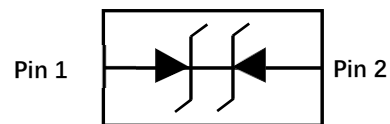
- End Equipment
 - TWS and Smart Wearable
 - TV and Monitors
 - Cellular handsets and accessories
 - Portable electronics
 - Communication systems
 - Computers and peripherals

3 Description

The SLEN25LCB is a bidirectional ESD protection. The SLEN25LCB is rated to dissipate ESD strikes at the maximum level specified in the IEC 61000-4-2 international standard.

This device features a 0.35 pF (Typical) IO capacitance making it ideal for protecting high-speed interfaces up to 20 Gbps such as USB 3.1 Gen2 and Thunderbolt 3. The low dynamic resistance and low clamping voltage ensure system level protection against transient events.

4 Pin Configuration and Bottom View



DFN1006-2L

5 Device Information

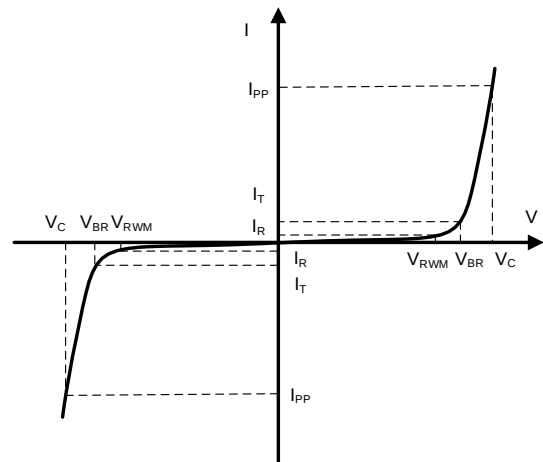
PART NUMBER	MARKING	PACKAGE	BODY SIZE (NOM)
SLEN25LCB	B1	DFN1006-2L	1.00 mm x 0.60mm

6 Absolute maximum Ratings @25°C

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power ($t_p=8/20\mu\text{s}$)	P_{PP}	100	W
Peak Pulse Current ($t_p=8/20\mu\text{s}$)	I_{PP}	4	A
Operating Temperature	T_J	-55 to 125	°C
Storage Temperature	T_{STG}	-55 to 150	°C
ESD Protection-Contact Discharge	V_{ESD}	± 20	kV
ESD Protection-Air Discharge	V_{ESD}	± 20	kV

7 Electronics Parameter Definations

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
C_J	Junction Capacitance



8 Electrical characteristics (@25°C unless otherwise specified)

VPARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Peak Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	7.0		9.0	V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}, T_A = 25^\circ\text{C}$			1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$		10	13	V
Clamping Voltage	V_C	$I_{PP} = 4\text{A}, t_p = 8/20\mu\text{s}$		22	25	V
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}$		0.35	0.52	pF

9 Typical Characteristics

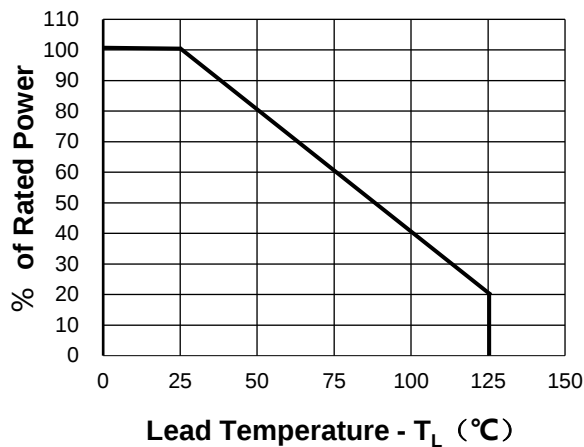


Fig 1. Power Derating Curve

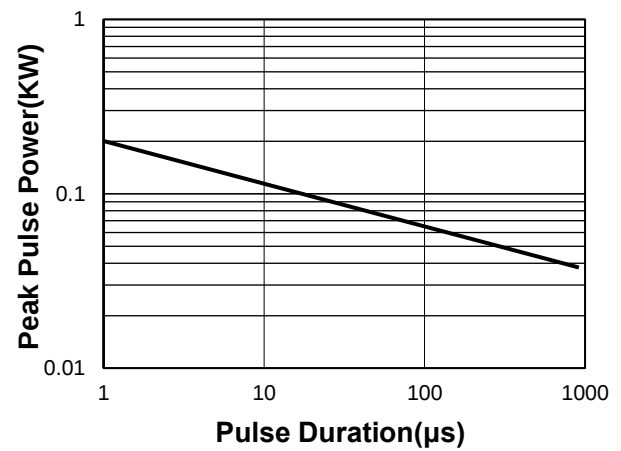


Fig 2. Peak Pulse Power vs. Pulse

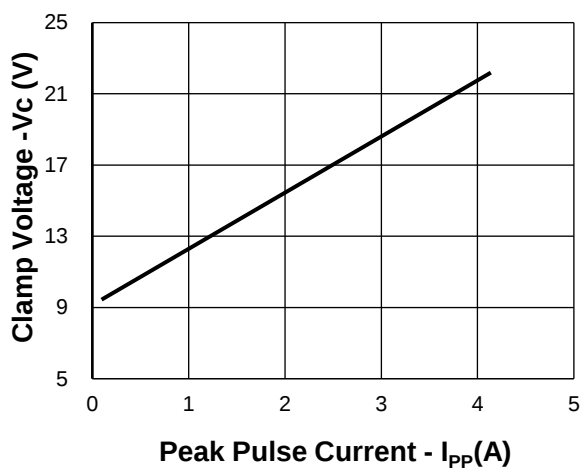


Fig 3. Clamping Voltage vs. Peak Pulse Current

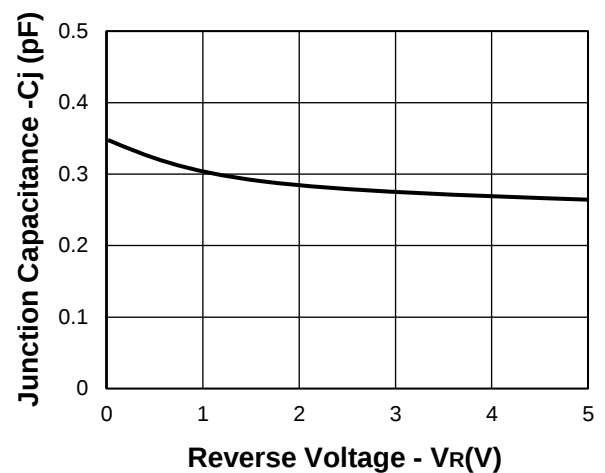
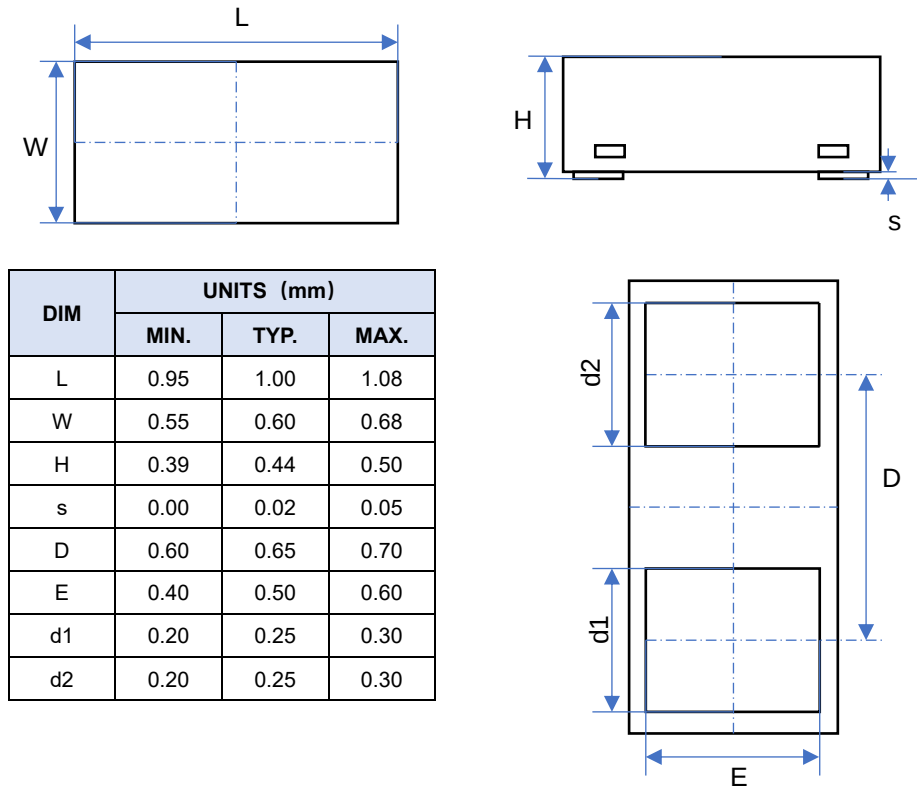


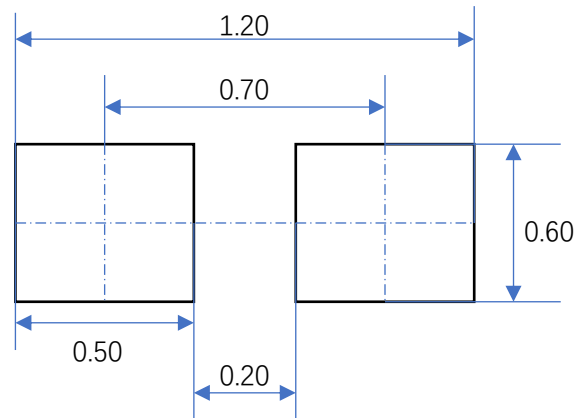
Fig 4. Junction Capacitance vs. Reverse Voltage

10 Product dimension

DFN1006-2L



11 PCB Layout Footprints



12 Ordering Information

Part Number	Packaging	Reel Size
SLEN25LCB	10000/Tape & Reel	7 inch