FEATURES

ESD protection for high speed data lines to IEC61000-4-2

ESD contact discharge typical 8KV, max 15KV

ESD air discharge typical 15KV, max 25KV

Surface mount

Extremely low capacitance

Very low leakage current

Fast response time

Bi-directional ESD protection

Lead free solder termination

The best ESD protection for high frequency, low voltage applications

0603

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Schematic Symbol
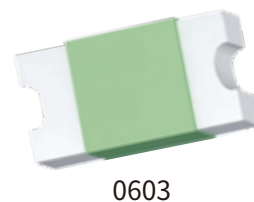
APPLICATIONS

USB3.0,Firewire,DVI,HDMI,S-ATA,Thunderbolt

Mobile HDMI Link,MDDI,MIPI,SWP/NFC

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MECHANICAL DATA

Case: 0603 (plastic package)

Molding Compound Flammability Rating:UL 94 V-0

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
-	Maximum Contact discharge voltage Per IEC61000-4-2	15KV	V
-	Maximum Air discharge voltage Per IEC61000-4-2	25KV	V
T_{OPER}	Maximum Operating temperature	-55 to +125	°C
T_{STG}	Maximum Storage temperature	-55 to +125	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

| Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_R	Rated Voltage	-	-	-	24	V
V_T	Trigger Voltage	IEC61000-4-2 8KV contact discharge	-	300	-	V
V_C	Clamping Voltage	IEC61000-4-2 8KV contact discharge	-	35	-	V
I_L	Leakage Current	DC 5V shall be applied on component	-	-	0.10	μA
C_P	Capacitance	$V_R = 0V, f = 1MHz$	-	0.05	-	pF

Note:
1、Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.
2、After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.

# ESD CLAMPING TEST
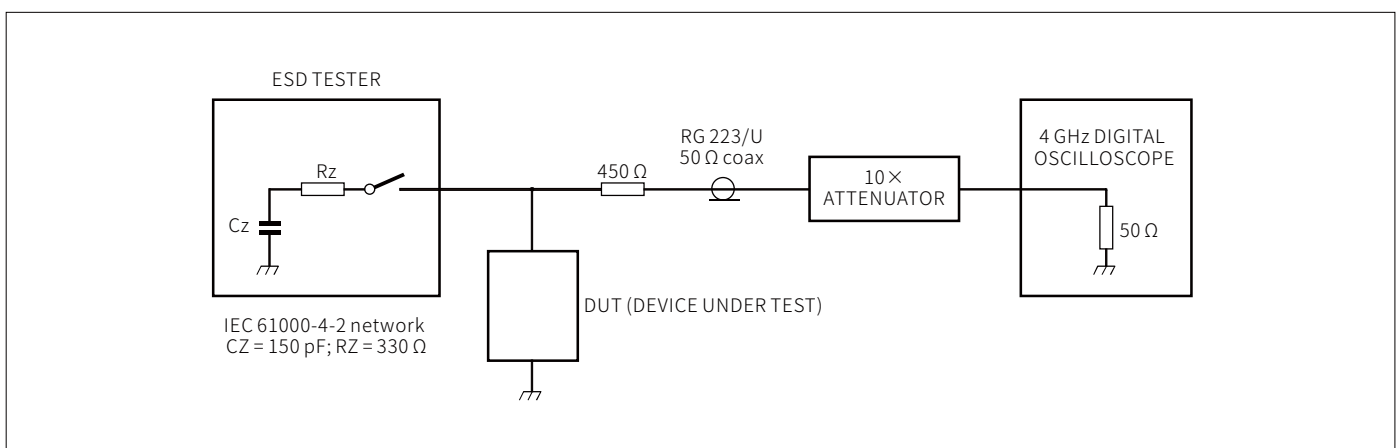
CHARACTERISTIC CURVES
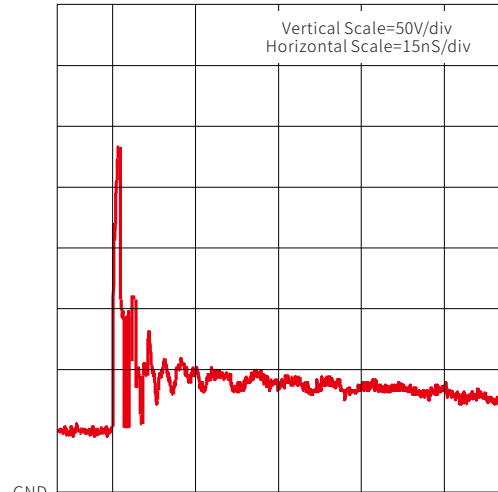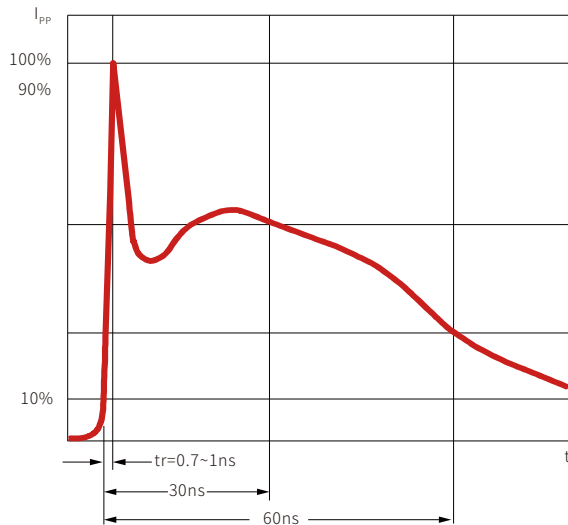
ESD CLAMPING TEST WAVEFORMS

SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
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°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.
Do not exceed		260°C
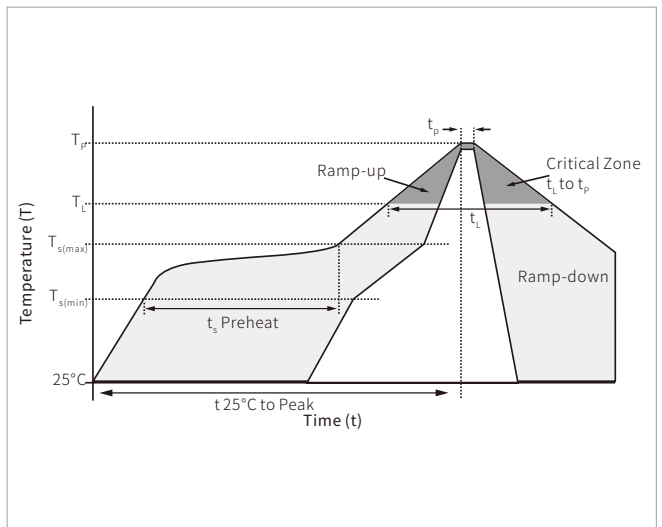
PACKAGE INFORMATION
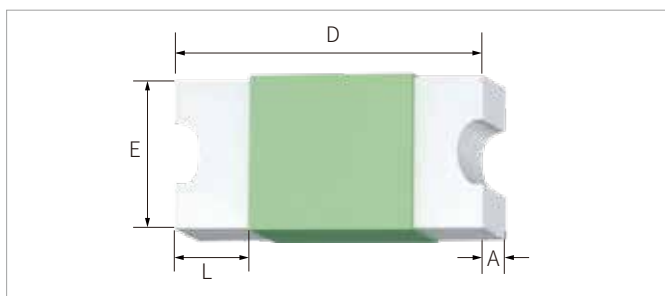
Ref.	Dimension			Unit
	Min.	Typ.	Max.	
D	1.45	1.60	1.75	mm
E	0.70	0.83	0.95	
L	0.20	0.35	0.50	
A	0.27	0.38	0.47	

RECOMMENDED PAD LAYOUT DIMENSIONS
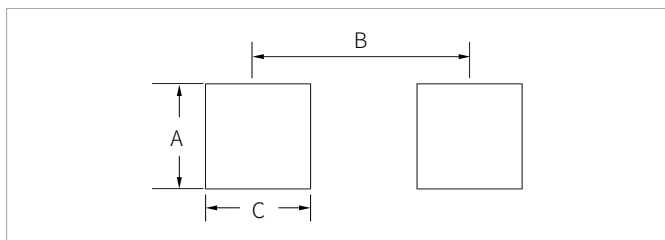
Ref.	Dimension	Unit
A	1.00	mm
B	1.35	
C	0.65	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SPE0603B24	0603	5000PCS	7"

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By QR Code

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