ESD1403M4Q-EVL

ULTRA LOW CAPACITANCE ESD PROTECTION

VENKEL LTD.

PART NUMBER	PACKAGE	VOLTAGE
ESD1403M4Q-□VL E = 7" Embossed T&R (5,000) U = 13" Embossed T&R (12,000)	DFN2510-10L	3.3V

FEATURES:

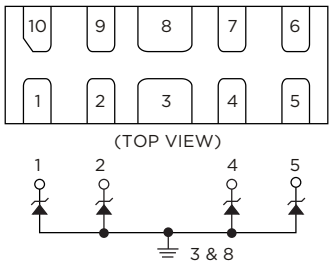
- IEC61000-4-2(ESD) : ±18kV Air, ±15kV Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 3A(8/20μS)
- Low leakage current, maximum of 50nA at rated voltage
- Ultra low capacitance
- Low clamping voltage

MECHANICAL DATA:

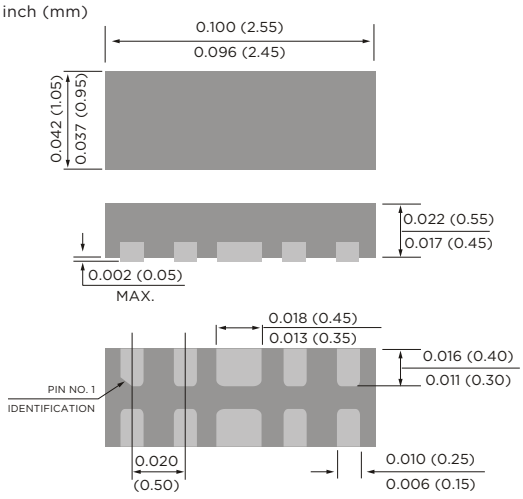
- Case: DFN2510-10L, Plastic

APPLICATIONS:

- USB Type-C Interface
- HDMI Interface 2.0 version
- V-By-One Interface
- LVDS Interface
- Display Port Interface



DFN2510-10L



MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNITS
ESD IEC61000-4-2(Air) ESD IEC61000-4-2(Contact)	V_{ESD}	±18 ±15	kV
Operating Junction Temperature Range	T_J	-55 to +150	˚C
Storage Temperature Range	T_{STG}	-55 to +150	˚C

ENVIRONMENTAL INFORMATION

RoHS Status	10 of 10 Compliant
REACH Status	Compliant
Halogen Status	Halogen Free
Conflict Mineral Status	Conflict Mineral Free
Moisture Sensitivity Level (MSL)	1

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Reverse Stand-Off Voltage	V_{RWM}(1)	-	-	-	3.3	V
Reverse Breakdown Voltage	V_{BR}	I_{BR} = 1mA	4	-	-	V
Reverse Leakage Current	I_R	V_R=3.3V	-	-	50	nA
Clamping Voltage	V_{CL}	I_{PP} = 1A, t_P = 8/20μs	-	-	9	V
		I_{PP} = 3A, t_P = 8/20μs		-	13	
Clamping Voltage TLP	V_{CL}(2)	I_{PP} = 8A, t_P = 100ns	-	15	-	V
		I_{PP} = 16A, t_P = 100ns		22	-	
Dynamic Resistance	R_{DYN}	t_P = 100ns	-	0.88	-	Ω
Off State Junction Capacitance	C_J	0Vdc Bias f = 1MHz, any I/O pins to GND	-	-	0.4	pF
		0Vdc Bias f = 1MHz, between any I/O pins	-	-	0.2	pF

NOTES:

1. A transient suppressor is selected according to the working peak reverse voltage(V_{RWM}), which should be equal to or greater than the DC or continuous peak operation voltage level.
2. Testing using Transmission Line Pulse (TLP) conditions: Z_0 = 50Ω, t_P = 100 ns.

ELECTRICAL CHARACTERISTIC CURVES

Fig.1 Typical Junction Capacitance

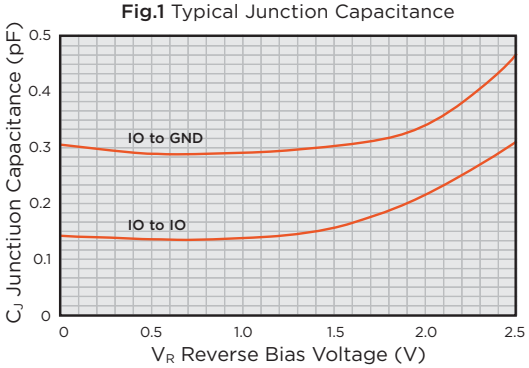


Fig.2 Transmission Line Pulsing (TLP) Measurement

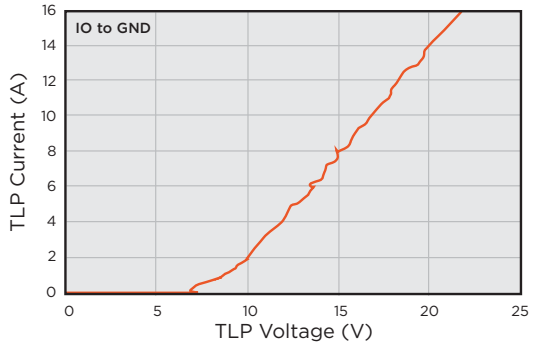


Fig.3 Typical Peak Clamping Voltage (8/20µs)

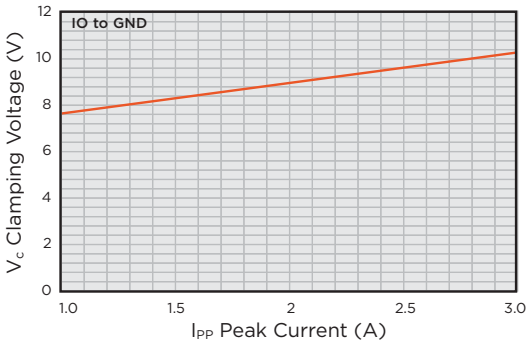
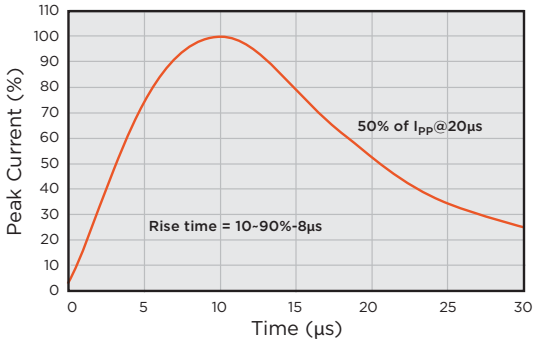
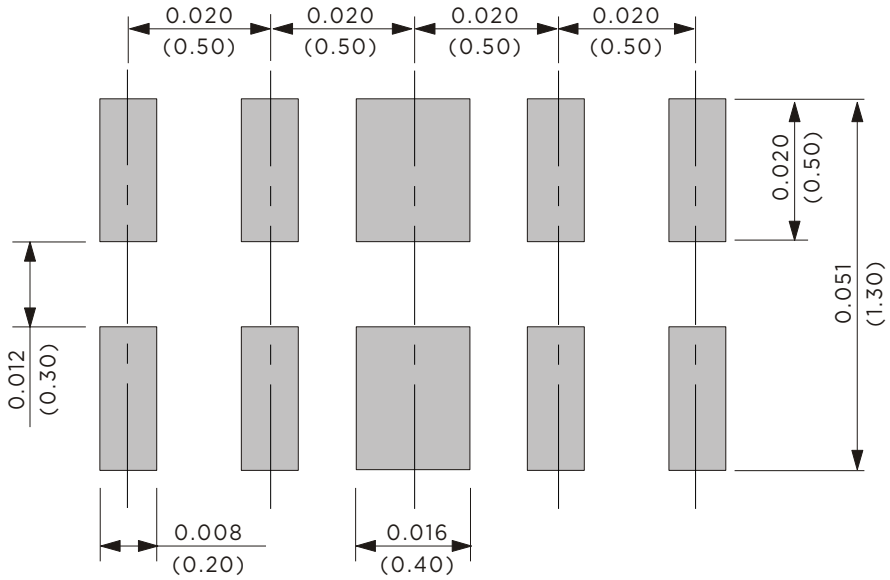


Fig.4 8/20µs Pulse Waveform



MOUNTING PAD LAYOUT

Units: inch (mm)