

1. Description

The ESDA7P120-1U1M(ES) 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 ESDA7P120-1U1M(ES) 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
 - $\pm 30\text{kV}$ Contact Discharge
 - $\pm 30\text{kV}$ Air Discharge
- 1875W 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
ESDA7P120-1U1M(ES)	DFN1610-2L	HA	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

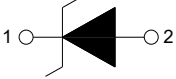
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	GND	Connect to GND		

Table-2 Pin configuration

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°C	P _{pk}	-	1875	W
Peak pulse current (tp=8/20us)@25°C	I _{PP}		125	A
ESD (IEC61000-4-2 air discharge) @25°C	V _{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V _{ESD}	-	±30	kV
Junction temperature	T _J	-	150	°C
Operating temperature	T _{OP}	-40	125	°C
Storage temperature	T _{STG}	-55	150	°C
Lead temperature	T _L	-	260	°C

Table-3 Absolute Maximum rating

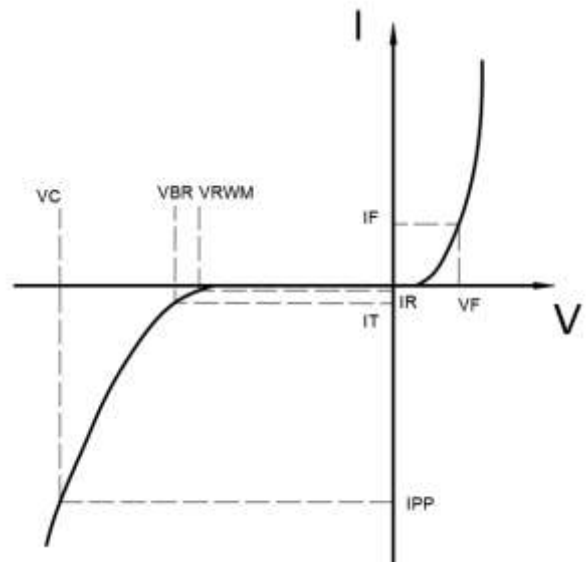
6.2. Electrical Characteristics

At TA = 25°C unless otherwise noted

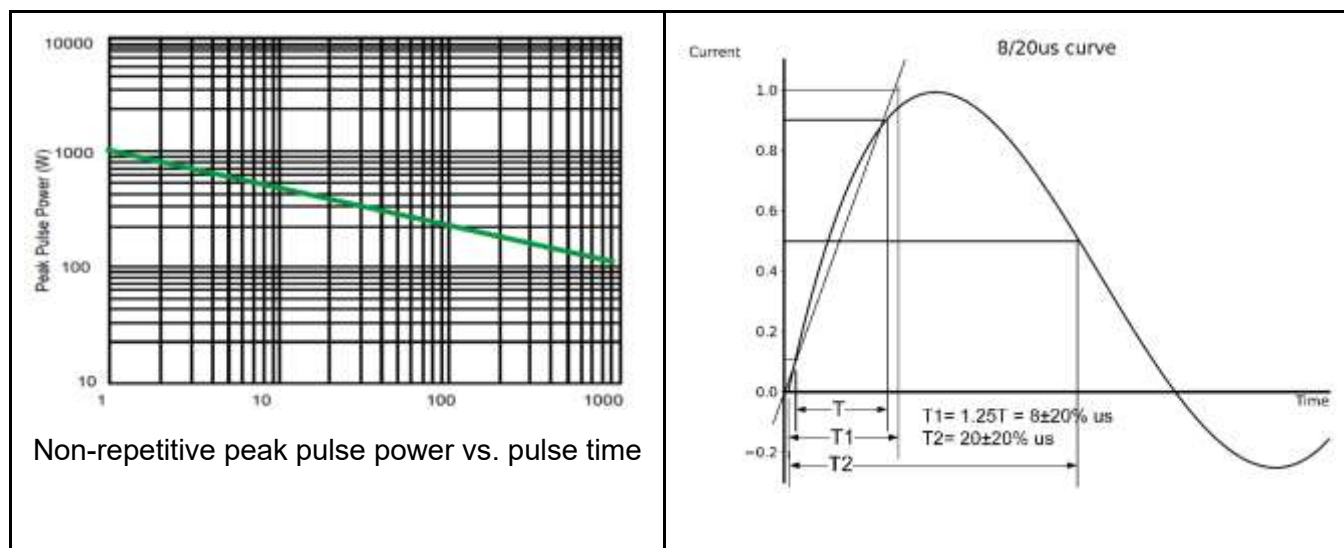
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	6.0			V
Reverse Leakage Current	I_R	$V_{RWM}=5.0V$			1.0	uA
Clamping Voltage	V_C	$I_{PP}=1A$; $t_p=8/20us$		7.0	9.0	V
Clamping Voltage	V_C	$I_{PP}=125A$; $t_p=8/20us$		12.0	15.0	V
Junction Capacitance	C_J	IO-GND, $V_R=0V$; $f=1MHz$		1400	1500	pF

Table-4 Electrical Characteristics

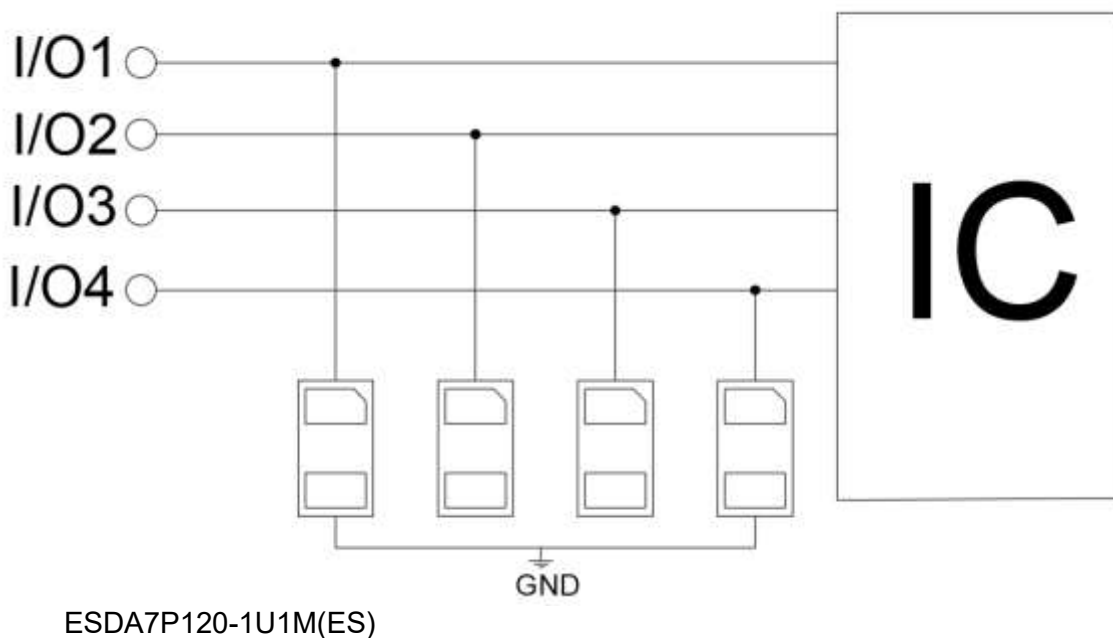
Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F



7. Typical Characteristic



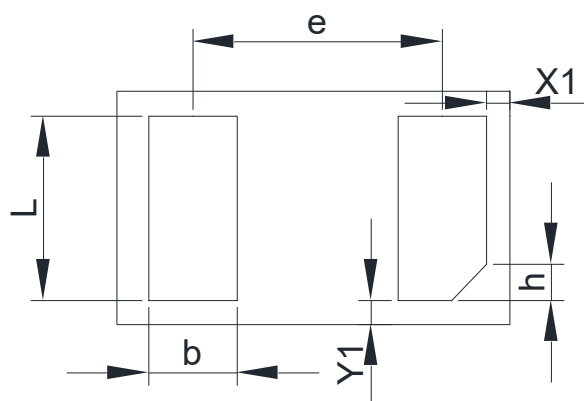
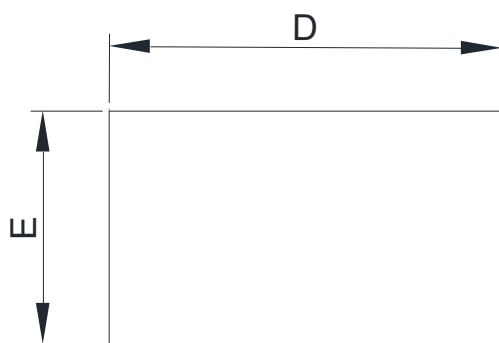
8. Typical Application



Pic-3 Typical Interface Application

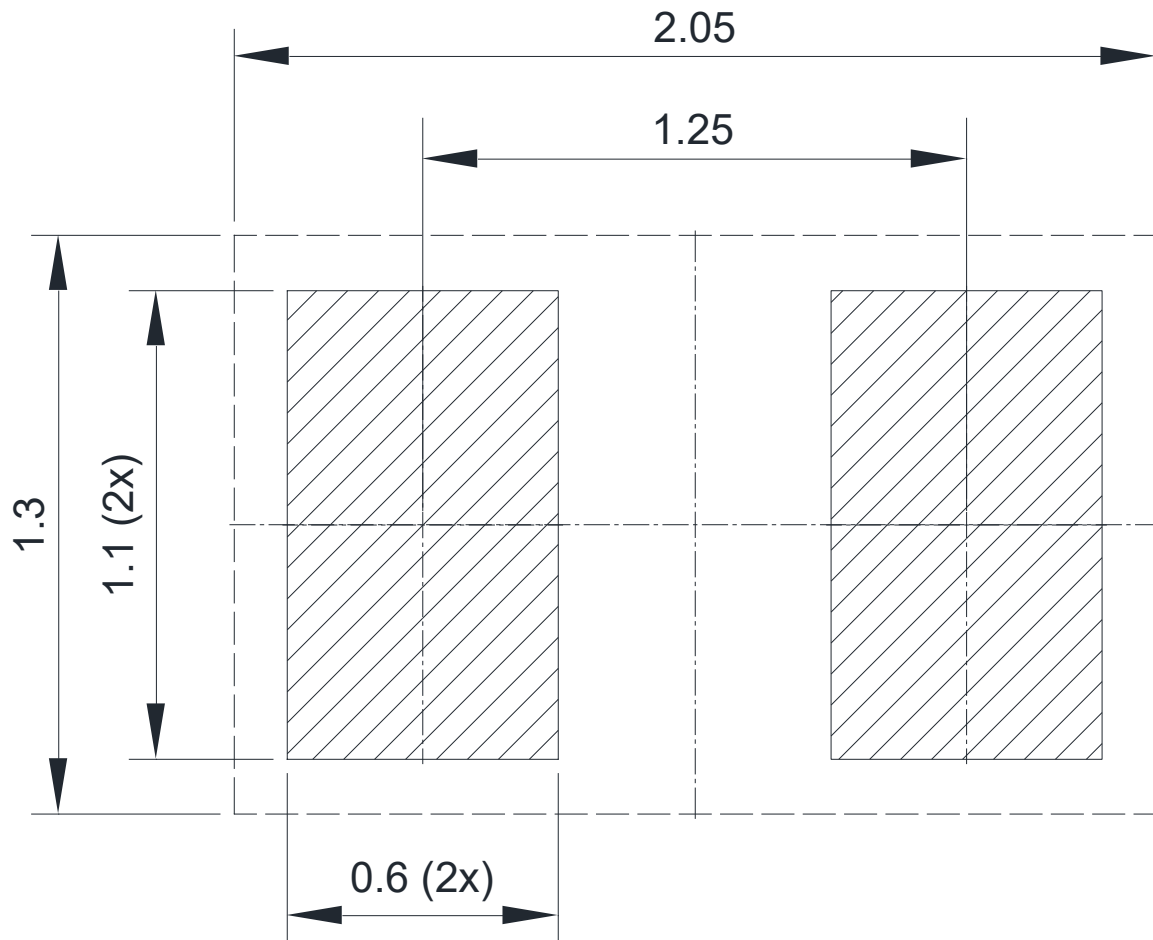
9. Dimension

POD (A)



SYMBOL	MIN (mm)	NOM (mm)	MAX (mm)
A	0.45	0.50	0.55
h	0.15	0.20	0.25
D	1.55	1.60	1.65
E	0.95	1.00	1.05
L	0.75	0.80	0.85
b	0.35	0.40	0.45
e	1.10BCS		
X1	0.020		0.085
Y1	0.065		0.135

10. Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS

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