SOCAY

HF RoHS

ESD Array

ESDP020604V12B1

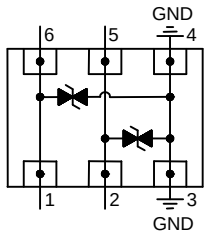
Description

This specification is applied to protect sensitive electronic circuits from the threat of electrostatic discharge (ESD). The function meets with the requirement of IEC61000-4-2 specification. The extreme low capacitance is suit for HDMI ESD protection application. According to the special property of device, we recommend not to use on such application as: DC/AC power line.

Features

- RoHS compliant, Lead-Free
- Protection against ESD voltages and currents (IEC 61000-4-2 Level 4)
- Extremely quick response time (<1ns) present ideal ESD protection
- Extremely low capacitance (0.1pF typical)
- Extremely low leakage current
- Surface mount device
- Zero signal distortion

Equivalent Circuits



Pin	Identification
1,6	Data Lines
2,5	Data Lines (No Internal Connection)
3,4	Ground

Applications

- Antenna circuit
- USB2.0
- IEEE-1394
- DVI
- HDMI

Product Model

- Digital Video Equipment
- Mobil Phone
- GPS Antenna
- Bluetooth Communication Equipment

Electrical Characteristics

Characteristic	Value
Rate Voltage V_{DC} (Max)	12V
Leakage Current I_L (Max) (@12VDC)	0.01μA
Trigger Voltage V_T	300V Typical
Clamping Voltage V_C	30V Typical
Capacitance, @1MHz C_P	0.1pF Typical
Response Time	<1ns
ESD Voltage Capability, IEC61000-4-2 Contact Discharge Mode	8KV
ESD Voltage Capability, IEC61000-4-2 Air Discharge Mode	15KV
ESD Withstand Pulses	1000 Typical

C_P - Device Capacitance measured with 1Vrms

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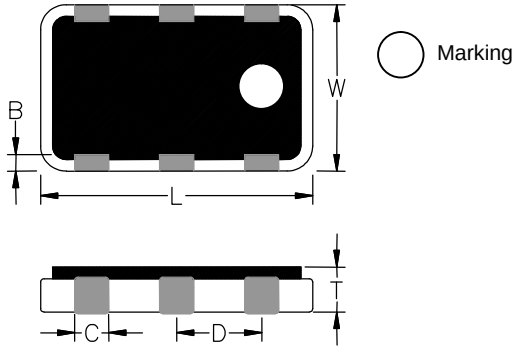
Explanation of Part Number

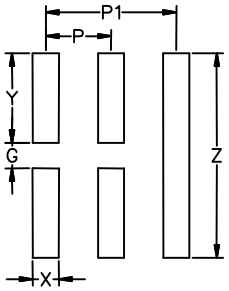
ESDP 02 0604 V12 B1

- B1, Mode Code
- Max Rated Voltage V_{DC}, V12=12V
- Chip Size, 0604 = 0604 (EIA)
- Channels, 02 = 2 channels
- Series Type: Polymer ESD Suppressors

Construction & Dimensions Unit: mm

End termination	Ag / Ni / Sn





Recommended pad outline

Symbol	Spec.
L	1.60±0.10
W	1.00±0.10
T	0.55±0.10
B	0.20±0.10
C	0.20±0.05
D	0.50±0.05
P	0.5
P1	1.0
X	0.2
Y	0.7
Z	1.6
G	0.2

Overcoat color: Block

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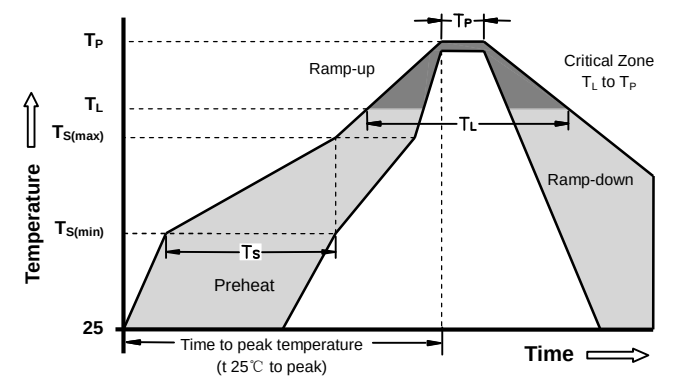
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Temperature Specifications

Parameter		Value	Unit
Operating Temperature		-55 to +125	°C
Storage Temperature		--55 to +125	°C
Taping Package Storage Condition	Storage Temperature	5 to 40	°C
	Relative Humidity	<65	%RH
	Storage Time	12 Max	Month

Soldering Parameters



Reflow Condition		Pb free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max ($T_{s(max)}$)	+200°C
	-Time (min to max) (T_S)	60 -180 Seconds
Average ramp up rate (Liquidus Temp T_L) to peak		3°C/Second Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/Second Max
Reflow	- Temperature (T_L) (Liquidus)	+217°C
	- Time (min to max) (T_L)	60 -150 Seconds
Peak Temperature (T_P)		260 +0/-5°C
Time within 5°C of actual peak Temperature (T_P)		20-40 Seconds
Ramp-down Rate		6°C/Second Max
Time 25°C to peak Temperature (T_P)		8 minutes Max

Precaution for soldering

Note that this product will be easily damaged by rapid heating, rapid cooling or local heating.

Do not give heat shock over 100°C in the process of soldering.

We recommend to take preheating and gradual cooling

Soldering gun procedure

Note the follows, in case of using solder gun for replacement.

1) The tip temperature must be less than 280 for the period within 3 seconds by using soldering gun under 30W

2) The soldering gun tip shall not touch this product directly.

Soldering volume

Note that excess of soldering volume will easily get crack the body of this product.

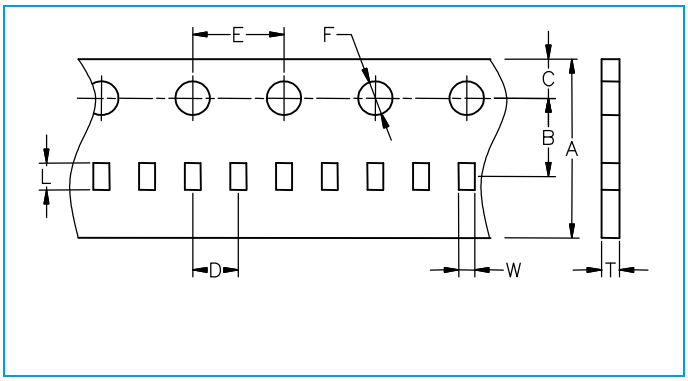
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Packaging Information

Carrier Tape Dimensions **Unit: mm**

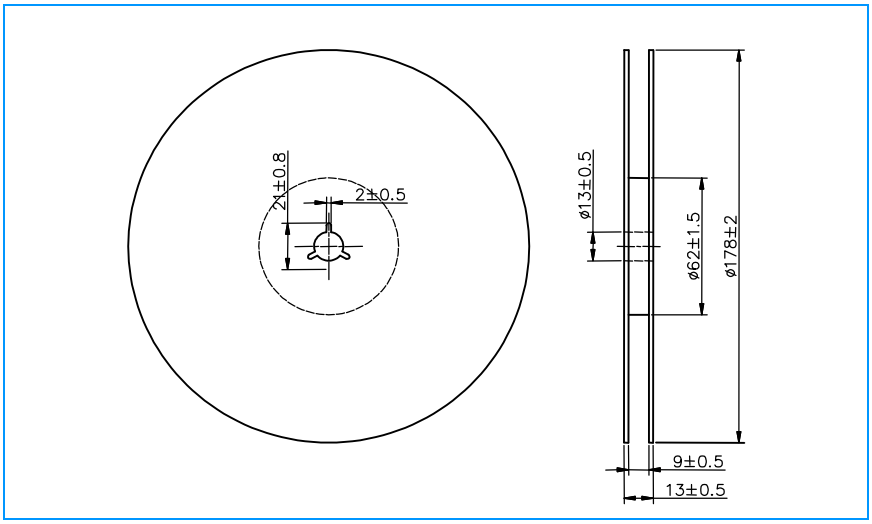


Symbol	Spec.
A	8.00±0.30
B	3.50±0.05
C	1.75±0.10
D	2.00±0.05
E	4.00±0.10
F	1.50±0.10
L	1.90±0.20
W	1.40±0.20
T	0.75±0.05

Packaging method

- Products shall be heat-sealed in the chip pocket, spacing pitch 2-mm of paper carrier tape with cover tape, and carrier tape shall be reeled to the reel.
- Tape material to be paper.
- Cover Tape adhesion to be 35±25 grams.

Taping Reel Dimensions **Unit: mm**



Taping Specifications

There Shall be the portion having no product in both the head and the end of taping, and there shall be the cover tape in the heat of taping.

Quantity of products in the taping package

Standard Quantity	5000PCS / Reel
Shipping quantity is a multiple of standard quantity	

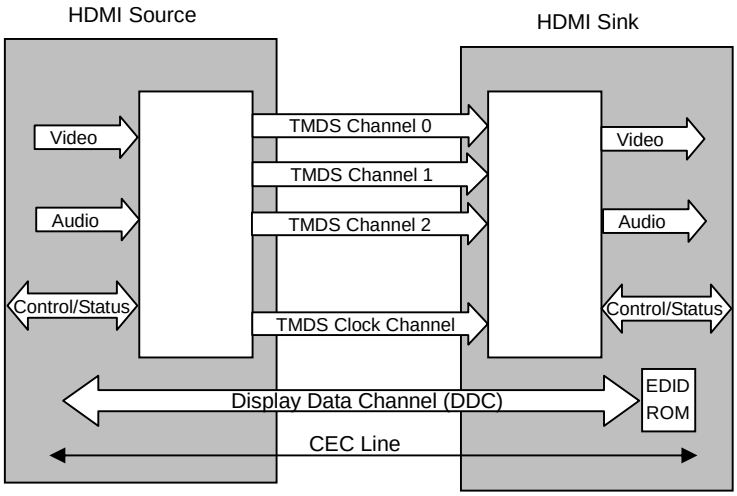
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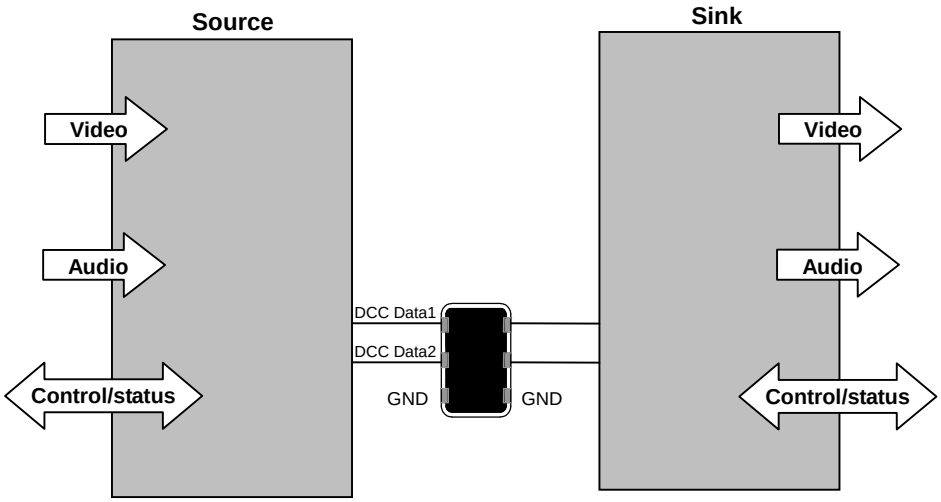
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HDMI Interface Application

HDMI Block Diagram





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