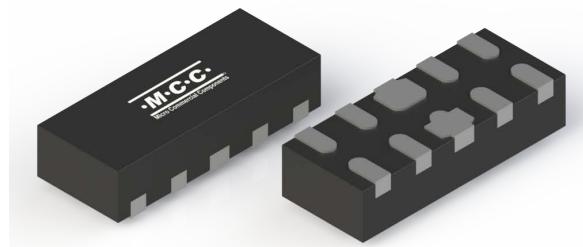


Features

- Transient protection:
 - IEC 61000-4-2 (ESD) $\pm 25\text{kV}$ (Air), $\pm 20\text{kV}$ (Contact)
 - IEC 61000-4-5 (Lightning) 5A (8/20 μs)
- Uni-directional ESD protection of four lines
- Reverse working voltage, V_{RWM} : 5V
- Capacitance: 0.6pF (typical)
- Clamping voltage: 16V (max)
- Reverse leakage current: 900nA max at $V_R = 5\text{V}$
- Solid-state silicon-avalanche



DFN2510-10

**Applications**

- HDMI 1.3, HDMI 1.4, and HDMI 2.0
- USB 2.0, USB 3.0
- Digital Visual Interface (DVI)

Mechanical Data

- Package: DFN2510-10
- Moisture Sensitivity Level 1, per J-STD-020
- Halogen Free. "Green" Device (Note1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Body Marking and Pin Layout

Marking Code	Simplified Outline	Internal Structure
	 Transparent top view	

Ordering Information

Product Name	Reel Size	Packing Type	Qty/Reel
ESDSL0524F-TP	7"	Tape & Reel	3,000

For packaging details, visit our website at [Rev.5.1-12312025](https://www.mccsemi.com/Package>List</p>
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Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

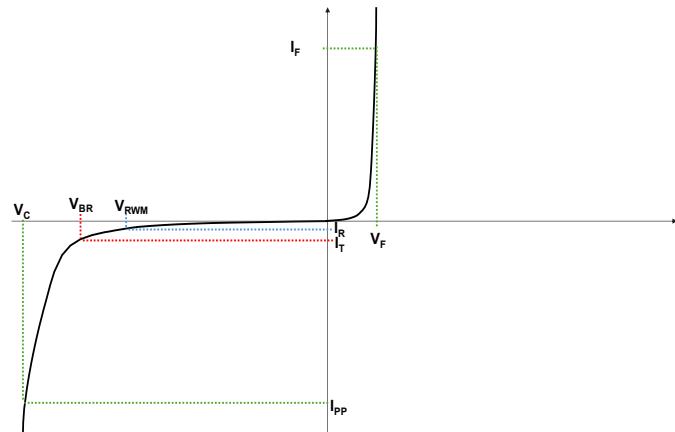
Parameter	Symbol	Rating	Unit
IEC61000-4-2(ESD)	Air	V_{ESD}	± 25
	Contact	V_{ESD}	± 20
Peak Pulse Current (8/20 μs) ^(Note 2)	I_{PP}	5	A
Peak Pulse Power (8/20 μs) ^(Note 2)	P_{PK}	80	W
Operating Junction Temperature Range	T_J	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and 1000ppm antimony compounds.
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

Parameter Definition

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_{PK}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F

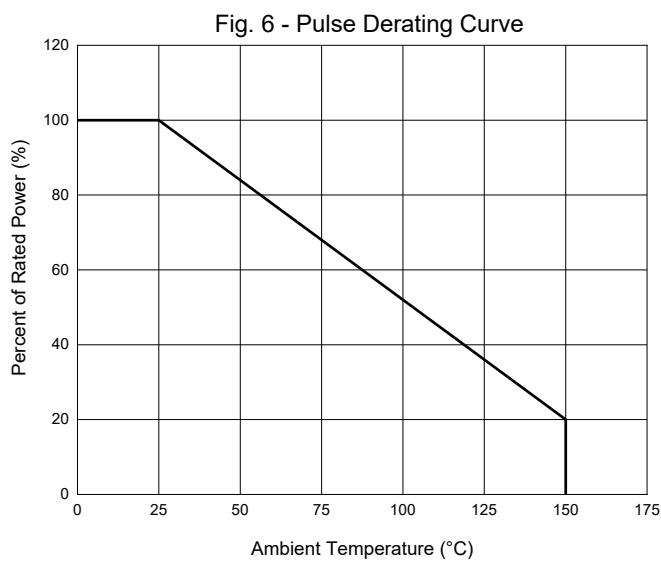
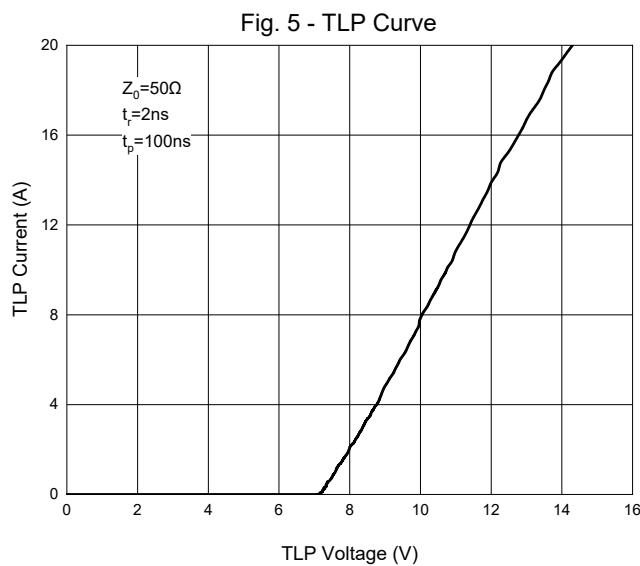
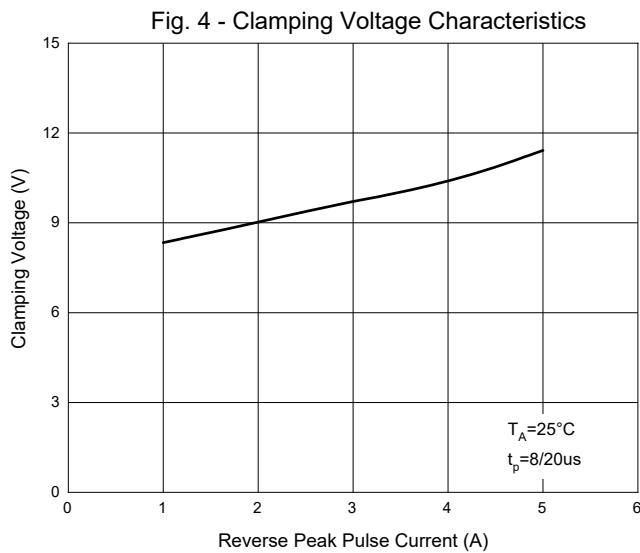
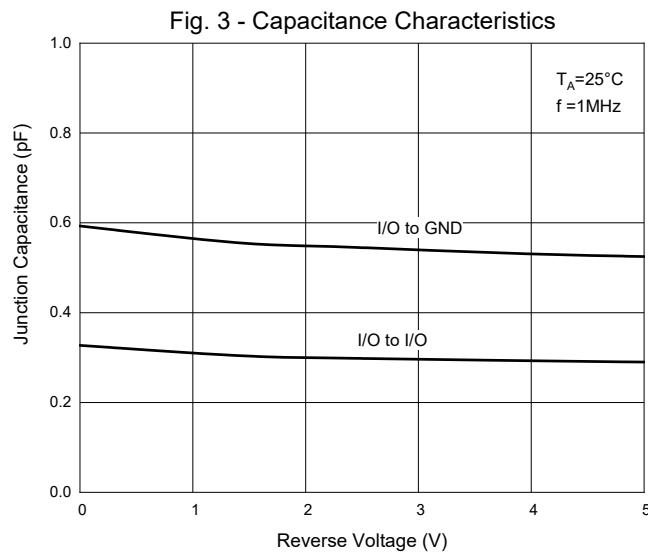
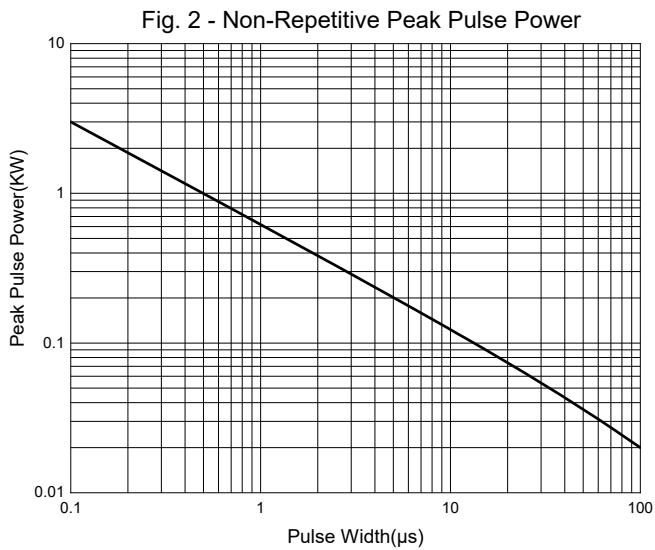
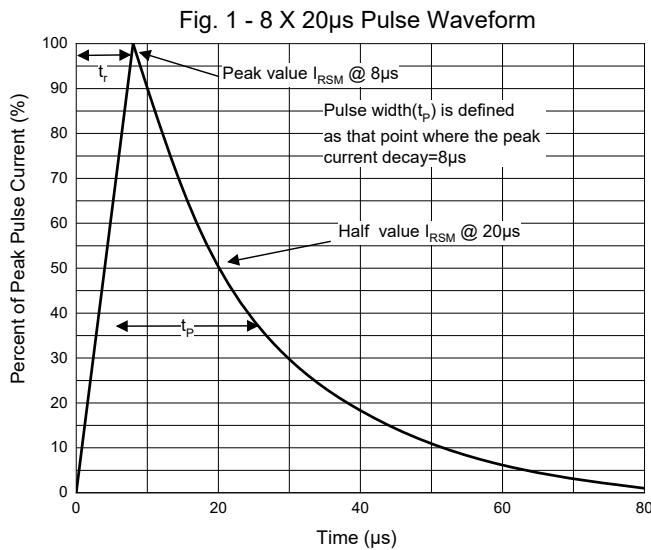

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6.1		9.5	V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$			0.9	μA
Forward Voltage	V_F	$I_F=15\text{mA}$			1.15	V
Clamping Voltage ^(Note 3)	V_C	$I_{PP}=1\text{A}$, $t_p=8/20\mu\text{s}$			10	V
		$I_{PP}=5\text{A}$, $t_p=8/20\mu\text{s}$			16	
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$; I/O to GND	0.6	0.8	0.8	pF
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$; I/O to I/O	0.3	0.4	0.4	pF
Dynamic Resistance ^(Note 4)	R_{DYN}	TLP, $t_p=100\text{ns}$		0.33		Ω

Note:

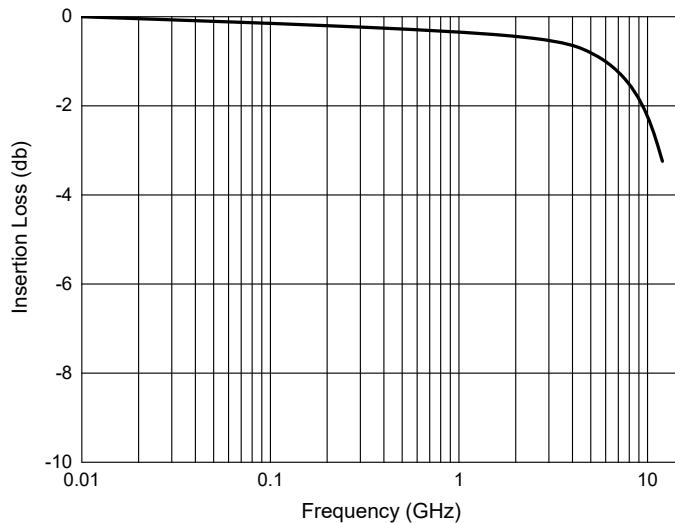
 3. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5..

 4. TLP parameter: $Z_0=50\Omega$, $t_p=100\text{ns}$, $t_r=2\text{ns}$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

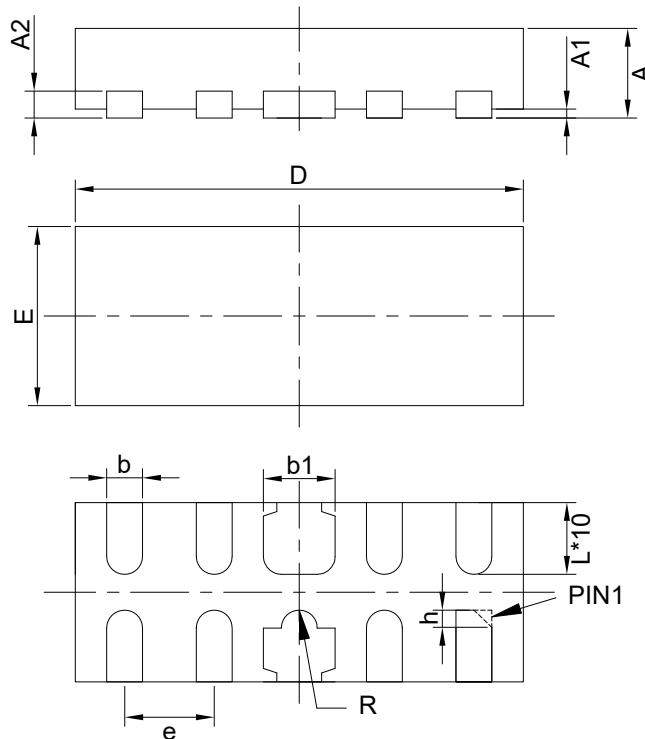
4-Line Uni-directional Low Capacitance ESD
Curve Characteristics


Curve Characteristics

Fig. 3 - Insertion Loss VS Frequency

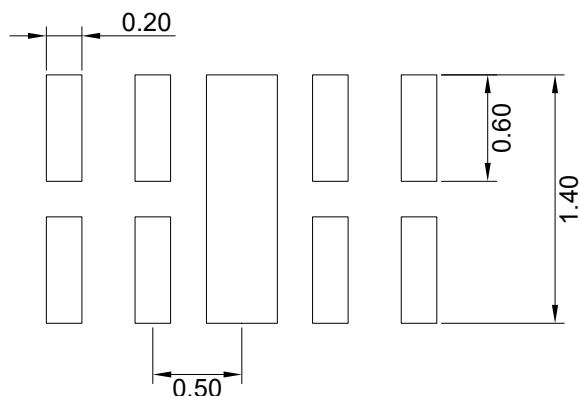


Package Outline



DIM	INCH		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.026	0.45	0.65	
A1	0.000	0.002	0.00	0.05	
A2	0.006		0.15		TYP
b	0.005	0.010	0.13	0.25	
b1	0.012	0.020	0.30	0.50	
D	0.094	0.102	2.40	2.60	
e	0.020		0.50		TYP
E	0.035	0.043	0.90	1.10	
L	0.011	0.020	0.28	0.50	
h	0.004		0.10		TYP
R	0.004		0.10		TYP

Suggested Pad Layout (Unit:mm)



Notes:

1. The suggested land pattern dimensions have been provided for reference only.
2. For further information, please refer to document IPC-7351A.

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