

ESD Protector PESD1206Q-140

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Document: SCD 26108
Status: Released
Rev. G Date: November 30, 2006

TYPICAL DEVICE RATINGS AND CHARACTERISTICS

	Continuous Max Operating Voltage	Typical IEC Trigger Voltage ¹	Typical IEC Clamping Voltage ¹ after 30ns	Typical TLP Trigger Voltage ²	Typical TLP Clamping Voltage ² after 30ns	Typical Capacitance ³ @ 1 MHz, 1V _{rms}	Typical Leakage Current @14V _{DC}	Max Leakage Current @14V _{DC}
Symbol	V _{DC}	V _{T(IEC)}	V _{C(IEC)}	V _{T(TLP)}	V _{C(TLP 30)}	C _p	I _{L(Typ)}	I _{L(MAX)}
Unit	V	V	V	V	V	pF	μA	μA
Value	14	475	60	530	66	0.29	<0.001	0.01

Note 1: IEC61000-4-2, level 4, 8kV contact test method

Note 2: TLP test method at 1000V (refer to graph on next page)

Note 3: Typical capacitance @ 0V, 14V bias

GENERAL CHARACTERISTICS

Storage temperature: -55°C ... +110°C

Operating temperature: -55°C ... + 110°C

ESD voltage capability (tested per IEC 61000-4-2)

- Contact discharge mode: typical 8kV, max 15kV
- Air discharge mode: typical 15kV, max 25kV

ESD pulse withstand: Minimum 1000 pulses (tested per IEC 61000-4-2, level 4, contact method)

Environmental Specifications

	Bias Humidity Tes	Thermal	Bias Heat Test	Bias Low Temp Tes	Solderability	Solder Heat	Vibratio	Solven Resistance
Test Conditions	85°C, 85% RH, MAX V _{DC} , 1000 hrs	-40°C to 85°C, 30 min dwell, 5 cycles	110°C MAX V _{DC} , 1000 hrs	- MAX V _{DC} , 1000 hrs	230°C ± 5°C, 3 ±	260°C, 10s	10 to 50Hz, 60s cycle, 2hrs each in X-Y-Z-direction	IPA ultrasonic 300
Pass / Fail Criteria	I ≤ μA	I ≤ μA	I ≤ μA	I ≤ μA	95% coverage	90% coverage	No Physical Damag	No Physical Damag

Additional test conditions

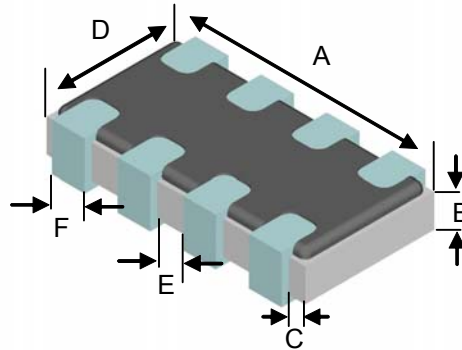
1. For Bias Humidity Test conditions of 3V, at 40 °C, 90% RH, leakage current was measured to be <1nA.
2. For Bias Heat Test conditions of 3V, at 60 °C, leakage current was measured to be <1nA.
3. For Bias Heat Test conditions of 3V, at -20 °C, leakage current was measured to be <1nA.
4. For 5 temperature cycle test conditions from -20 °C to 60 °C, leakage current was measured to be <1nA.

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DIMENSIONS



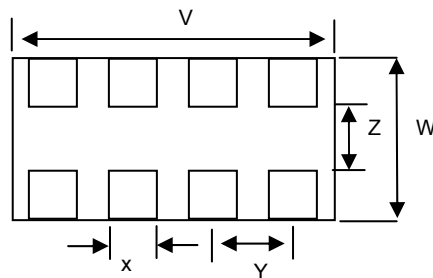
Drawing Not To Scale

	Length A		Height B		End Terminal Width C		Width D		Width E		Width F	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
mm:	3.0	3.4	0.4	0.6	0.1	0.3	1.4	1.8	0.2	0.6	0.2	0.6
in*:	(0.118)	(0.134)	(0.016)	(0.024)	(0.004)	(0.012)	(0.055)	(0.071)	(0.008)	(0.024)	(0.008)	(0.024)

*Rounded off approximation

RECOMMENDED LAND PATTERN:

Solder thickness 0.15 to 0.2mm



	V Ref	W Ref	X Ref	Y Ref	Z Ref
mm:	3.2 ± 0.2	2.2 ± 0.2	0.50 ± 0.1	0.8 ± 0.2	1.0 ± 0.1
in*:	(0.13 ± 0.008)	(0.10 ± 0.008)	(0.02 ± 0.004)	(0.03 ± 0.008)	(0.04 ± 0.004)

*Rounded off approximation.

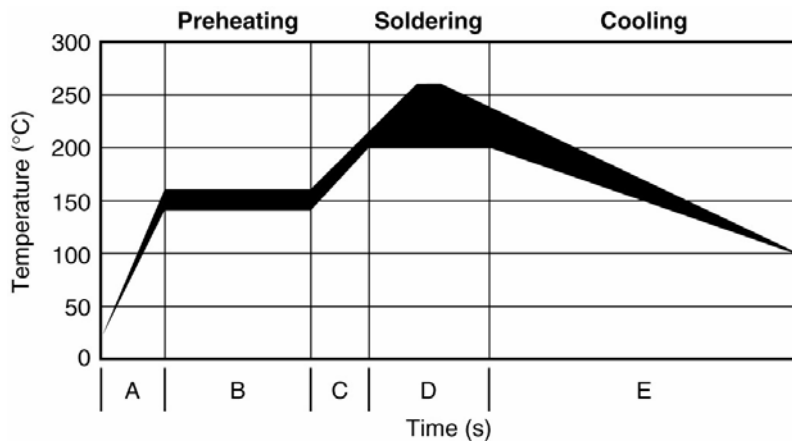
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SOLDER REFLOW RECOMMENDATIONS:

A	Temperature ramp up 1	From ambient to Preheating temperature	30s to 60s
B	Preheating	140°C - 160°C	60s to 120s
C	Temperature ramp up 2	From Preheating to Main heating temperature	20s to 40s
D	Main heating	at 200°C at 220°C at 240°C at 260°C	60s ~ 70s 50s ~ 60s 30s ~ 40s 5s ~ 10s
E	Cooling	From main heating temperature to 100°C	max 4°C/s



PACKAGING

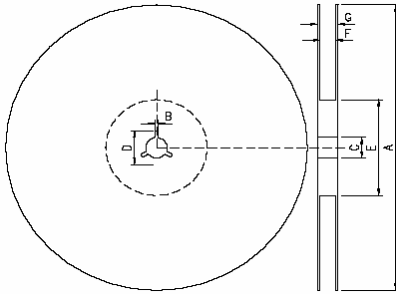
Packaging	Tape & Reel	Standard Box
PESD1206Q-140	5,000	25,000

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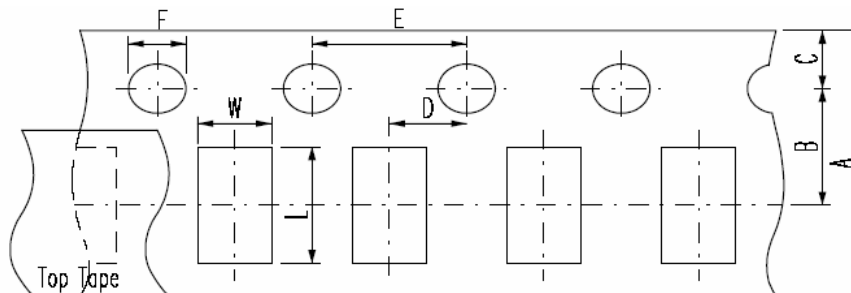
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EIA referenced Reel Dimensions for PESD Devices



Reel Dimensions (mm):

	A	B	C	D	E	F	G
1206 Devices	178.0 ±2.0	2.0 ±0.5	13.0 ±0.5	21.0 ±0.8	62.0 ±1.5	9.0 ±0.5	13.0 ±1.0



Carrier Dimensions (mm):

	A	B	C	D	E	F	L	W	T ¹
1206 Devices	8.0 ±0.3	3.5 ±0.05	1.75 ±0.1	2.0 ±0.05	4.0 ±0.1	1.5 ±0.1	3.5 ±0.2	1.9 ±0.20	0.75 ±0.05

Product Orientation – always face up (meaning the substrate is at the bottom), but parts do not have polarity mark.

POST REFLOW, CLEANING CONDITIONS

A 5% saponifier combined with water during wash.

For Ultrasonic process water temperature should be at 50°C and board should be submerged for a minimum of one minute in the solutions, then rinse and dry.

For in-line washing, the temperature of the water sprayed should be at 110°C, rinse and drying is done in-line.



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Raychem
Overvoltage Devices

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