

1. Generals

- This specification covers the engineering requirements for the SBA0504ESD-350Y (Common Mode ESD Filter)

2. Features

- Effective for suppressing common mode noise and almost no effect for high speed differential data line
- Two common mode filters and four ESD suppression devices integrated
- Ultra low profile (1.27 x 1.00 x 0.60mm)
- Ceramic multilayer type SMD component
- Non-polarized product
- It is a product conforming to RoHS directive.
- 1210(0504) Multilayer array type

3. Applications

- LVDS lines in notebook computers
- USB2.0, UBS3.1 Gen 1, IEEE1394, DVI, HDMI lines in PDP, LCD TV, DVD Player, PC, Audio player, DSC
- MDDI, MIPI in mobile phone

4. Product specifications

4. 1 Part number code

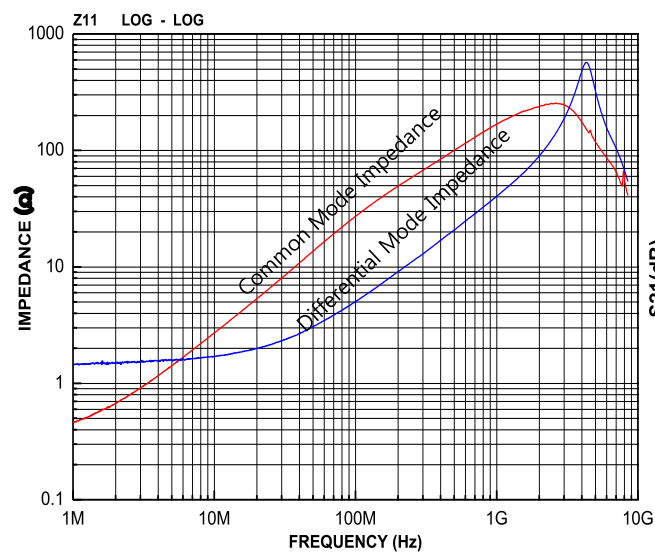
<u>SBA</u>	<u>0504</u>	<u>ESD</u>	<u>350</u>	<u>Y</u>
①	②	③	④	⑤

- ① Series name of Common Mode ESD Filter
- ② Dimensions, 1.27mm (L) x 1.0mm (W)
- ③ ESD Filter
- ④ Common Mode Impedance (at 100MHz), 350= 35Ω
- ⑤ Tolerance of common mode impedance, Y= ±25%

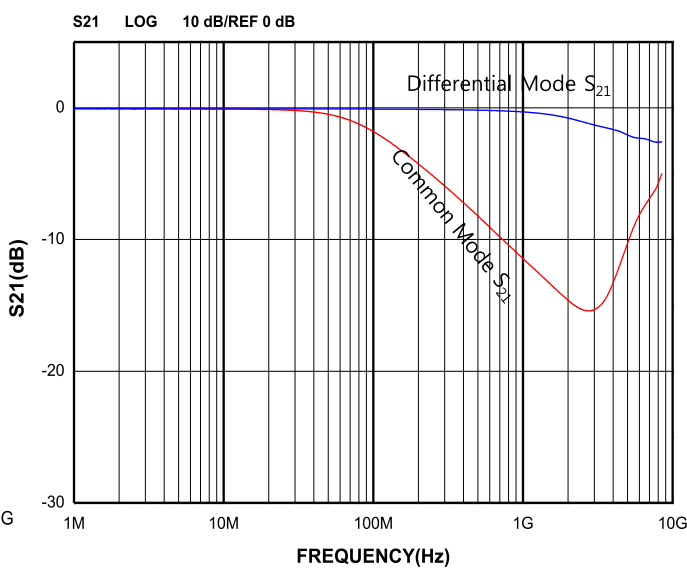
4. 2 Specification of electrical characteristics

Characteristics	Common Mode Impedance	Resistance	Leakage Current	Capacitance	Insulation Resistance	Rated Voltage	Rated Current
symbol	Z_{CM}	R_{DC}	I_L	C	IR_{CR}	V_R	I_R
Units	Ω	Ω	μA	pF	M Ω	Volt	mA
Test Condition	@100MHz	25°C±2°C	5V	0.5Vrms @1MHz	5V	25°C±2°C	25°C±2°C
Value	35(±25%)	Max 4.0	Max 1.0	Max 1.7	Min 10	5	Max100

- Impedance Curves



-Transmission characteristics (S-parameter)



4. 3 Operating Temperature

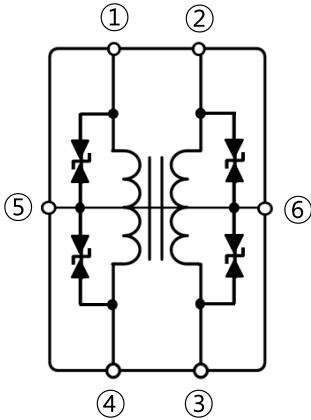
DESCRIPTION	REQUIREMENTS
Operating Temperature	-40°C ~ + 85°C (including self-temperature rise)

5. Equivalent Circuit & Recommended Foot print & Stencil mask

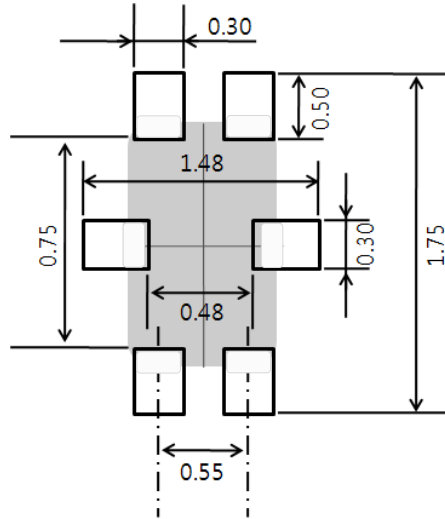
PIN NUMBER	DESCRIPTION
①~④	DATA LINE
⑤, ⑥	GROUND

Unit : mm

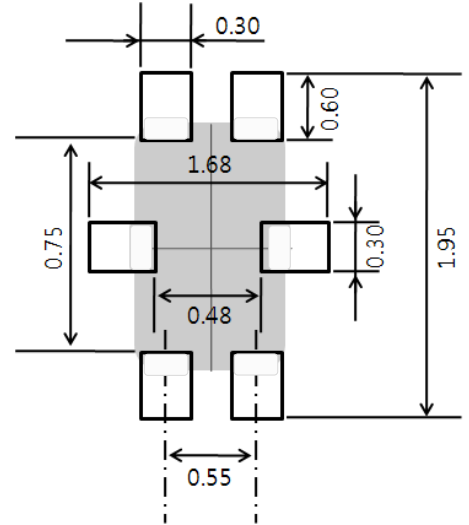
Stencil Mask T : 0.10mm



[Equivalent circuit]



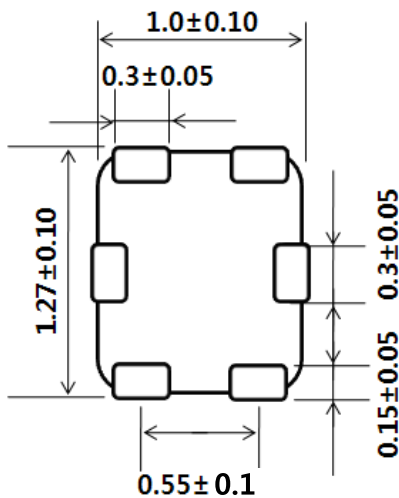
[Foot print]



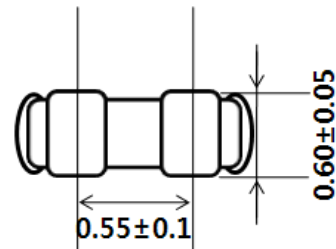
[Stencil Mask]

6. Appearance and Dimension

Unit : mm



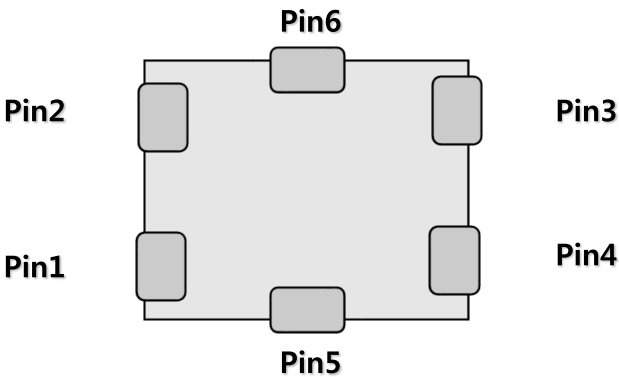
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7. Test method of Electrical property

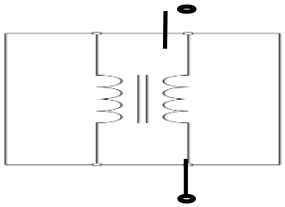
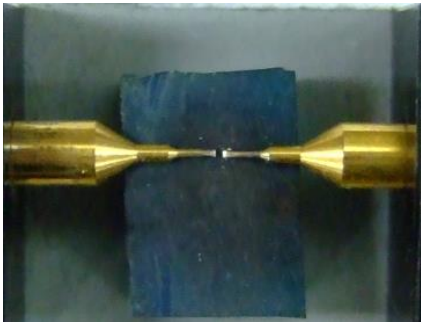
- PIN INDEX



ITEM	DESCRIPTION	SOURCE	EQUIPMENT
Rdc	Pin 1-4, 2-3	10mA DC Source	Source Meter
CM Impedance	Pin 1-2(Short) to Pin 3-4(Short)	500mV	LCR Meter (3GHz)
IL	Pin 5 or 6 to Pin 1, 2, 3, 4	5V DC Source	Source Meter
IR _{CR}	Pin1 -2 or Pin3-4	5V DC Source	Source Meter

7. 1 Rdc (Model: KEITHLEY 2400)

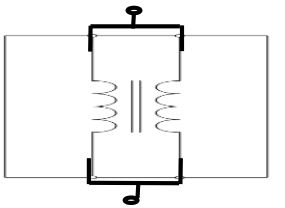
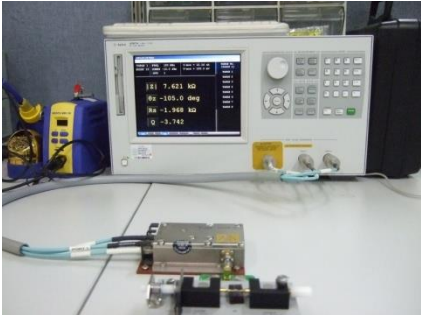
- Off power and On power.
- Press button 'Ω' of MEAS.
- Measure Rdc value using test fixture.



Terminal

7. 2 Common Mode Impedance (Model: Agilent 4287A)

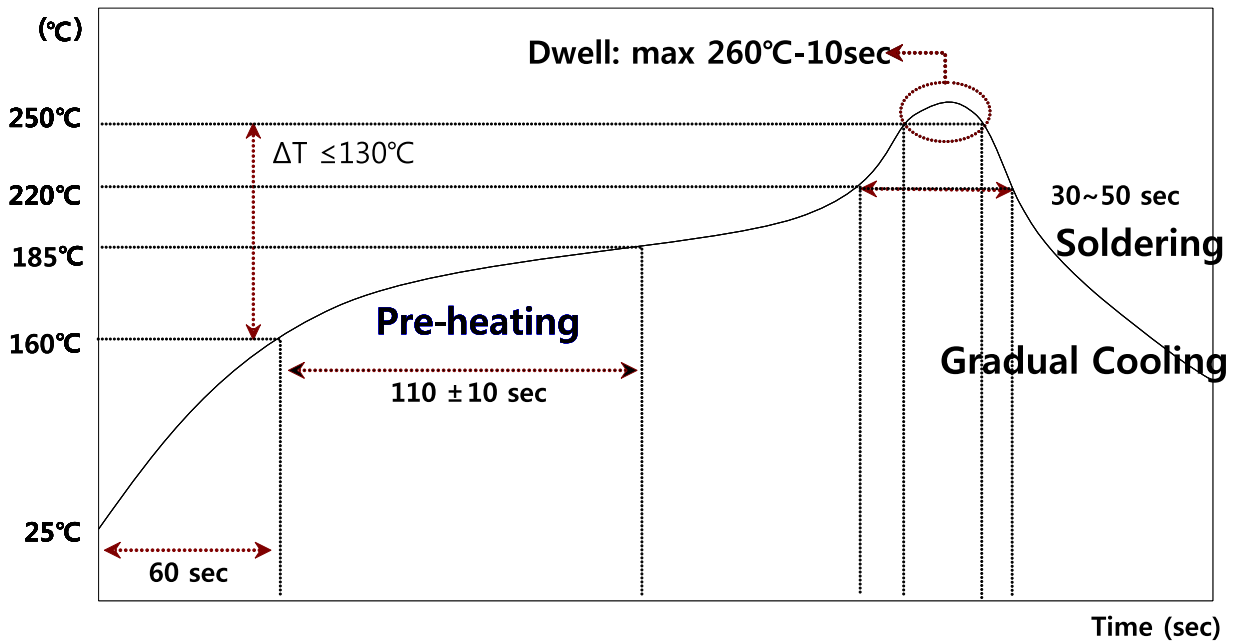
- Calibrate equipment
- Measure CM Impedance (at 100MHz) using test fixture.



Terminal

8. Reflow condition

8. 1 Recommended soldering profile (Lead-free condition)



8. 2 Recommended Lead-free solder paste

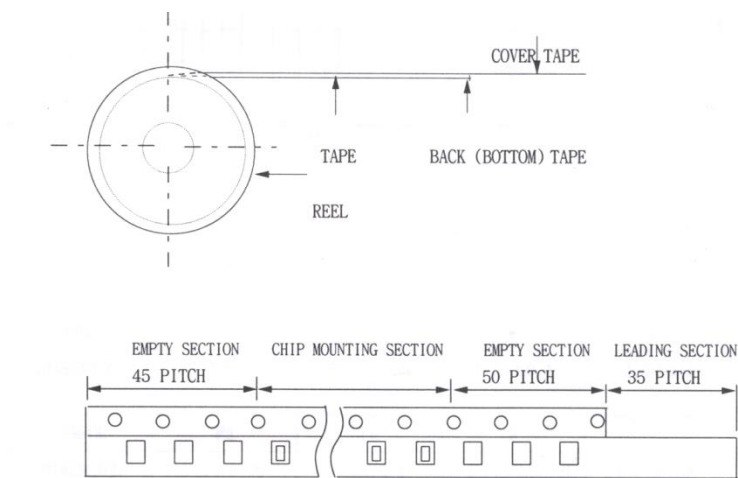
- Supplier : Tamura Donghwa
- Main composition : Sn-Ag-Cu
- Ratio of composition : 96.5%-3.0%-0.5%

8. 3 Recommended hand solder

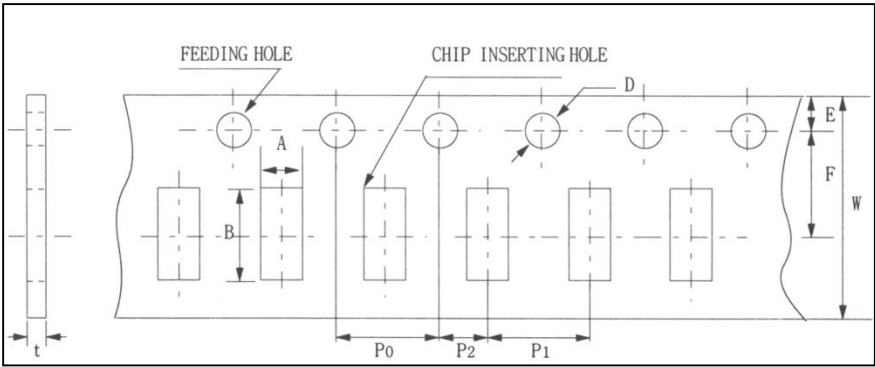
- Max Temperature: Max 380 °C(Max 5sec)

9. Packing specification

9. 1 Taping figure



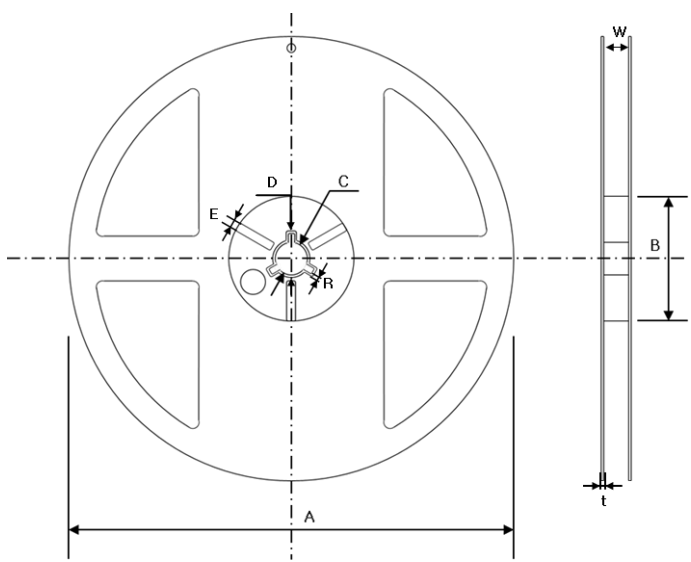
9. 2 Carrier tape dimensions



Unit : mm

SYMBOL		A	B	W	F	E	P ₁	P ₂	P ₀	D	t
DIMENSION	11	1.15 ±0.05	1.5 ±0.05	8.0 +0.30 -0.10	3.5 ±0.05	1.75 ±0.05	4.0 ±0.10	2.0 ±0.05	4.0 ±0.10	1.55 ±0.03	0.75 ±0.05

9. 3 Reel dimensions



- (1) Reel Materials: Polystyrene
- (2) Label
- (3) Taping
 - Standard Packing Quantity per Reel ($\phi 178$)
 - Paper Tape: 4,000pcs

Unit : mm

CODE	A	B	C	D	E	W	t	R
DIMENSION	$\phi 178 \pm 2$	Min. $\phi 50$	$\phi 13 \pm 0.5$	$\phi 20 \pm 0.8$	3.0 ± 0.5	10 ± 1.5	1.3 ± 0.2	1.0 ± 0.2