

Ultra Low Capacitance TVS Diode Arrays

DESCRIPTION:

The KJESD0524P is 4-channel ultra low capacitance ESD transient voltage suppressor which provides a very high level of protection for sensitive electronic components that may be subjected to electrostatic discharge. It is particularly well-suited to protect systems with high speed communication lines from ESD, EFT, and lightning.

The KJESD0524P consists of eight low capacitance steering diodes and a TVS diode in a QFN package. Each channel of KJESD0524P could safely dissipate ESD strikes of $\pm 15\text{KV}$ air discharge as well as $\pm 8\text{KV}$ contact discharge, meeting the requirement of the IEC 61000-4-2 international standard. Using the MIL-STD-883 (Method 3015) specification for Human Body Model (HBM) ESD, the device provides protection for contact discharges to greater than $\pm 15\text{KV}$.

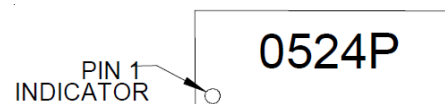
FEATURES:

- ◆ Transient protection for data lines to
IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
IEC61000-4-4 (EFT) 40A (5/50ns)
IEC61000-4-5 (Lightning) 5A (8/20 μs)
- ◆ Protects two or four I/O lines
- ◆ Working voltage: 5V
- ◆ Low leakage current
- ◆ Low operating and clamping voltages
- ◆ Low capacitance: 0.3 pF typical (I/O to I/O)
- ◆ RoHS Compliant

APPLICATIONS:

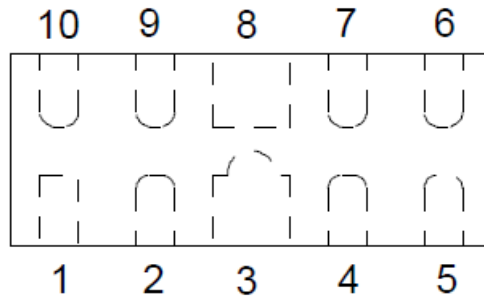
- ◆ High Definition Multi-Media Interface (HDMI)
- ◆ Digital Visual Interface (DVI)
- ◆ DisplayPort Interface
- ◆ MDDI Ports
- ◆ PCI Express
- ◆ eSATA Interfaces

PART MARKING:



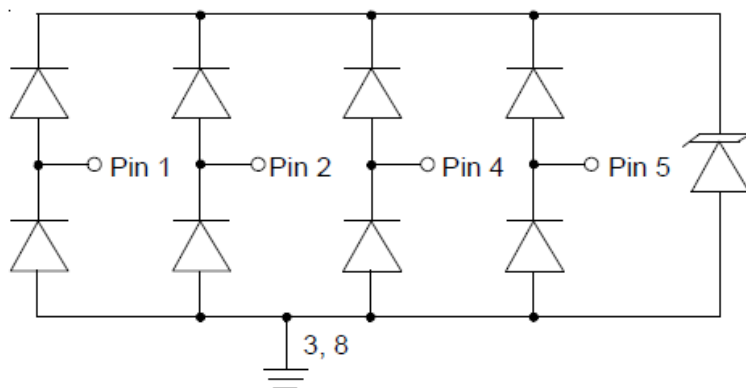
PIN IDENTIFICATION AND CONFIGURATION:

DFN-10 Pin Configuration (Top View)



Pin	Identification
1, 2, 4, 5	Input Lines
6, 7, 9, 10	Output Lines (No Internal Connection)
3, 8	Ground

Circuit Diagram



ABSOLUTE MAXIMUM RATINGS:

(TA=25 Unless otherwise °C noted)

Parameter	Symbol	Typical	Unit
Peak Pulse Power ($t_p = 8/20 \mu s$)	P _{pk}	250	W
Maximum Peak Pulse Current ($t_p = 8/20 \mu s$)	I _{pp}	5	A
ESD per IEC 61000 – 4 – 2 (Air)	V _{pp}	±15	KV
ESD per IEC 61000 – 4 – 2 (Contact)	V _{pp}	±8	KV
Operating Junction Temperature	T _J	-55 ~ 150	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Lead Soldering Temperature	T _L	260 (10sec)	°C

ELECTRICAL CHARACTERISTICS

(TA=25 Unless otherwise noted)°C

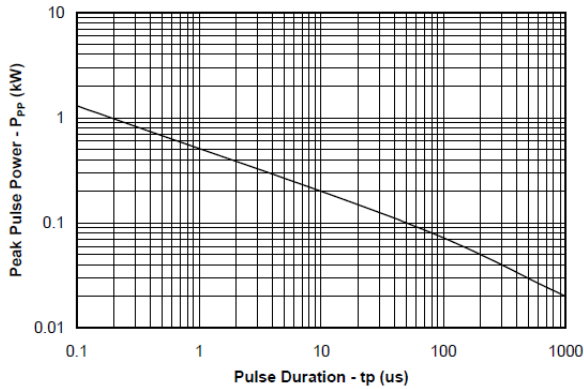
Parameter	Symbol	Conditions	Min.	Typ.	MAX.	Unit
Reverse Stand-Off Voltage	V _{RWM}				5	V
Reverse Breakdown Voltage	V _{BR}	I _t = 1mA	6.1	7.7	8.5	V
Reverse Leakage Current	I _R	V _{RWM} =5V, T=25°C			0.9	μA
Clamping Voltage	V _C	I _{pp} =1A, t _p =8/20 μs			18	V
Junction Capacitance	C _j	V _R =0V, f=1MHz Any I/O pin to Ground			0.8	pF
		V _R =0V, f= 1MHz Between I/O pins		0.3	0.4	

ORDER INFORMATION:

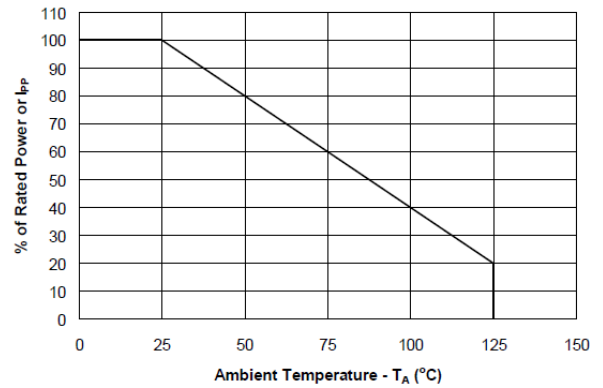
Par Number	Number of Lines	Package Type	Qty per Reel	Reel Size
KJESD0524P	4	DFN2510-10	3,000 pcs	7 inch

TYPICAL CHARACTERISTICS:

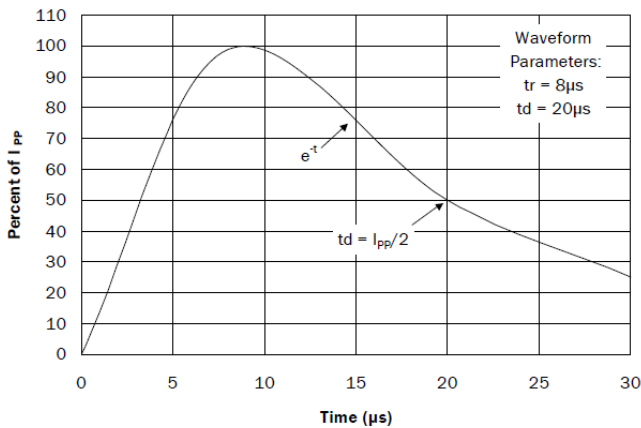
Non-Repetitive Peak Pulse Power vs. Pulse Time



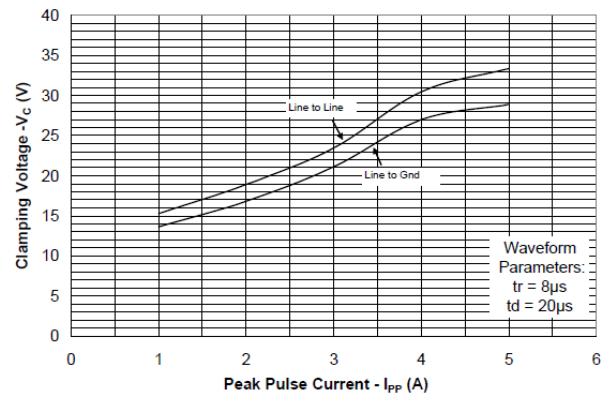
Power Derating Curve



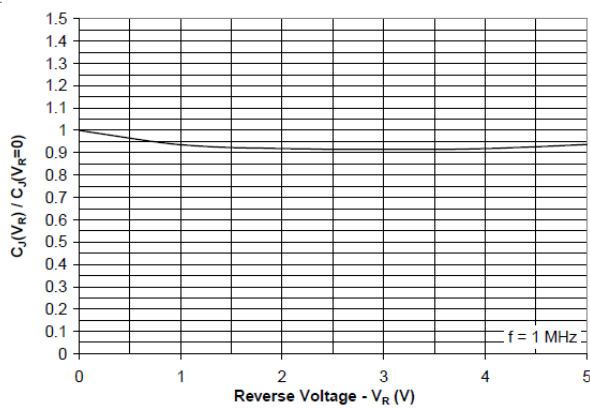
Pulse Waveform



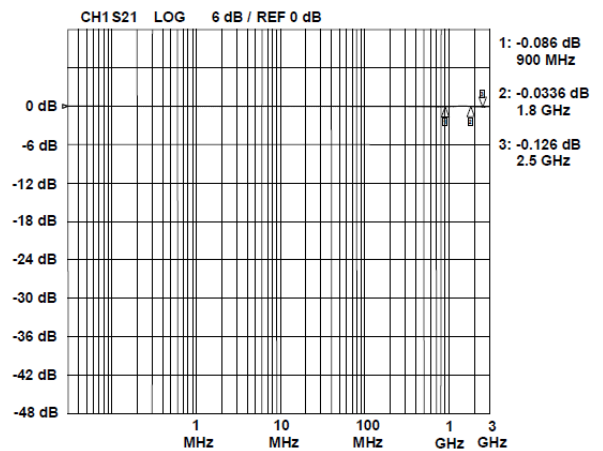
Clamping Voltage vs. Peak Pulse Current



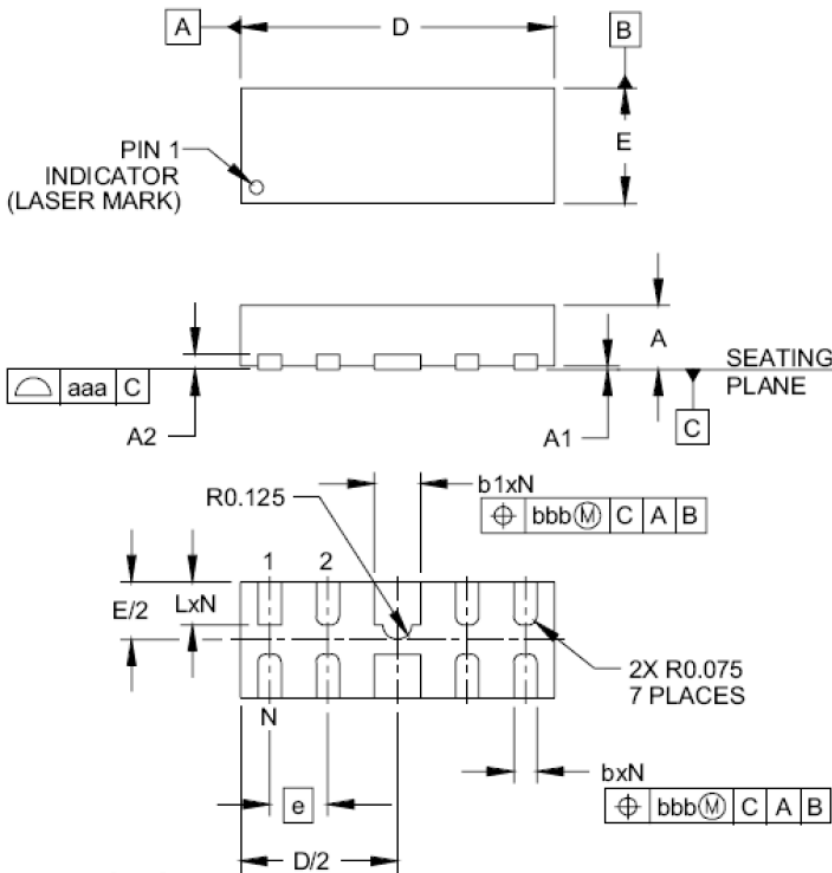
Normalized Capacitance vs. Reverse Voltage



Insertion Loss S21 - I/O to GND



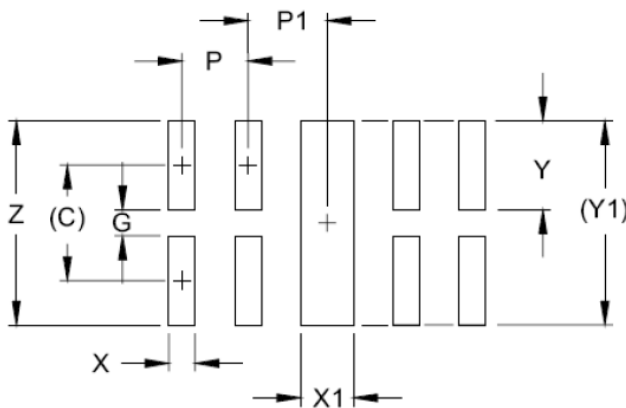
DFN2510-10 PACKAGE OUTLINE:



DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.020	.023	.026	0.50	0.58	0.65
A1	0.00	.001	.002	0.00	0.03	0.05
A2	(.005)			(0.13)		
b	.006	.008	.010	0.15	0.20	0.25
b1	.014	.016	.018	0.35	0.40	0.45
D	.094	.098	.102	2.40	2.50	2.60
E	.035	.039	.043	0.90	1.00	1.10
e	.020 BSC			0.50 BSC		
L	.012	.015	.017	0.30	0.38	0.425
N	10			10		
aaa	.003			0.08		
bbb	.004			0.10		

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).



DIM	DIMENSIONS	
	INCHES	MILLIMETERS
C	(.034)	(0.875)
G	.008	0.20
P	.020	0.50
P1	.020	0.50
X	.008	0.20
X1	.016	0.40
Y	.027	0.675
Y1	(.061)	(1.55)
Z	.061	1.55

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.