ElecSuper

SuperESD - ESDA7P60-1U1M

1. Description

The ESDA7P60-1U1M ESD protector is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers, and PDA's. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, lower operating voltage, lower clamping voltage and no device degradation when compared to MLVs. The ESDA7P60-1U1M protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 1500W Peak pulse Power (8/20us)

- RoHS compliance
- Unidirectional configuration
- Low clamping voltage
- Working voltage: 5V

3. Applications

- Cell phone handsets and accessories
- Personal digital assistants
- Cordless phones

- Notebooks, desktops, and servers
- Portable instrumentation
- Digital cameras

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
ESDA7P60-1U1M	DFN1610-2L	|HA	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1   Ordering information

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5. Pin Configuration and Functions
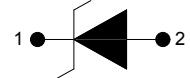
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO	Marking	
2	GND	Connect to GND		

<div align="center">Table-2   Pin configuration</div>

6. Specification

6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	1500	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		Refer to Table-5	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±30	kV
Junction temperature	T_J	-	150	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

<div align="center">Table-3   Absolute Maximum rating</div>

6.2. Electrical Characteristics

| Symbol	Description
V_{RWM}	Rated reverse stand-off voltage
V_{BR}	Minimum breakdown voltage @I_T = 1mA
V_{CL}	Clamping voltage
I_{PP}	Maximum peak pulse current
I_R	Reverse leakage current @V_{RWM}
C_O	Typical line capacitance (V_{IO}=0V, V_{P-P} = 30mV, f = 1MHz)

Table-4　　Parameters Description

At TA = 25℃ unless otherwise noted

Part Number	V_{RWM} (Max.)	V_{BR}(Min.)	V_{CL}@I=1A (Typ.)	I_{PP} (Max.)	V_{CL}@I=I_{PP} (Typ.)	I_R (Max.)	C_O(Typ.)
	(V)	(V)	(V)	(A)	(V)	(uA)	(pF)
ESDA7P60-1U1M	5.0	6.0	7.0	100	10.0	1.0	1000

Table-5　　Electrical Characteristics for All Series

7. Typical Characteristic

Non-repetitive peak pulse power vs. pulse time

8/20us curve

T1= 1.25T = 8±20% us
T2= 20±20% us
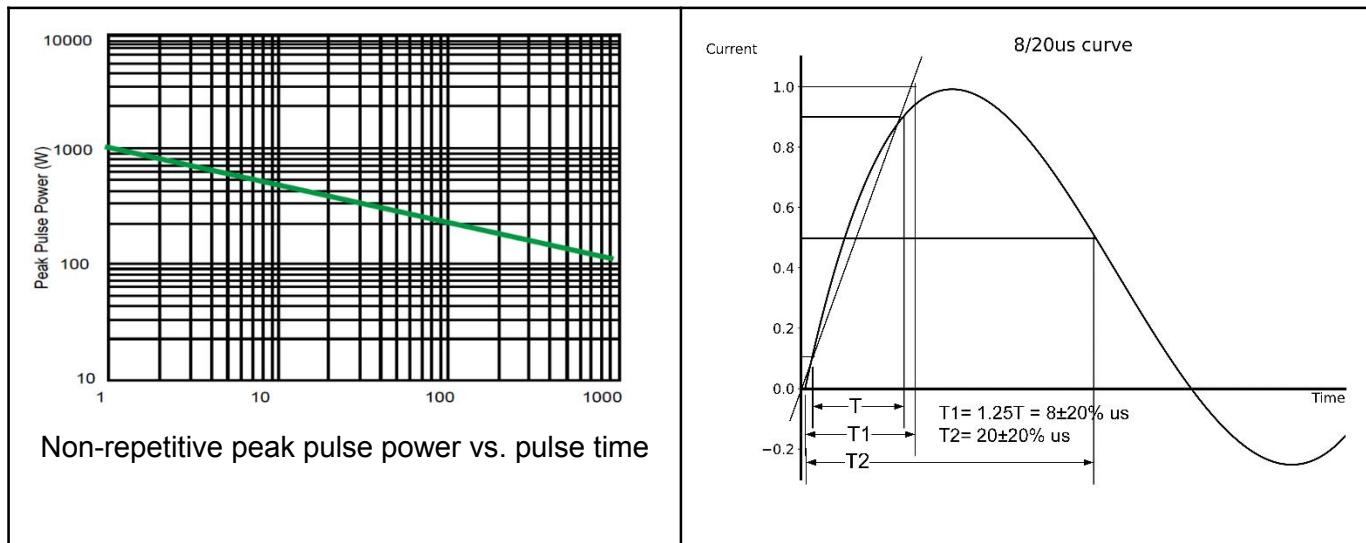
8. Typical Application

ESDA7P60-1U1M
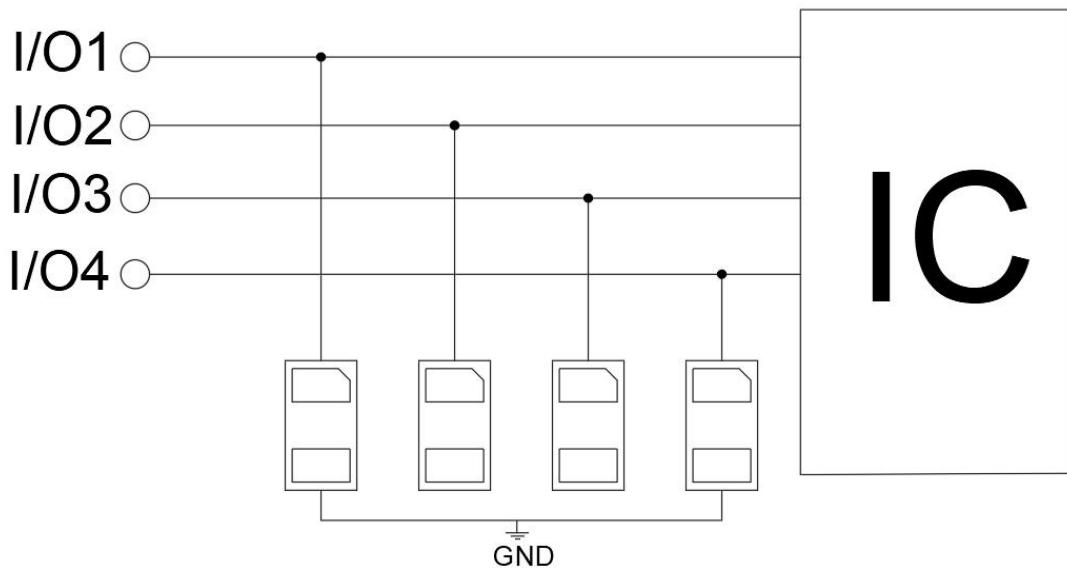
Pic-3 Typical Interface Application

9. Dimension
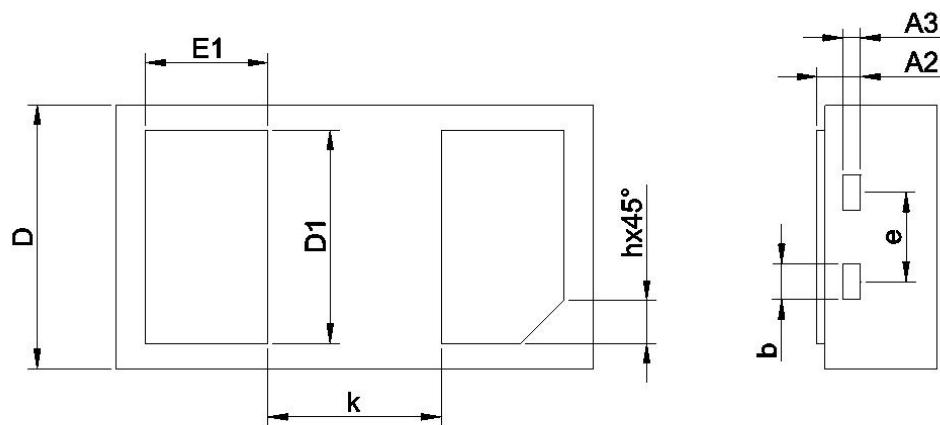
DFN1610-2L
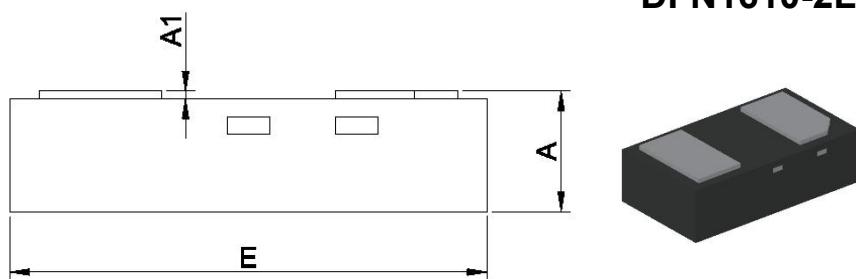
SYMBOL	MIN	NOM	MAX
A	0.400	0.450	0.500
A1	0.000	0.020	0.050
A2	0.077	0.127	0.177
A3	0.0635 BSC		
b	0.100	0.150	0.200
D	0.950	1.000	1.050
D1	0.750	0.800	0.850
E	1.550	1.600	1.650
E1	0.350	0.400	0.450
e	0.400	0.450	0.500
h	0.150	0.200	0.250
k	0.650	0.700	/

Table-6   product dimensions

10. Recommended Land Pattern
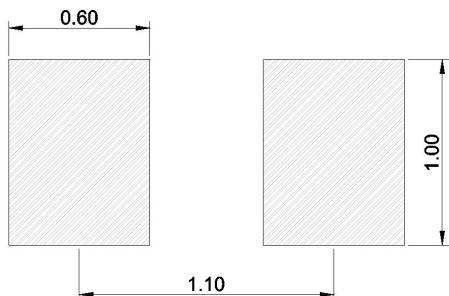
Note:
1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference only

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