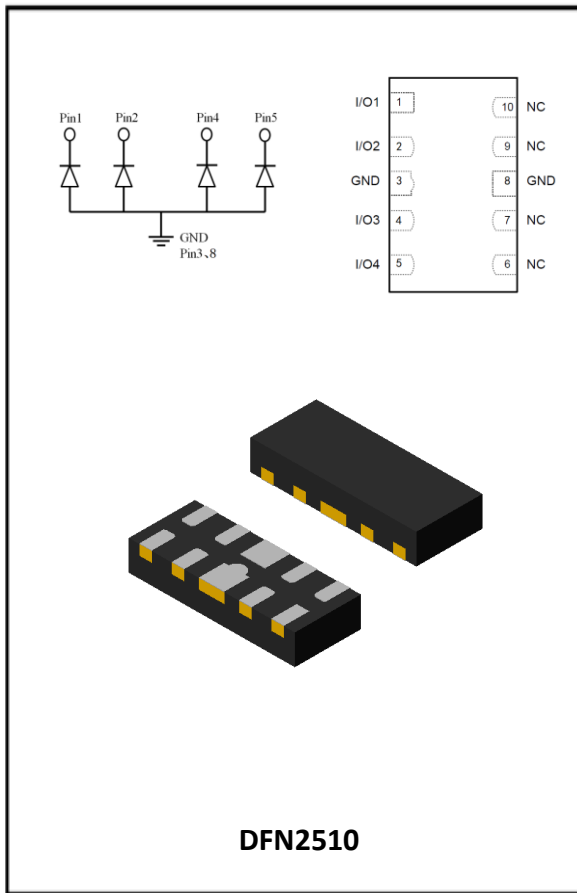


4-Line, Uni-directional, Ultra-low Capacitance, Transient Voltage Suppressor



Features

- Stand-off voltage: 3.3V Max
- Transient protection for each line according to IEC61000-4-2(ESD): $\pm 15\text{kV}$ (contact)
IEC61000-4-5(surge): 7A (8/20 μs)
- Ultra-low capacitance: $C_j = 0.4 \text{ pF}$ typ
- Low leakage current
- Low clamping voltage
- Up to 4 lines protects
- RoHS Compliant

Applications

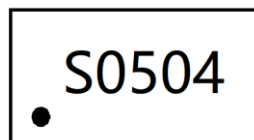
- HDMI 2.0, USB 3.0/3.1 Type C
- Monitors and flat panel displays
- Set-top box and Digital TV
- MDDI ports
- Video graphics cards
- Digital Video Interface (DVI)
- Notebook Computers
- PCI Express and Serial SATA Ports

Caution:

*This Device is designed for signal line protection only.
Not intended to be used under bias, not for application with a power line.*

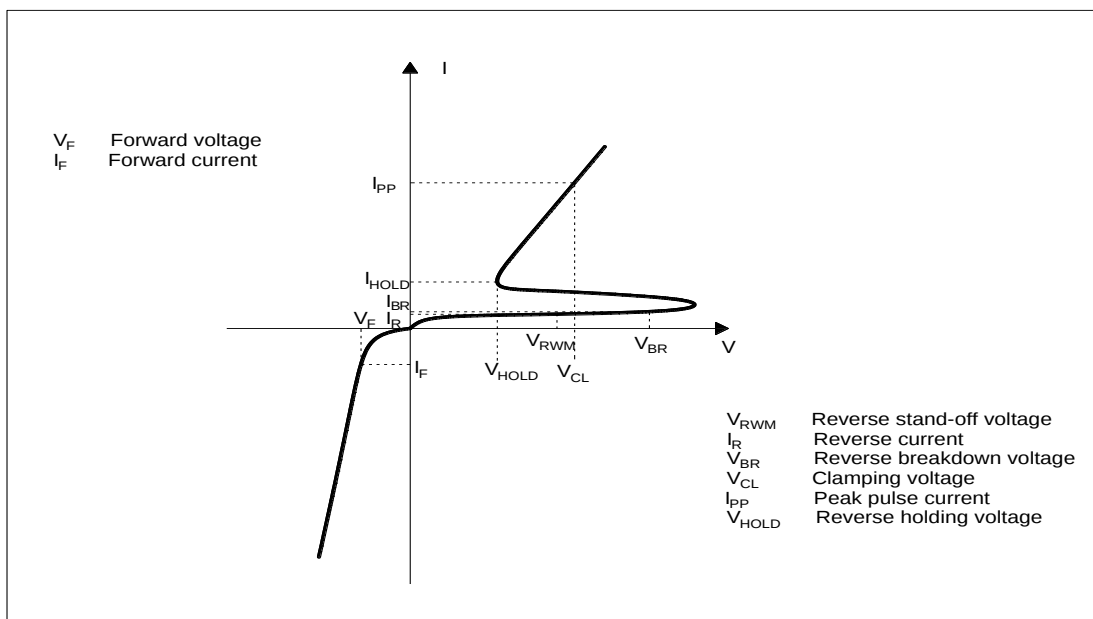
Mechanical Data

- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below



0524L: Device Marking Code
Dot denotes Pin1

■Definitions of electrical characteristics





SESDULC3304P5

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	56	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	7	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 15	KV
ESD according to IEC61000-4-2 contact discharge		± 15	
Junction temperature	T_J	-55~125	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

■Electrical Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V	Any I/O pin to ground			3.3
Reverse leakage current	I_R	nA	$V_{RWM} = 3.3V$, any I/O pin to ground			200
Reverse breakdown voltage	$V_{(BR)}$	V	$I_T = 1mA$, any I/O pin to ground	6.0	8.0	10.0
Reverse holding voltage	V_{HOLD}	V	$I_{HOLD} = 50mA$, any I/O pin to ground		2	
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 16A$, $t_p = 100ns$		5.5	
Clamping voltage ²⁾	V_{CL}	V	$I_{PP} = 1A$, $t_p = 8/20\mu s$		2.5	5
		V	$I_{PP} = 7A$, $t_p = 8/20\mu s$		4.5	8
Junction capacitance	CJ	pF	$V_R = 0V$, $f = 1MHz$ Any I/O pin to GND		0.4	0.55
			$V_R = 1.5V$, $f = 1MHz$ Any I/O pin to GND		0.3	0.45

Notes:

- 1) TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns.
- 2) Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SESDULC3304P5	F1	Approximate 3.48	3000	30000	120000	7 reel

■ Characteristics (Typical)

Fig.1 8/20 μ s waveform per IEC61000-4-5

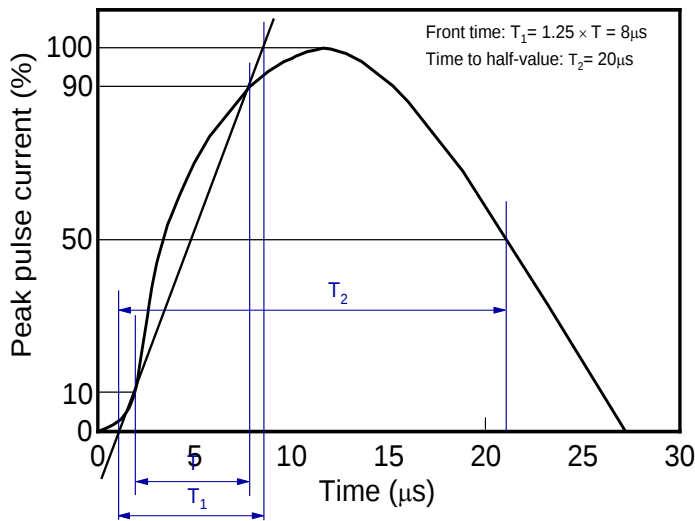


Fig.2 Contact discharge current waveform per IEC61000-4-2

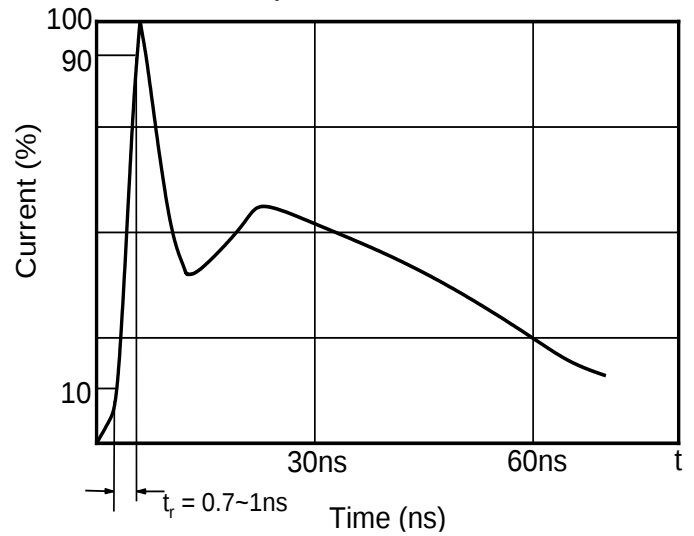


Fig.3 Clamping voltage vs. Peak pulse current

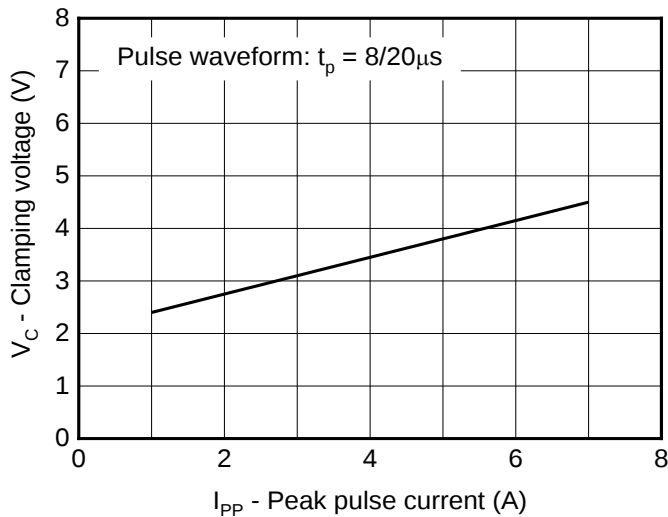


Fig.4 Capacitance vs. Reverse voltage

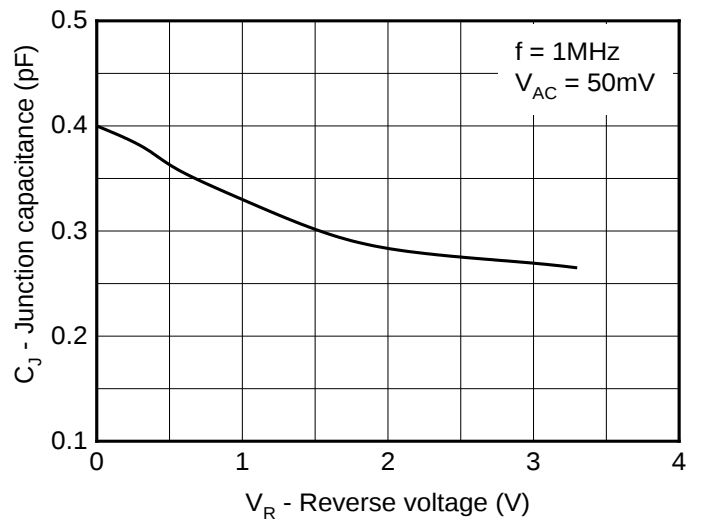


Fig.5 Non-repetitive peak pulse power vs. Pulse time

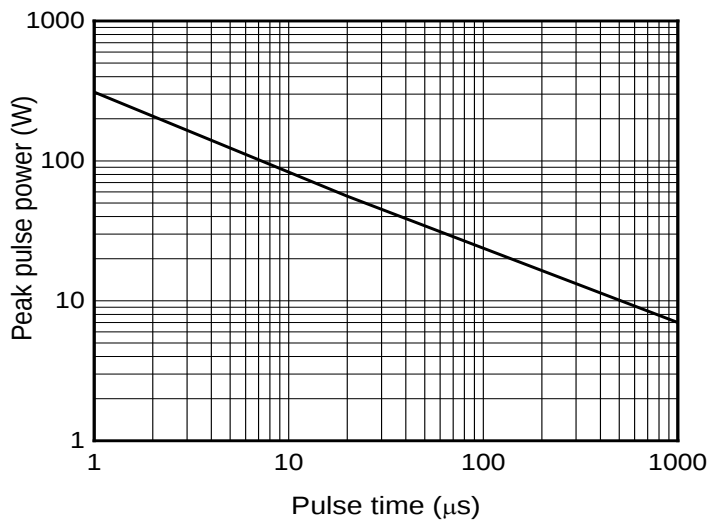


Fig.6 Power derating vs. Ambient temperature

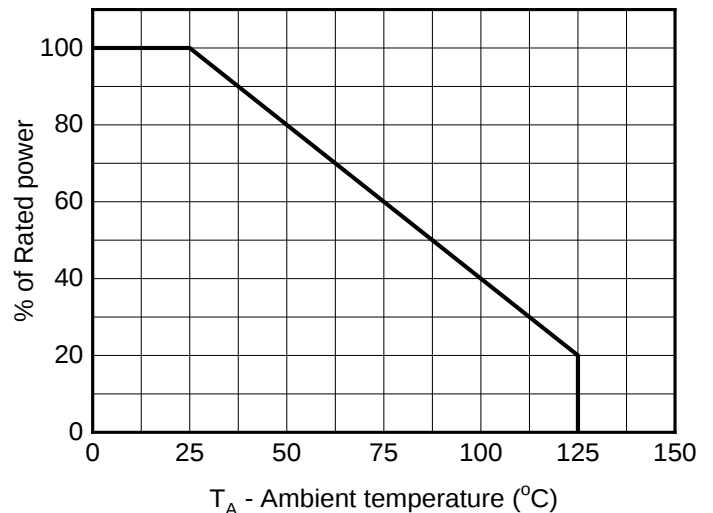
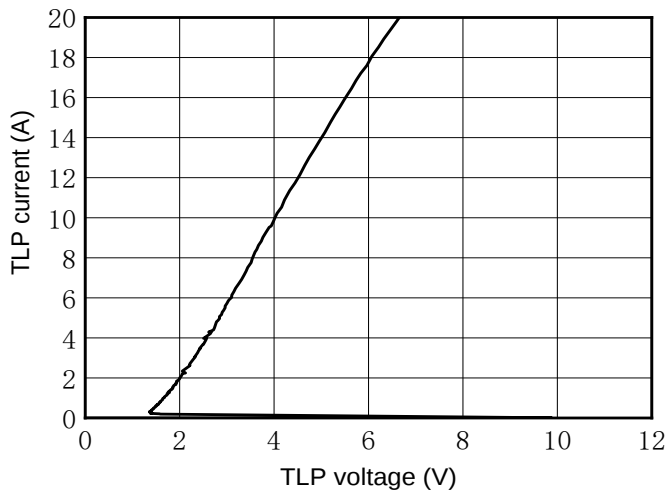
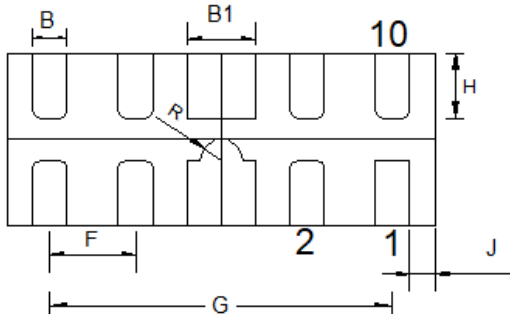
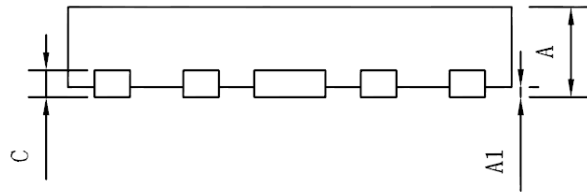
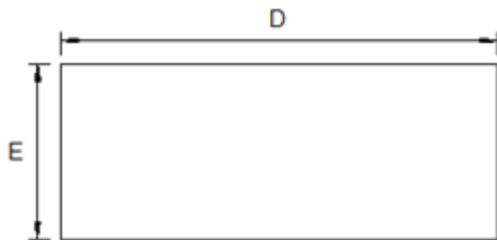


Fig.7 TLP Measurement

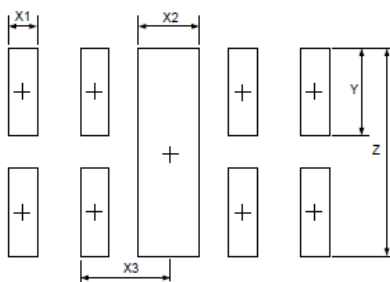


Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.40	0.45	0.50
A1	--	0.02	0.05
B	0.15	0.20	0.25
B1	0.35	0.40	0.45
C	0.10	0.15	0.20
D	2.45	2.50	2.55
E	0.95	1.00	1.05
F	0.50 BSC		
G	2.00 BSC		
H	0.30	0.38	0.46
R	0.125 BSC		
J	0.10	0.15	0.20

Soldering Footprint



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X1	0.200	0.008
X2	0.400	0.016
X3	0.600	0.024
Y	0.600	0.024
Z	1.400	0.056

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.



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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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