

TEF1210 Series

COMMON MODE ESD FILTER

1. Generals

- This specification covers the engineering requirements for the TEF1210 Series (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, 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 Numbering System

T EF 1210A 2X 350 M T
① ② ③ ④ ⑤ ⑥ ⑦

- ① Company Name: TOP-EMC
- ② Product Function: ESD Filter
- ③ Dimensions: 1.2mm (L) × 1.0mm (W)
- ④ Number of lines: 2X = 2 lines
- ⑤ Common Mode Impedance (at 100MHz): 350= 35 Ω ,500= 50 Ω ,900= 90 Ω
- ⑥ Tolerance of common mode impedance: M= ±20%
- ⑦ Packing :Tape & Reel

TEF1210 Series

4. 2 Specification of electrical characteristics

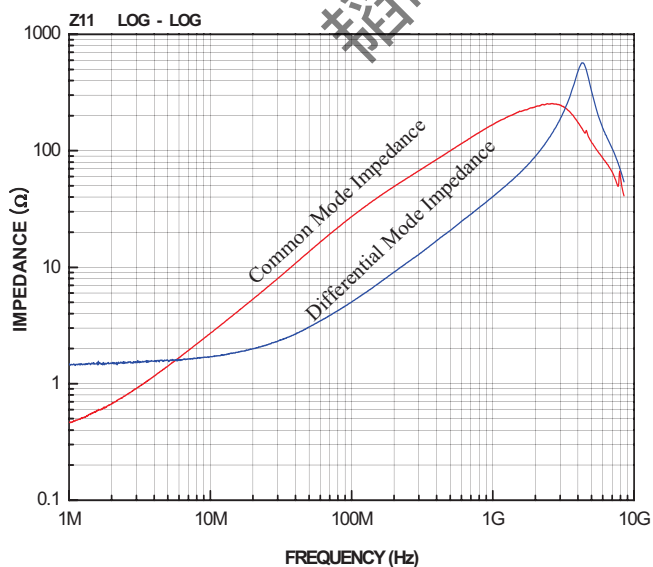
Characteristics	Common Mode Impedance	Resistance	Rated Current	Insulation Resistance (Max)	Capacitance	Rated Voltage	Leakage Current	Trigger Voltage	Clamping Voltage
symbol	Z_{CM}	R_{DC}	I_R	IR_{CR}	C	V_R	I_L	V_t	V_c
Units	Ω	Ω	mA (Max)	Ω	pF	Volt (typ)	μA (max)	V (typ)	V (typ)
Test Condition	@100MHz	$25^\circ C \pm 2^\circ C$	2V	10V	0.5Vrms @1MHz	$25^\circ C \pm 2^\circ C$	5V	contact discharge mode	
TEF1210A2X350MT	35($\pm 20\%$)	0.5~3.0	100	$\geq 10M$	0.7~1.7	10	< 10	360	70
TEF1210A2X500MT	50($\pm 20\%$)	0.1~3.0	100	$\geq 10M$	0.8~1.7	10	< 10	340	70
TEF1210A2X900MT	90($\pm 20\%$)	0.1~3.0	100	$\geq 10M$	0.8~1.7	10	< 1	200	70

TERMINOLOGY

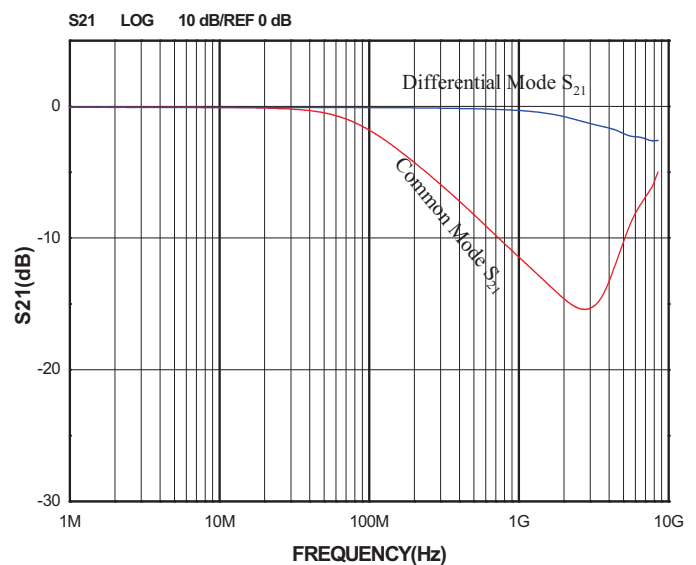
- V_c : Per IEC 61000-4-2, 30A@8kV, level 4, clamp measurement made 30ns after initiation of pulse, all test in contact discharge mode.

TEF1210A2X350MT

– Impedance Curves

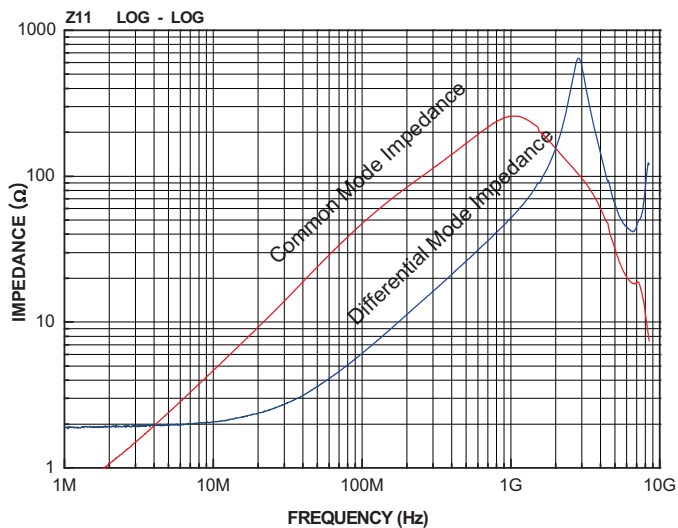


– Transmission characteristics (S-parameter)

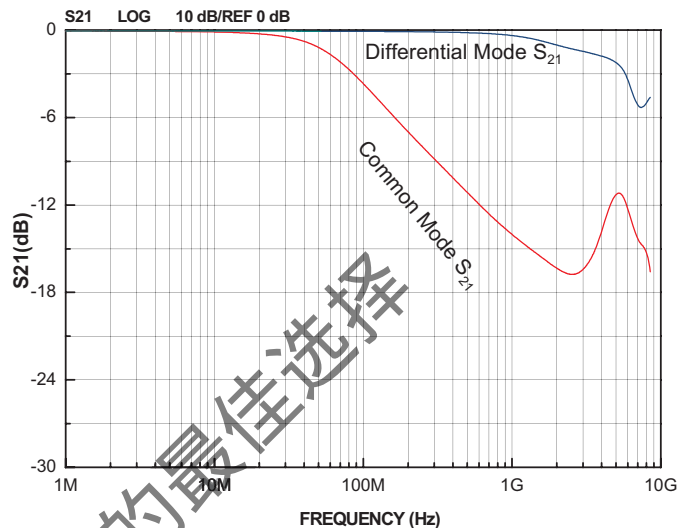


TEF1210A2X500MT

- Impedance Curves

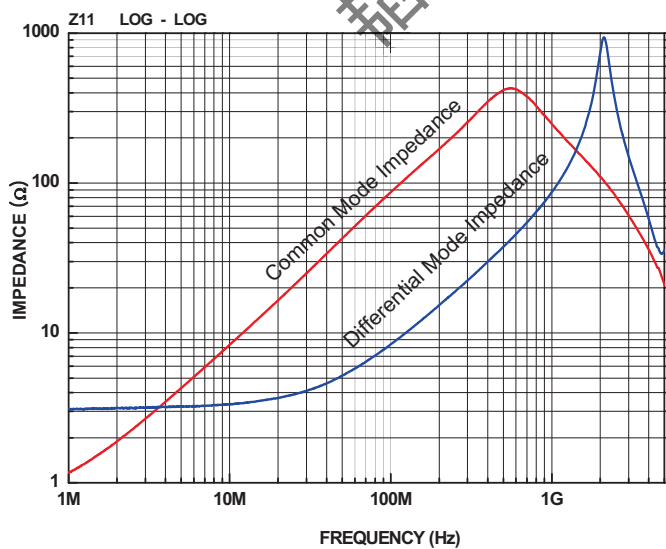


-Transmission characteristics (S-parameter)

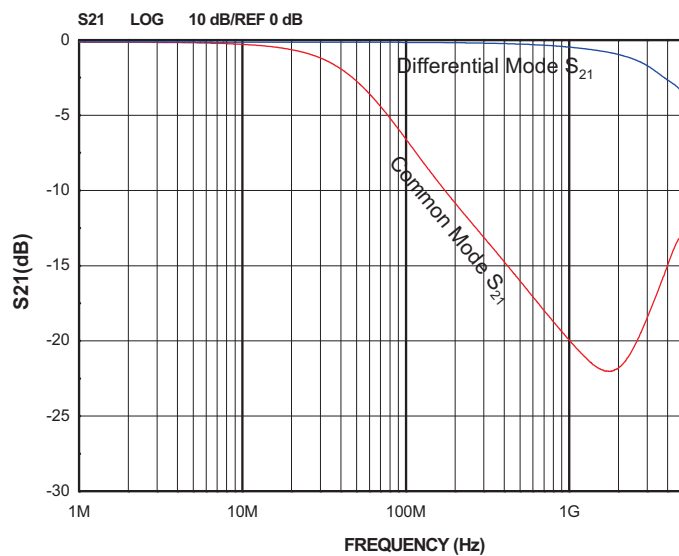


TEF1210A2X900MT

- Impedance Curves



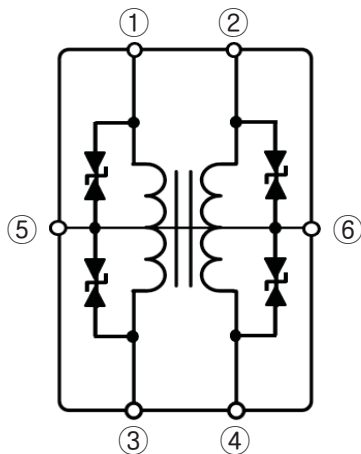
-Transmission characteristics (S-parameter)



4. 3 Operating Temperature

DESCRIPTION	REQUIREMENTS
Operating Temperature	-40°C ~ + 85°C

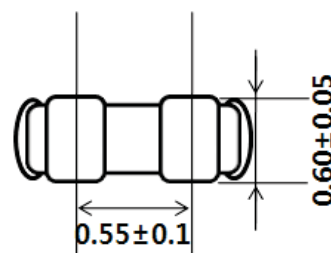
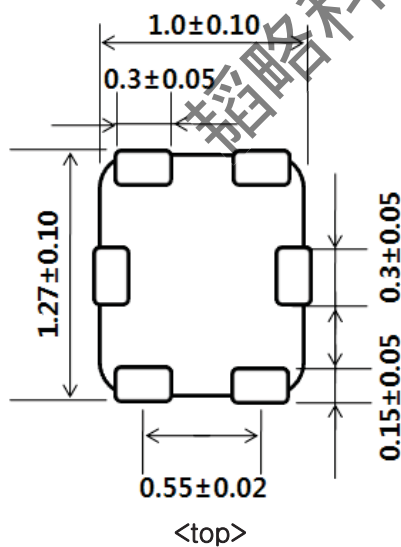
5. Equivalent Circuit



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

6. Mechanical Property

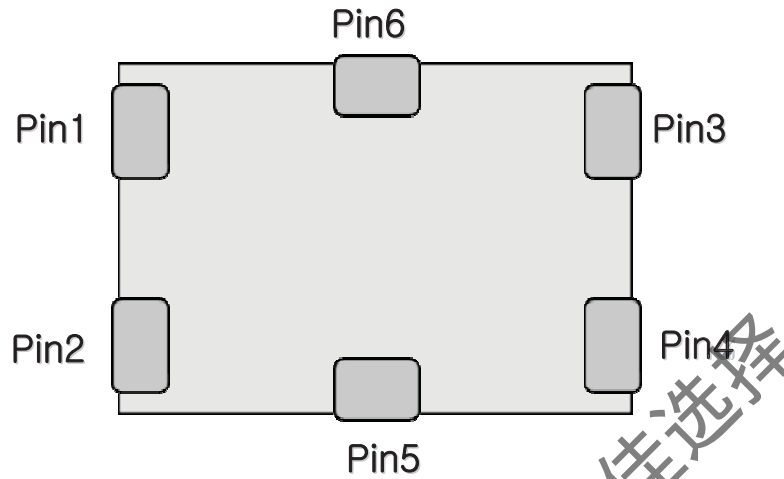
6. 1 Appearance and Dimension



Unit : mm

7. Test Method of Electrical Property

- PIN INDEX

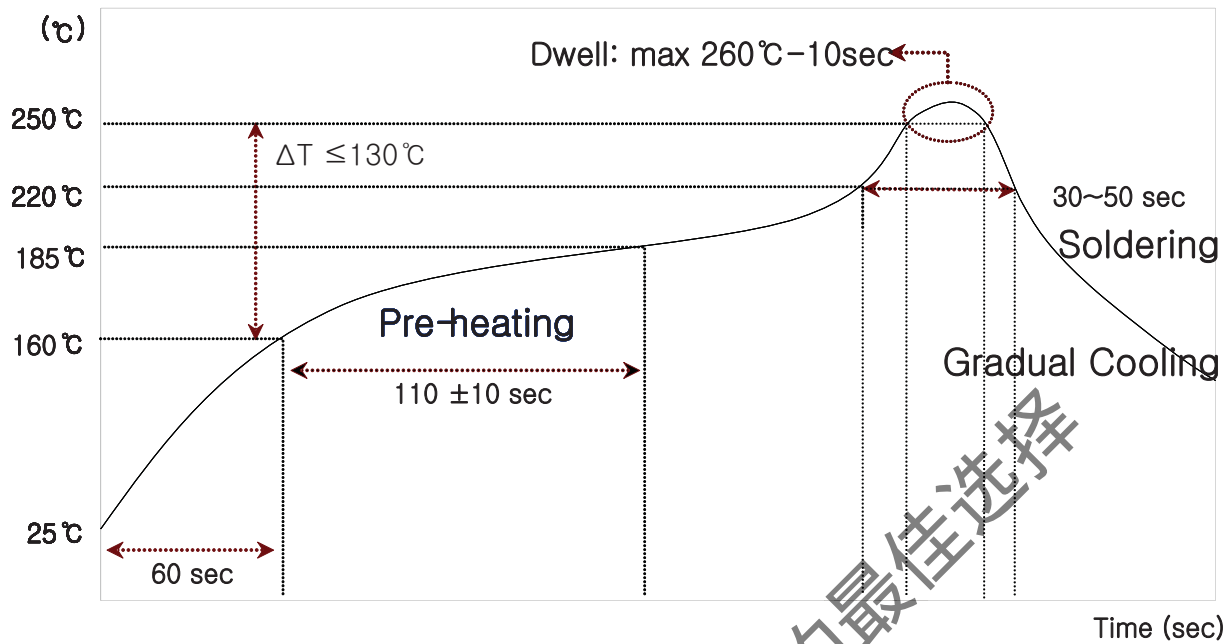


ITEM	DESCRIPTION	SOURCE	EQUIPMENT
Rdc	Pin 1-3, 2-4	10mA DC Source	Source Meter
CM Impedance	Pin 1-2(Short) to Pin 3-4(Short)	500mV	LCR Meter (3GHz)
IL	Pin 5 or 6 to Pin 1, 2, 3, 4	5V DC Source	Source Meter

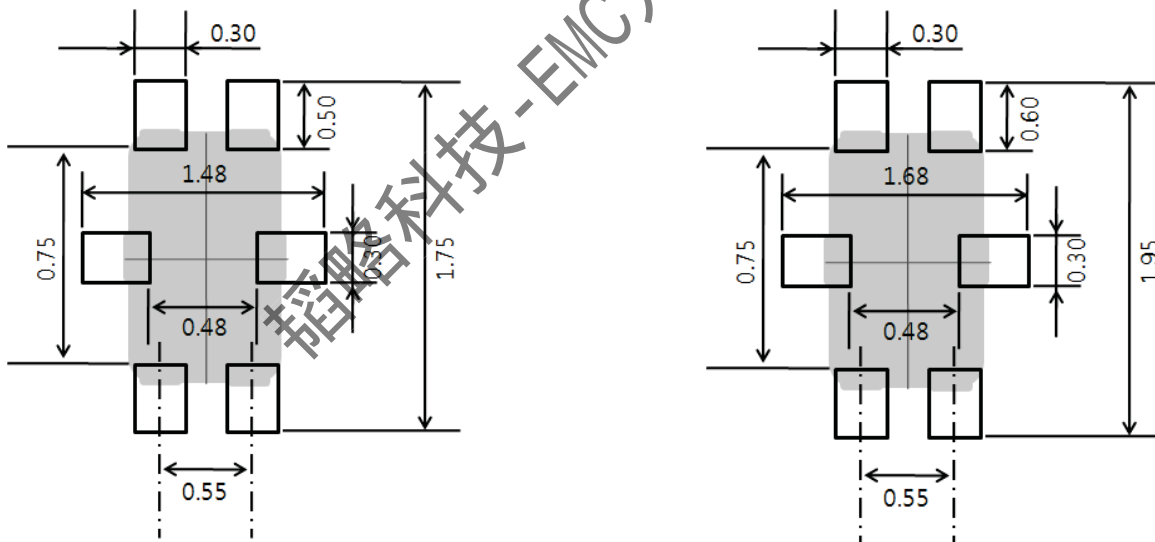
TEF1210 Series

8.Reflow Condition

8. 1 Recommended Soldering Profile(lead-free condition)



8.2 Recommended Foot Print



Foot print

Stencil Mask

Unit : mm

Stencil Mask T : 0.10mm

TEF1210 Series

8.3 Recommended Lead-Free Solder Paste

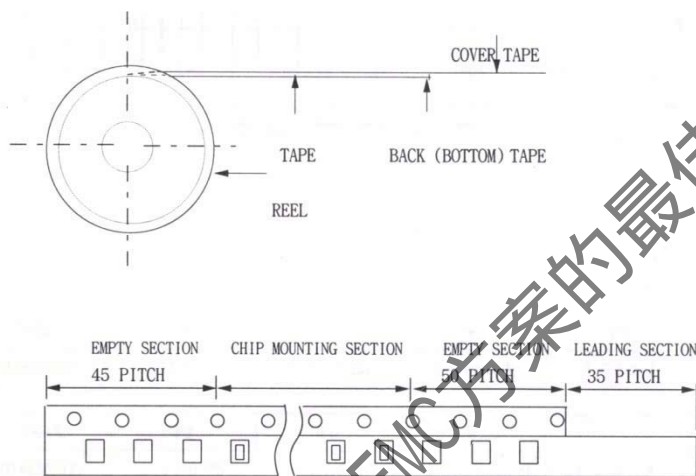
- Supplier : Tamura Donghwa
- Main composition : Sn-Ag-Cu
- Ratio of composition : 96.5%-3.0%-0.5%

8.4 Recommended Hand Solder

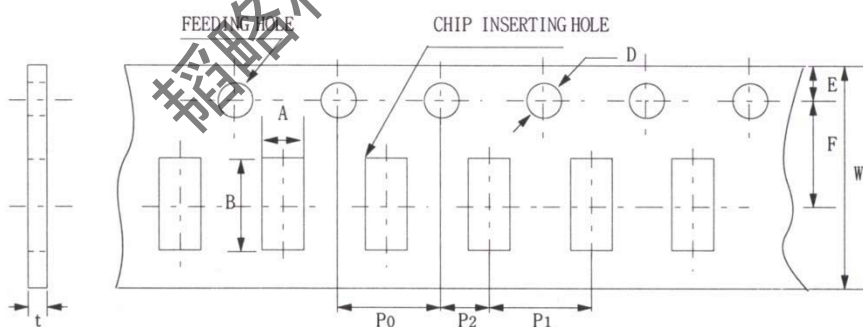
- Max Temperature: Max 380 °C (Max 5sec)

9. Packing Specification

9.1 Taping figure



9.2 Carrier Tape Dimensions

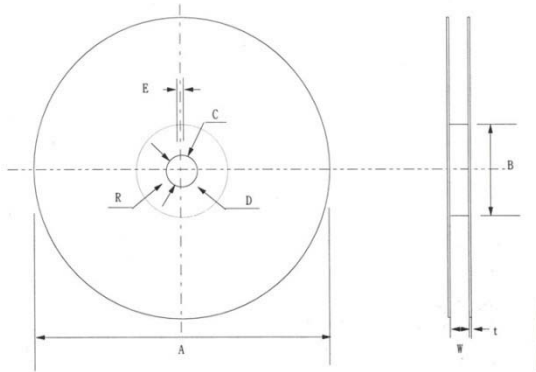


Unit : mm

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

TEF1210 Series

9.3 Reel Dimensions



- (1) Reel Materials: Polystyrene
- (2) Label
- (3) Taping
 - Standard Packing Quantity per Reel ($\phi 178$)

Unit : mm

CODE	A	B	C	D	E	W	t	R
DIMENSION	$\phi 178 \pm 2$	Min. $\phi 50$	$\phi 13 \pm 0.5$	$\phi 21 \pm 0.8$	2.0 ± 0.5	10 ± 1.5	0.8 ± 0.2	1.0

韬略科技-EMC方案的最佳选择

10. Contact Information

SHENZHEN TOP-FLIGHT TECHNOLOGY CO.,LTD

4th Floor, C Building, Quansen Industrial Park , Bulong Road, Longhua New District, Shenzhen

Tel: 86-755-82908191 Fax: 86-755-82908701 Email: kang@topleve.com

Website: <http://www.topleve.com>