Description

The ESOTxxLCC-1 is a high frequency, transient suppression protector of wireless telecommunication applications for portable devices. This device is packaged in a SOT23-6 plastic case and is available in a bidirectional configuration.

Due to its low capacitance, the ESOTxxLCC-1 is ideal protection of Ethernet or USB port interfaces against the effects of electrostatic discharge(ESD) and electrical fast transients(EFT). This device meets the requirements of IEC 61000-4-2 and IEC 61000-4-4.

Features

- 250W Peak Pulse Power per Line(tp=8/20μs)
- Protection two bidirectional lines
- Bidirectional configuration
- Low leakage current < 1μA
- Low capacitance < 3pF per line
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±15kV
    - Contact discharge: ±8kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
- ROHS Compliant
- REACH Compliant

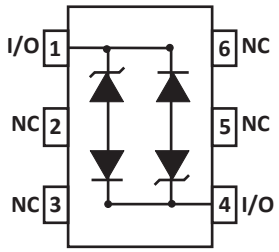
Mechanical Characteristics

- Package: SOT23-6
- Approximate Weight: 16 milligrams
- Lead-free Pure-Tin Plating(Annealed)
- Solder Reflow Temperature:
  Pure-Tin-Sn, 100: 260-270°C
- UL Flammability Classification Rating 94V-0
- 8mm Tape and Reel per EIA Standard 481
- Marking Information: See Below

Applications

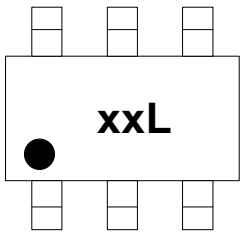
- Ethernet – 10/100/1000 base T
- CAN bus
- SMART phones
- Audio/Video inputs
- Portable electronics
- E1/T1 & E3/T3

Dimensions and Pin Configuration



Circuit and Pin Schematic

Marking Information



xxL = Device Marking Code
Dot denotes Pin1

Ordering Information

Part Number	Marking	Packaging	Reel Size
ESOTxxLCC-1	xxL	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power（tp=8/20μs）	P_{PP}	250	W
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±15 ±8	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

ESOT03LCC-1 (Marking Code: 03L)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			3.3	V	
Breakdown Voltage	V_{BR}	4			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 3.3V
Clamping voltage	V_C			7	V	I_{PP}=1A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			20	A	tp=8/20μs
Junction Capacitance	C_J		1		pF	VR = 0V, f = 1MHz

Note : Test between pins 1 to 4 in both directions.

ESOT05LCC-1 (Marking Code: 05L)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 5V
Clamping voltage	V_C			10	V	I_{PP}=1A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			18	A	tp=8/20μs
Junction Capacitance	C_J		1		pF	VR = 0V, f = 1MHz

Note : Test between pins 1 to 4 in both directions.

ESOT08LCC-1 (Marking Code: 08L)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			8	V	
Breakdown Voltage	V_{BR}	8.5			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 8V
Clamping voltage	V_C			14	V	I_{PP}=1A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			13	A	tp=8/20μs
Junction Capacitance	C_J		1		pF	VR = 0V, f = 1MHz

Note : Test between pins 1 to 4 in both directions.

ESOT12LCC-1 (Marking Code: 12L)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			12	V	
Breakdown Voltage	V_{BR}	13.3			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 12V
Clamping voltage	V_C			19	V	I_{PP}=1A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			10	A	tp=8/20μs
Junction Capacitance	C_J		1		pF	VR = 0V, f = 1MHz

Note : Test between pins 1 to 4 in both directions.

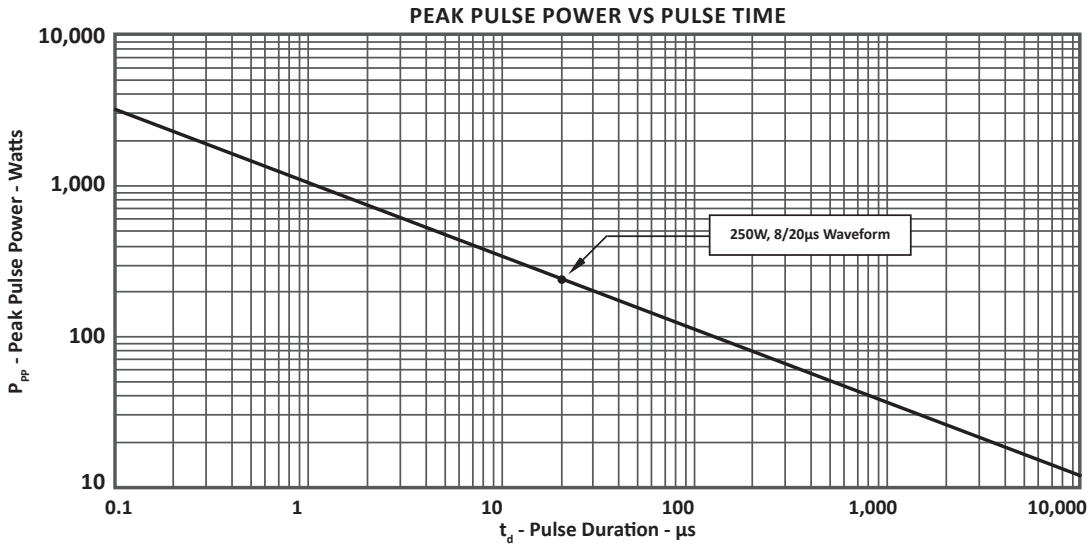
ESOT15LCC-1 (Marking Code: 15L)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			15	V	
Breakdown Voltage	V_{BR}	16.7			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 15V
Clamping voltage	V_C			20	V	I_{PP}=1A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			8	A	tp=8/20μs
Junction Capacitance	C_J		1		pF	VR = 0V, f = 1MHz

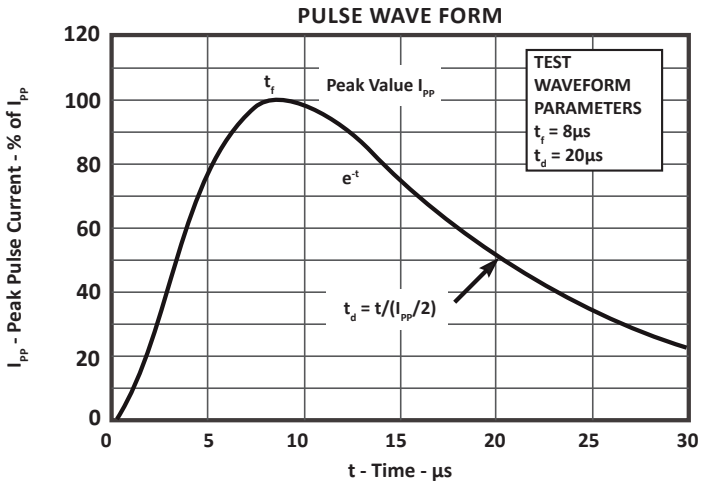
Note : Test between pins 1 to 4 in both directions.

ESOT24LCC-1 (Marking Code: 24L)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			24	V	
Breakdown Voltage	V_{BR}	26.7			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 24V
Clamping voltage	V_C			40	V	I_{PP}=1A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			3.5	A	tp=8/20μs
Junction Capacitance	C_J		1		pF	VR = 0V, f = 1MHz

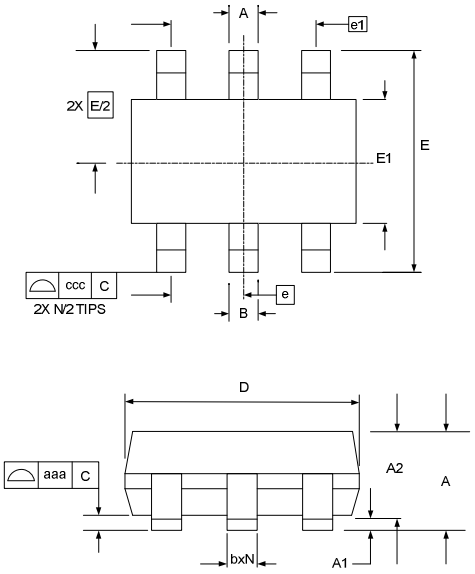
Note : Test between pins 1 to 4 in both directions.

Typical Performance Characteristics (T_A=25℃ unless otherwise Specified)



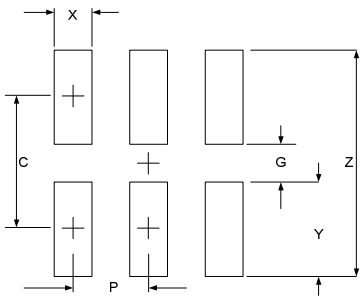


SOT23-6 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90	1.15	1.30	0.035	0.045	0.051
b	0.25		0.50	0.010		0.020
c	0.08		0.22	0.003		0.009
D	2.80	2.90	3.10	0.110	0.114	0.122
E1	1.50	1.60	1.75	0.060	0.063	0.069
E	2.80 BSC			0.110 BSC		
e	0.95 BSC			0.037 BSC		
e1	1.90 BSC			0.075 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141

Contact Information

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