Elektronische Bauelemente

KS05UL5-C

30W, 5V

Ultra Low Capacitance ESD Protection Array

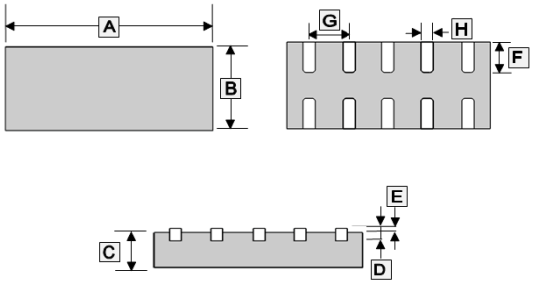
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

KS05UL5-C is an ultra-low capacitance TVS designed to protection for high-speed data interfaces. With typical capacitance of 0.2pF only, KS05UL5-C is designed to protest parasitic-sensitive systems against over-voltage and over-current transient events.

KS05UL5-C uses ultra-small DFN2510 package. Each KS05UL5-C device can protect four high-speed data lines. The combined features of ultra-low capacitance, ultra-small size and high ESD robustness make KS05UL5-C ideal for high-speed data ports and high-frequency lines (e.g., HDMI &DVI) applications. The low clamping voltage of the KS05UL5-C guarantees a minimum stress on the protected IC.

DFN2510

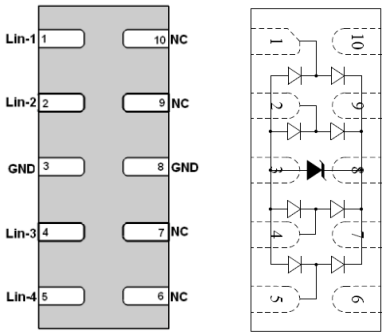


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.40	2.60	E	0.00	0.05
B	0.90	1.10	F	0.30	0.40
C	0.55TYP.		G	0.500 BSC.	
D	0.150 REF.		H	0.15	0.25

APPLICATIONS

- PCI Express
- Desktops, Servers and Notebooks
- MDDI Ports
- USB 2.0/3.0 Power and Data Line Protection
- Display Ports
- High Definition Multi-Media Interface(HDMI)
- Digital Visual Interface(DVI)

Pin Diagram



MARKING

0524P

PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN2510	3K	7 inch

ORDER INFORMATION

Part Number	Type
KS05UL5-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Value	Unit
IEC 61000-4-2 (ESD)	Air Contact	V_{ESD}	±25	kV
	Contact Discharge		±20	
Peak Pulse Power @tp=8/20us		P_{PP}	60	W
Operating & Storage Temperature Range		T_J, T_{STG}	-55~125, -55~150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}	Any I/O pin to GND	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA Any I/O pin to GND	6	-	9	V
Reverse Leakage Current	I_R	V_{RWM}=5V Any I/O pin to GND	-	-	1	μA
Clamping Voltage @tp=8/20us	V_C	I_{PP}=1A Any I/O pin to GND	-	-	10	V
		I_{PP}=4A Any I/O pin to GND	-	-	15	
TLP Clamping Voltage	V_{CTLP}	I_{PP}=8A, Between I/O and GND IEC61000-4-2 Level 2 equivalent (±4kV Contact, ±8kV Air)	-	16	-	V
		I_{PP}=16A, Between I/O and GND IEC61000-4-2 Level 4 equivalent (±8kV Contact, ±16kV Air)	-	23	-	
Parasitic Capacitance	C_{ESD}	V_R=0, f=1MHz Between I/O and I/O	-	0.4	0.5	pF
		V_R=0, f=1MHz Between I/O and I/O	-	0.2	0.3	

Note:
1. I/O pins are pin 1,2,4,5, GND pins are pin 3,8.

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Power Derating Curve

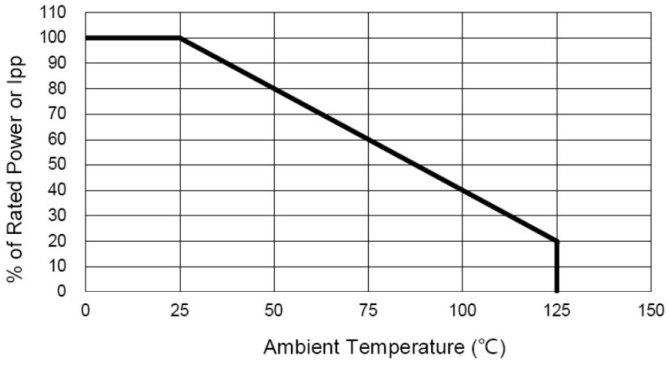
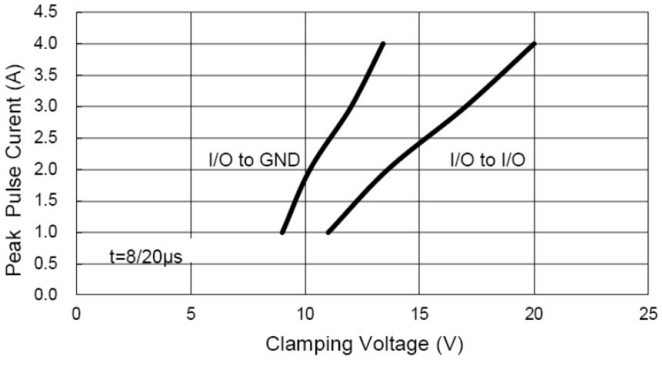


Fig 2 Clamping Voltage vs Peak Pulse Current



ELECTRICAL CHARACTERISTICS CURVE

Fig 3 Voltage Sweeping of I/O to I/O

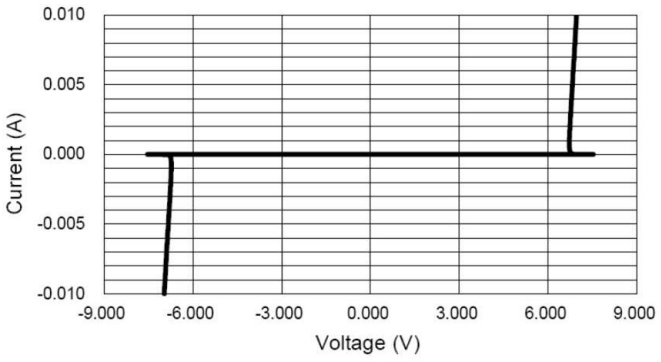


Fig 4 Voltage vs Capacitance

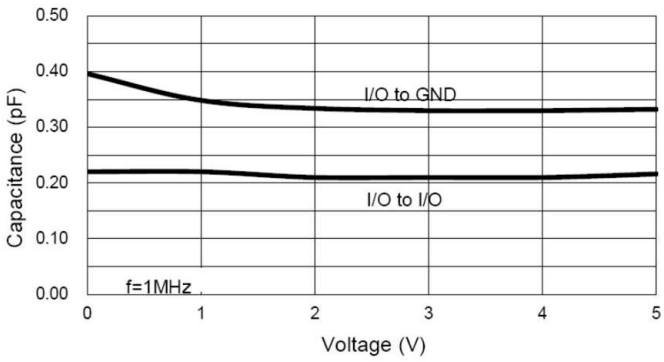


Fig 5 ESD Clamping of I/O to GND
(+8kV Contact per IEC 61000-4-2)

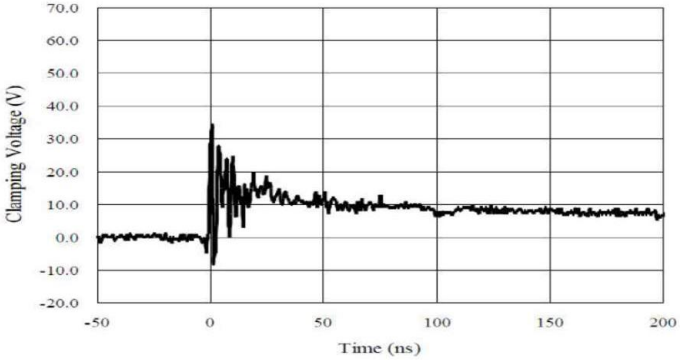


Fig 6 ESD Clamping of I/O to GND
(-8kV Contact per IEC 61000-4-2)

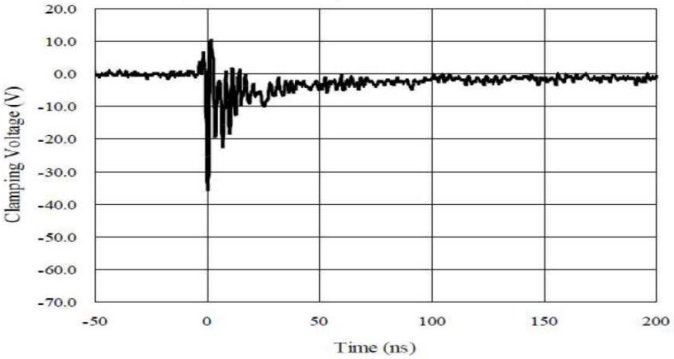


Fig7 Transmission Line Pulsing (TLP) Measurement