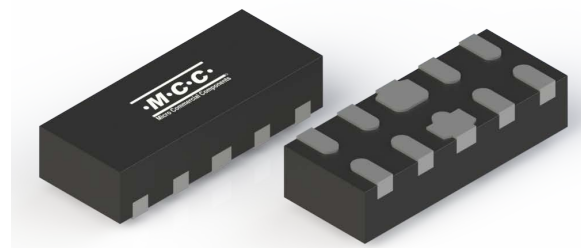


4-Line Uni-directional Low Capacitance ESD

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 $V_{\text{R}} = 5\text{V}$
- 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
	<p>Transparent top view</p>	

Ordering Information

Product Name	Reel Size	Packing Type	Qty/Reel
ESDSLC0524F-TP	7"	Tape & Reel	3,000

For packaging details, visit our website at <https://www.mccsemi.com/Package/List>

4-Line Uni-directional Low Capacitance ESD

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

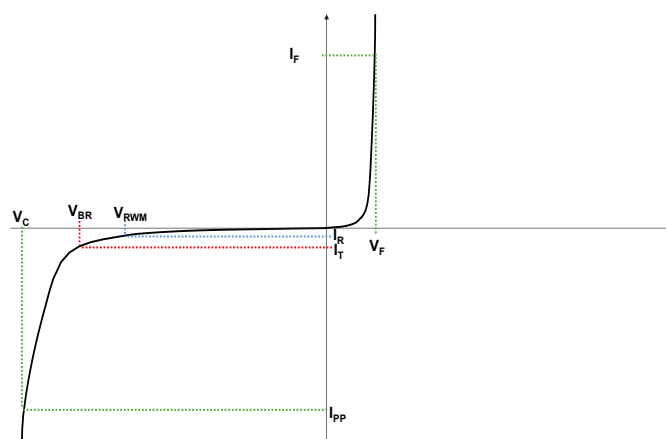
Parameter		Symbol	Rating	Unit
IEC61000-4-2(ESD)	Air	V _{ESD}	±25	kV
	Contact	V _{ESD}	±20	kV
Peak Pulse Current (8/20μs) (Note 2)		I _{PP}	5	A
Peak Pulse Power (8/20μs) (Note 2)		P _{PK}	80	W
Operating Junction Temperature Range		T _J	-55 to +150	°C
Storage Temperature Range		T _{STG}	-55 to +150	°C

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 8/20μs 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°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 = 1mA	6.1		9.5	V
Reverse Leakage Current	I _R	V _{RWM} = 5V			0.9	μA
Forward Voltage	V _F	I _F = 15mA			1.15	V
Clamping Voltage (Note3)	V _C	I _{PP} = 1A, t _p = 8/20μs			10	V
		I _{PP} = 5A, t _p = 8/20μs			16	
Junction Capacitance	C _J	V _R = 0V, f = 1MHz; I/O to GND		0.6	0.8	pF
Junction Capacitance	C _J	V _R = 0V, f = 1MHz; I/O to I/O		0.3	0.4	pF
Dynamic Resistance (Note4)	R _{DYN}	TLP, t _p = 100ns		0.33		Ω

Note:

3. Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.
4. TLP parameter: Z₀ = 50Ω, t_p = 100ns, t_r = 2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

4-Line Uni-directional Low Capacitance ESD

Curve Characteristics

Fig. 1 - 8 X 20 μ s Pulse Waveform

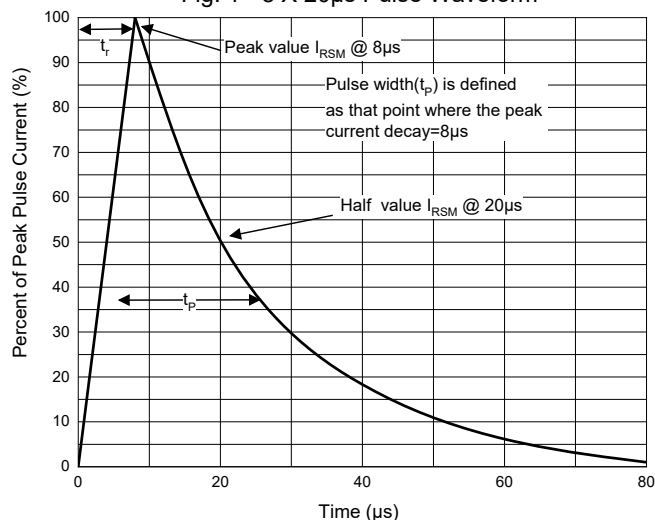


Fig. 2 - Non-Repetitive Peak Pulse Power

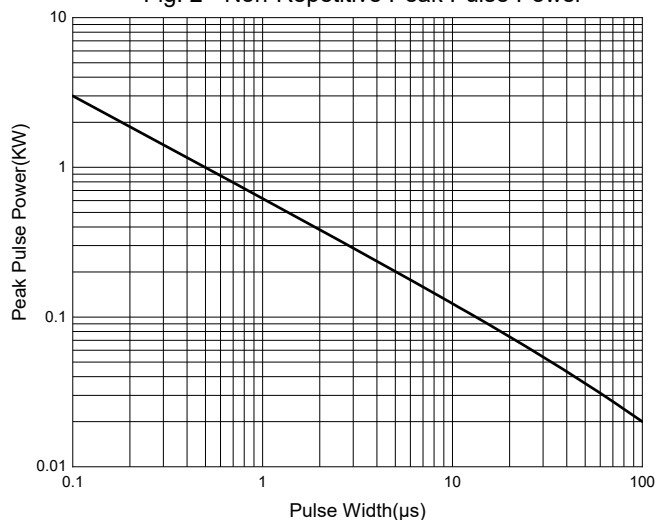


Fig. 3 - Capacitance Characteristics

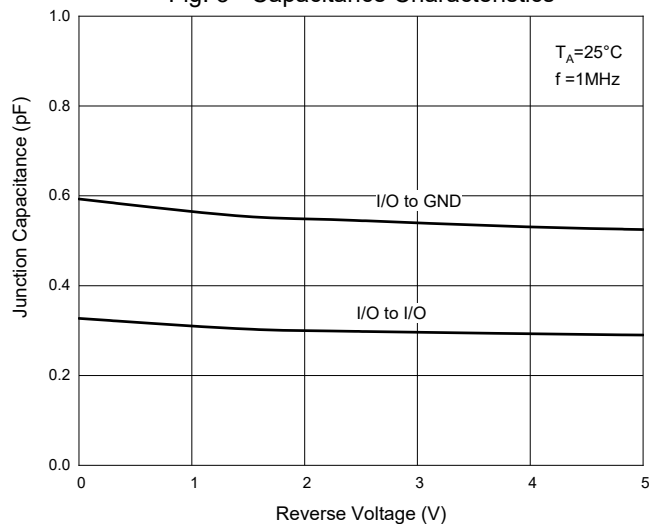


Fig. 4 - Clamping Voltage Characteristics

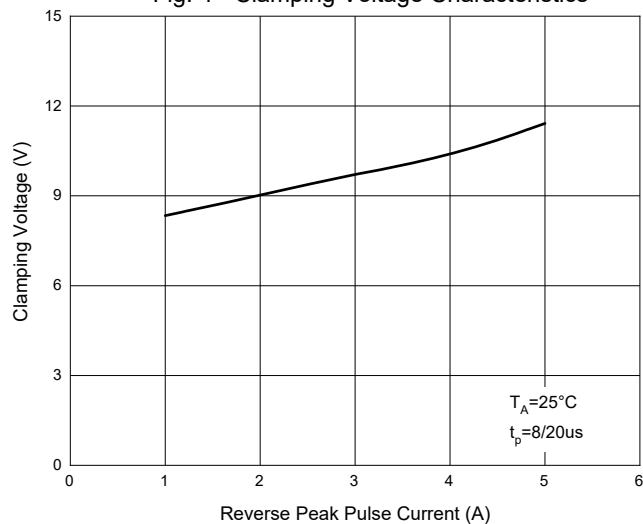


Fig. 5 - TLP Curve

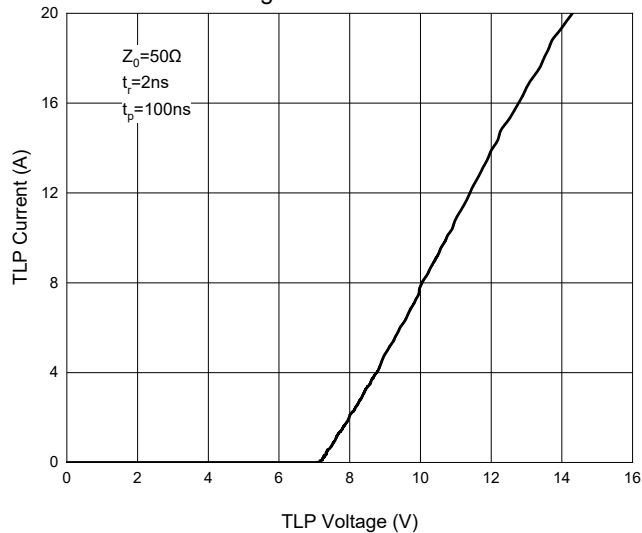
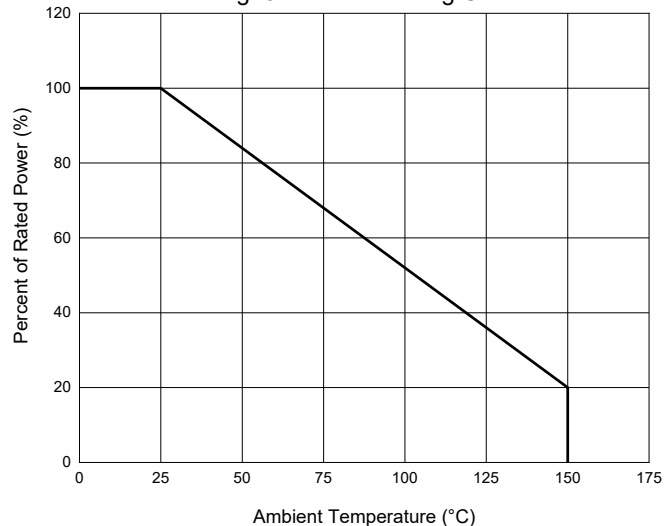
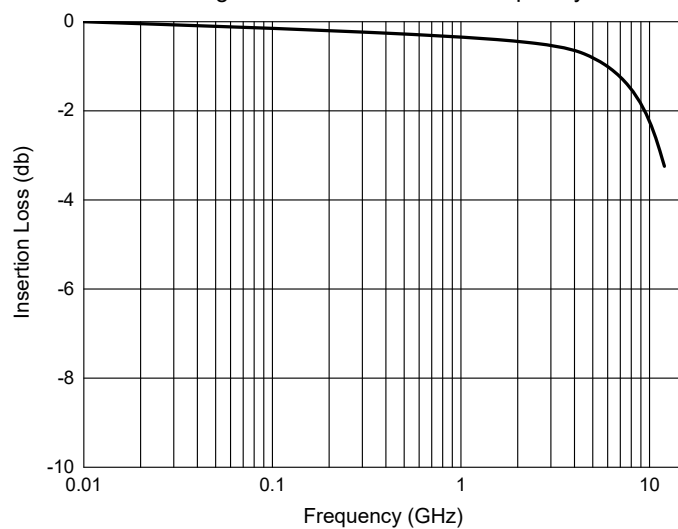


Fig. 6 - Pulse Derating Curve

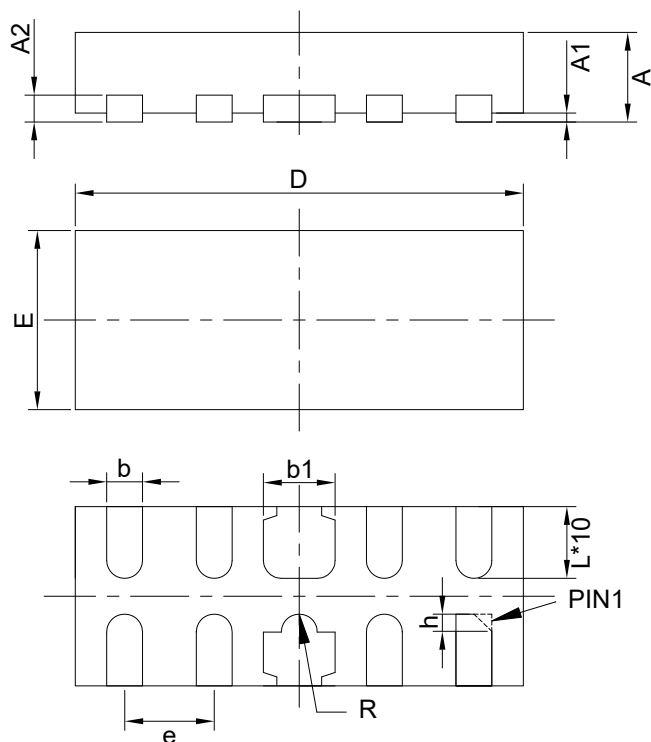


Curve Characteristics

Fig. 3 - Insertion Loss VS Frequency

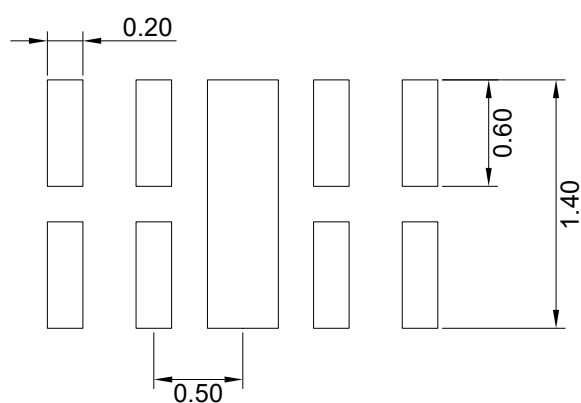


Package Outline



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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