

Normal Capacitance ESD Protection Diode

1 Features

- IEC 61000-4-2 Level 4 ESD Protection
 - ± 30 -kV Contact Discharge
 - ± 30 -kV Air Gap Discharge
- Peak Reverse Working Voltage: 5.0V (Maximum)
- IO Capacitance:
 - 15 pF (typical)
- DC Breakdown Voltage: 5.7V to 6.5V (Minimum to Maximum)
- Low Leakage Current: 1 μ A (Maximum)
- Industrial Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Package DFN0603-2L

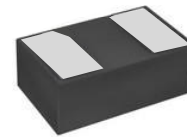
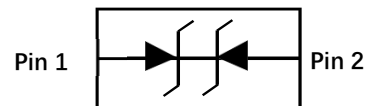
2 Applications

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

3 Description

The SLEN15NCB is designed to protect voltage sensitive components from damage or latch-up due to ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD for board level. Because of its small size and bi-directional design, it is ideal for use in cellular phones, MP3 players, and portable applications that require audio line protection. The SLEN15NCB is rated to dissipate ESD strikes at the maximum level specified in the IEC 61000-4-2 international standard (Level 4).

4 Pin Configuration and Bottom View



DFN0603-2L

5 Device Information

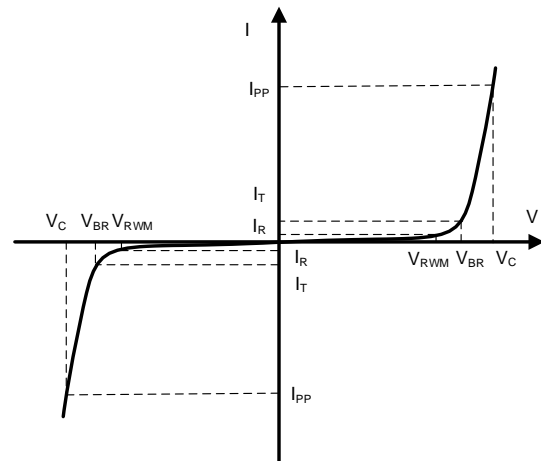
PART NUMBER	MARKING	PACKAGE	BODY SIZE (NOM)
SLEN15NCB	C5	DFN0603-2L	0.60 mm x 0.30mm

6 Absolute maximum Ratings @25°C

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp=8/20 μ s)	P _{PP}	100	W
Peak Pulse Current (tp=8/20 μ s)	I _{PP}	8	A
Operating Temperature	T _J	-55 to 125	$^{\circ}\text{C}$
Storage Temperature	T _{STG}	-55 to 150	$^{\circ}\text{C}$
ESD Protection-Contact Discharge	V _{ESD}	± 30	kV
ESD Protection-Air Discharge	V _{ESD}	± 30	kV

7 Electronics Parameter Definitions

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)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Peak Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	5.7		6.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}, T=25^\circ\text{C}$			1	μA
Clamping Voltage	V_C	$I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$		8.5	9.5	V
Clamping Voltage	V_C	$I_{PP} = 8\text{A}, t_p = 8/20\mu\text{s}$		10	12	V
Junction Capacitance	C_j	$V_R=0\text{V}, f = 1\text{MHz}$		15	20	pF

9 Typical Characteristics

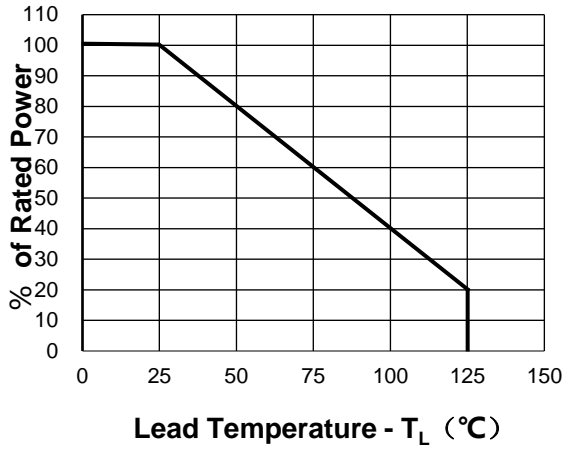


Fig 1. Power Derating Curve

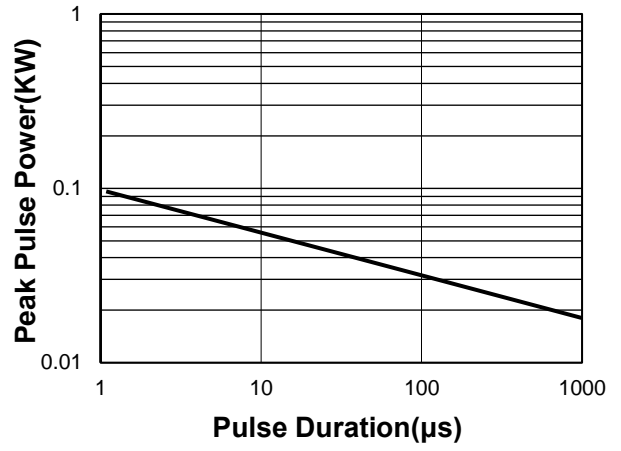


Fig 2. Peak Pulse Power vs. Pulse Time

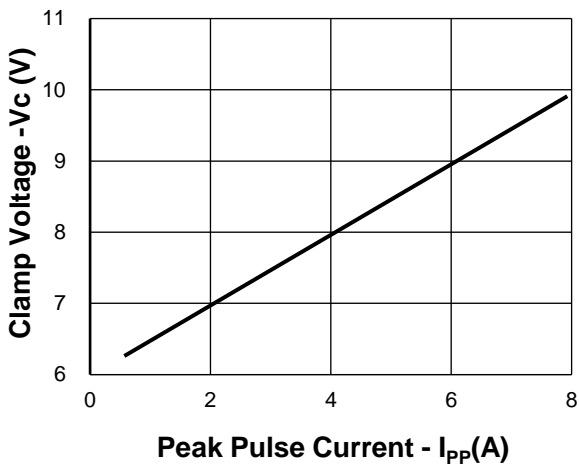


Fig 3. Clamping Voltage vs. Peak Pulse Current

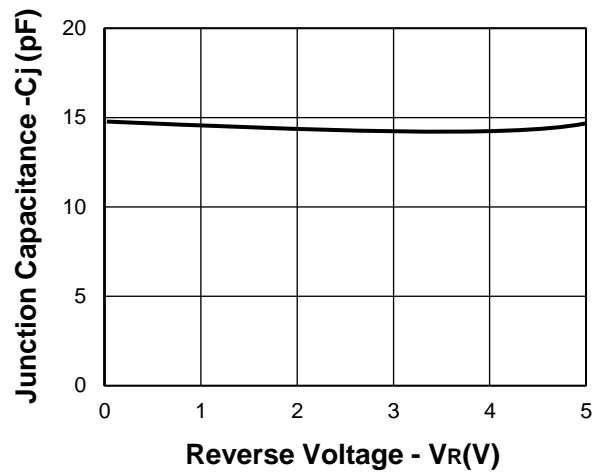
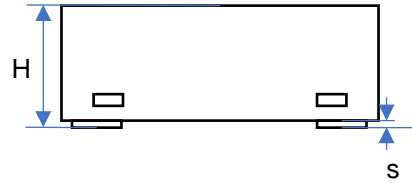
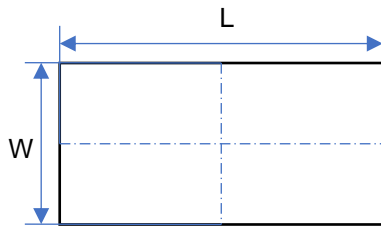


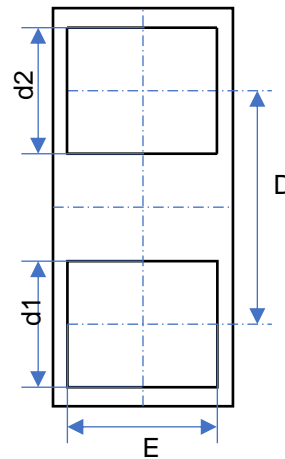
Fig 4. Junction Capacitance vs. Reverse Voltage

10 Product dimension

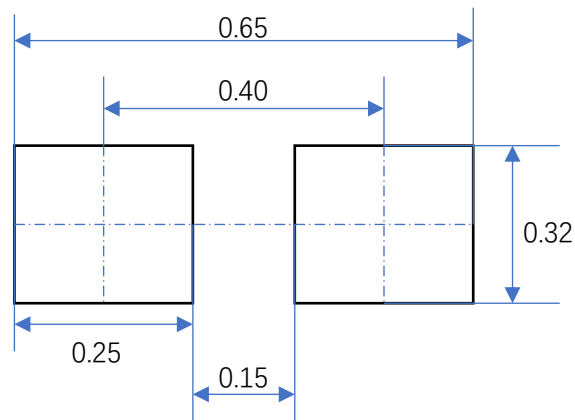
DFN0603-2L



DIM	UNITS (mm)		
	MIN.	TYP.	MAX.
L	0.55	0.60	0.65
W	0.25	0.30	0.35
H	0.27	0.30	0.35
s	0.00	0.02	0.05
D	-	0.35	-
E	0.20	0.25	0.30
d1	0.13	0.18	0.23
d2	0.13	0.18	0.23



11 PCB Layout Footprints



12 Ordering Information

Part Number	Packaging	Reel Size
SLEN15NCB	10000/Tape & Reel	7 inch