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Common Mode Filter	ICMF052P900MFR	1

Data Sheet

- ITEM : COMMON MODE FILTER
- PART NO : ICMF052P900MFR
- CONDITION :
 1. _____
 2. _____
 3. _____
 4. _____

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1. Generals

- This specification covers the engineering requirements for the ICMF052P900MFR (Common Mode Filter)

2. Features

- Effective for suppressing common mode noise and almost no effect for high speed differential data line
- Ultra low profile (0.64 x 0.57 x 0.35mm)
- Ceramic multilayer type SMD component
- Non-polarized product
- It is a product conforming to RoHS directive.

3. Applications

- HDMI lines in PDP, LCD TV, DVD Player, PC, Audio player, DSC
- MDDI, MIPI, MHL in mobile phone.


4. Product specifications

4. 1 PART NUMBER CODE

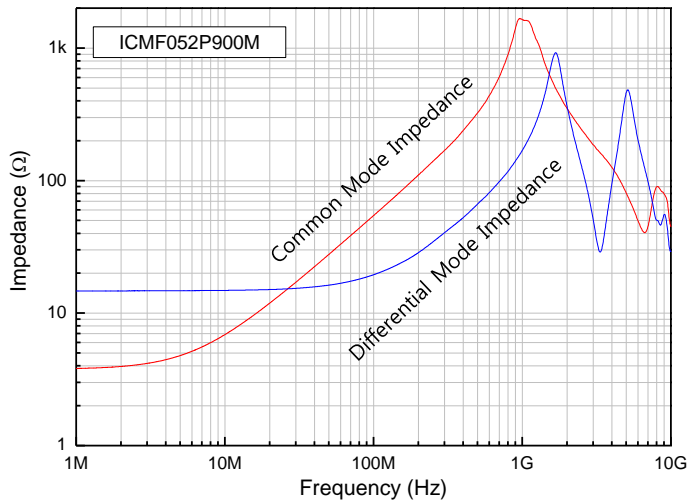
<u>ICMF</u>	<u>05</u>	<u>2P</u>	<u>900</u>	<u>M</u>	<u>F</u>	<u>R</u>
①	②	③	④	⑤	⑥	⑦

- ① Series name of ICT's Common Mode Filter
- ② Dimensions, 0.64mm (L) x 0.57mm (W)
- ③ Number of lines, 2P= 2 lines
- ④ Common Mode Impedance (at 100MHz), 900= 90Ω
- ⑤ Tolerance of common mode impedance, M= ±25%
- ⑥ Type of electrode plating: F= Lead Free
- ⑦ Packing Type, R= Reel

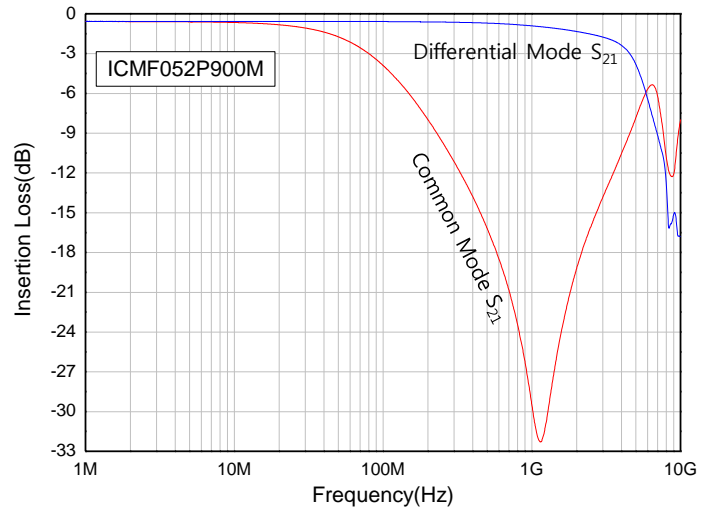
4. 2 Specification of electrical characteristics

Characteristics	Common Mode Impedance	Resistance	Insulation Resistance	Rated Current
symbol	 Z_{CM}	R_{DC}	IR_{CR}	I_R
Units	Ω	Ω	$M\Omega$	mA
Test Condition	@160MHz	$25^{\circ}C \pm 2^{\circ}C$	5V	$25^{\circ}C \pm 2^{\circ}C$
Value	90($\pm 25\%$)	6.0 ($\pm 30\%$)	Min 10	Max 80

- Impedance Curves



-Transmission characteristics (S-parameter)

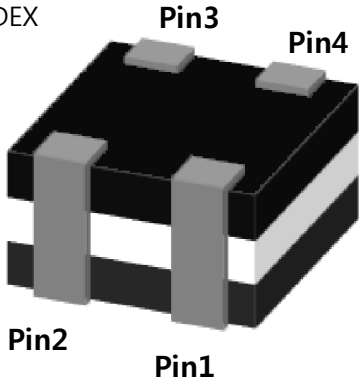


4. 3 Operating Temperature

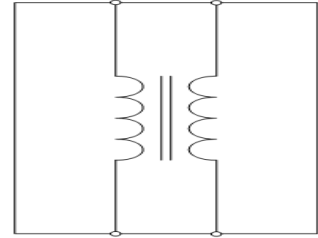
DESCRIPTION	REQUIREMENTS
Operating Temperature	$-40^{\circ}C \sim + 85^{\circ}C$

5. Equivalent Circuit & Pin Description

- PIN INDEX

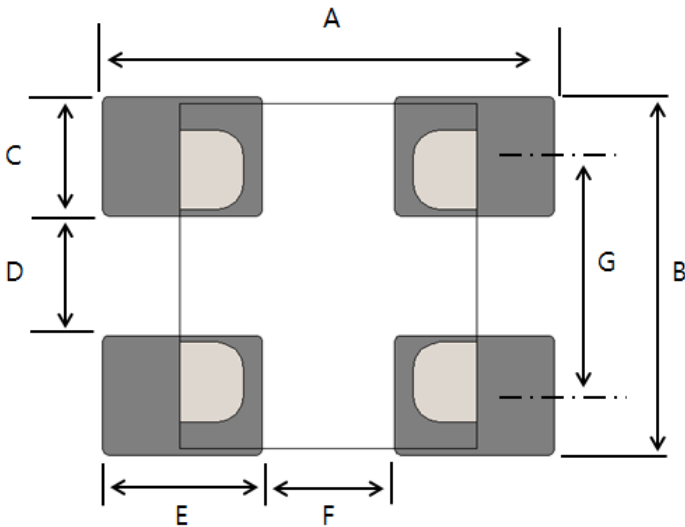


- Equivalent circuit



ITEM	DESCRIPTION	SOURCE	EQUIPMENT
Rdc	Pin 1 to 4, 2 to 3	10mA DC Source	Source Meter
CM Impedance	Pin 1-2(Short) to Pin 3-4(Short)		LCR Meter (3GHz)

6. Recommended Foot Print & Stencil Mask



Unit : mm

Item	Size
A	0.85±0.05
B	0.68±0.08
C	0.23±0.03
D	0.23±0.03
E	0.30
F	0.25±0.05
G	0.45±0.05

[Foot print / Stencil Mask]

7. Appearance and Dimension



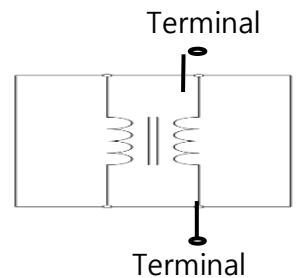
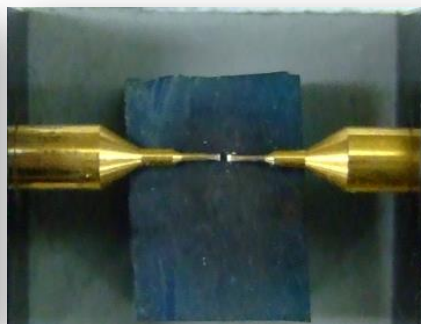
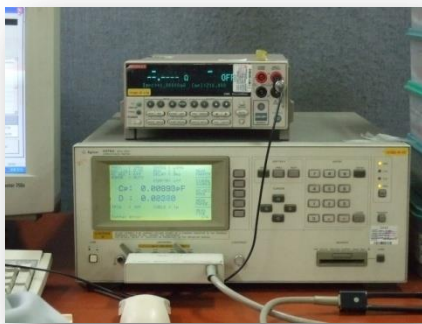
Unit : mm

Item	A	B	C	D	E	F
Size(mm)	0.64±0.05	0.57±0.05	0.15±0.05	0.15±0.05	0.4±0.1	0.35±0.03

8. Test method of Electrical property

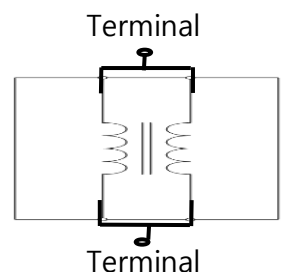
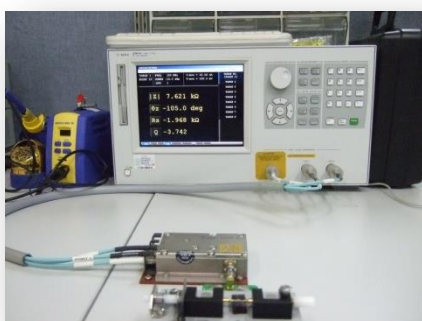
8. 1 Rdc (Model: KEITHLEY 2400)

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



8. 2 Common Mode Impedance (Model: Agilent 4287A)

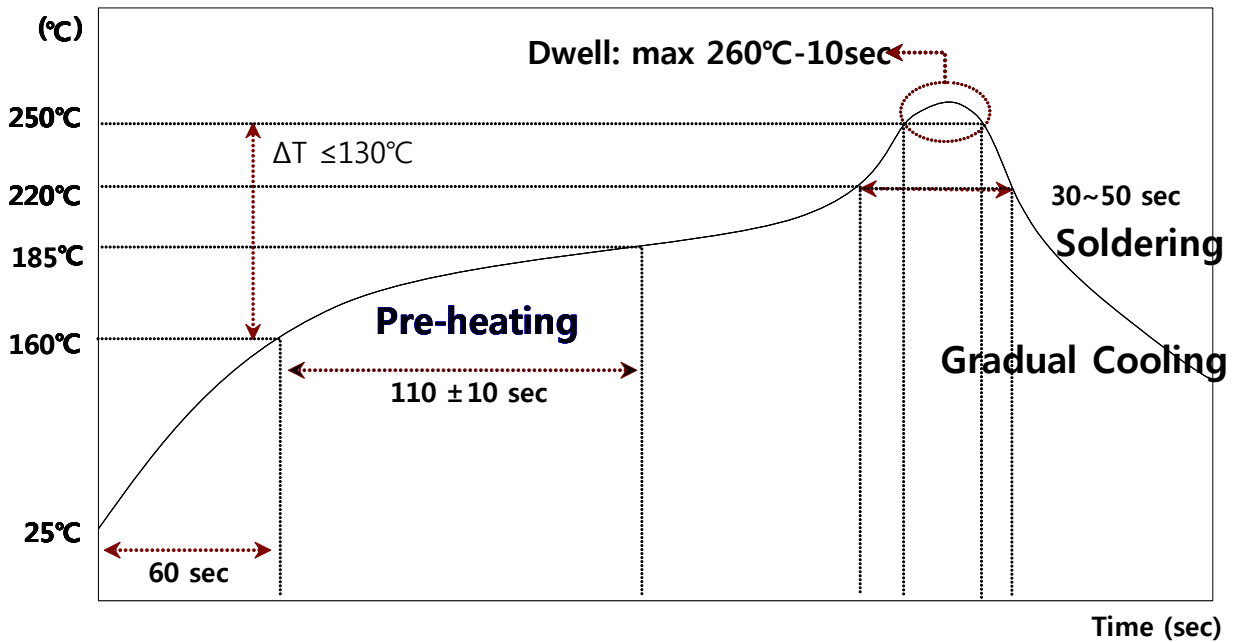
- Calibrate equipment
- Measure CM Impedance (at 100MHz) using test fixture.



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9. Reflow condition

9. 1 Recommended soldering profile (Lead-free condition)



9. 2 Recommended Lead-free solder paste

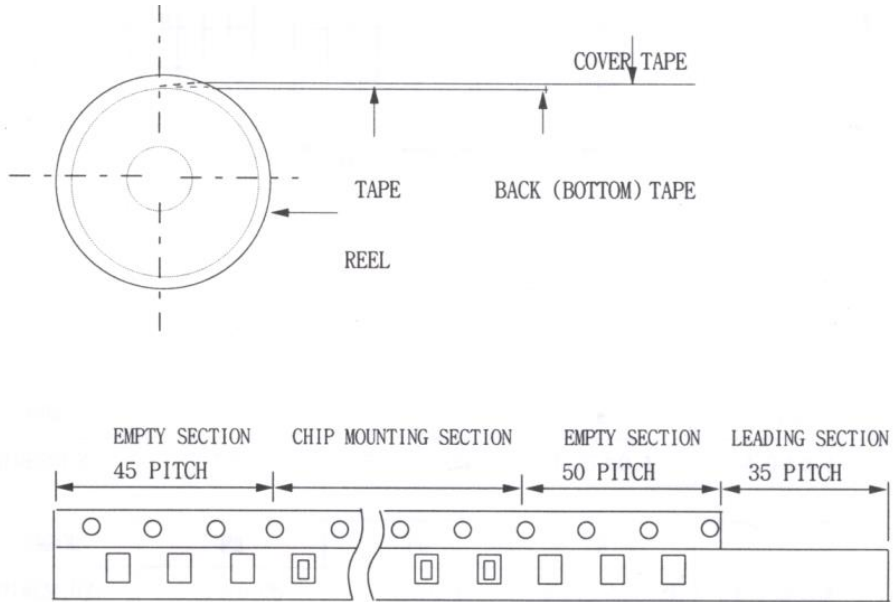
- Supplier : Tamura Donghwa
- Main composition : Sn-Ag-Cu
- Ratio of composition : 96.5%-3.0%-0.5%

9. 3 Recommended hand solder

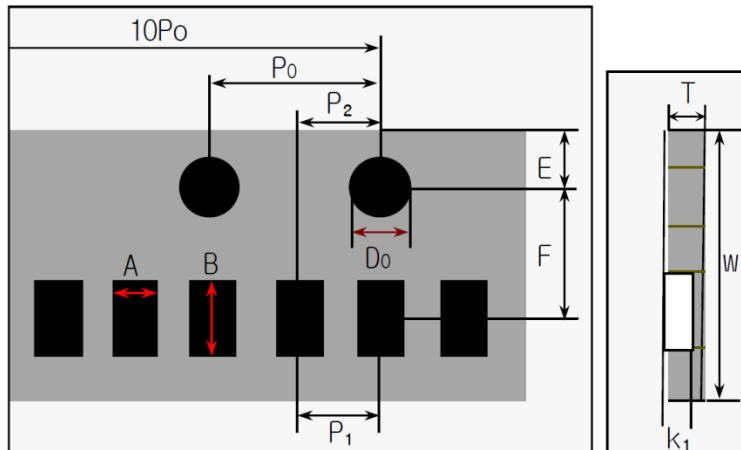
- Max Temperature: Max 380 °C(Max 5sec)

10. Packing specification

10. 1 Taping figure



10. 2 Carrier tape dimensions

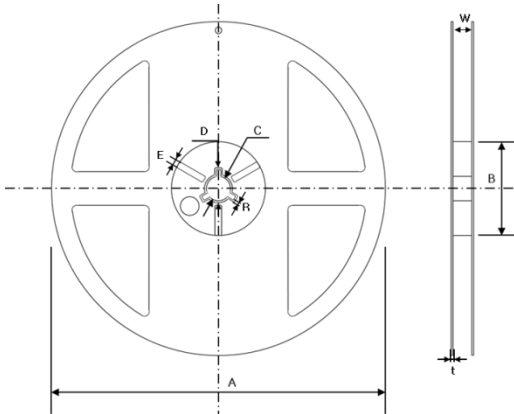


Unit : mm

SYMBOL	A	B	E	F	D ₀	P ₁	P ₂	P ₀	10P ₀	W	T	k ₁
DIMENSION	0.64	0.74	1.75	3.50	1.55	2.00	2.00	4.00	40.00	8.00	0.42	0.38
TOLERANCE	±0.03	±0.03	±0.05	±0.05	±0.05	±0.05	±0.05	±0.1	±0.10	±0.10	±0.05	±0.03

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10. 3 Reel dimensions

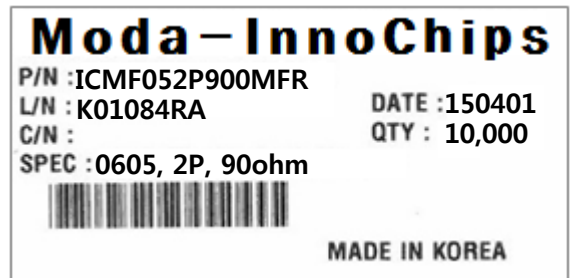
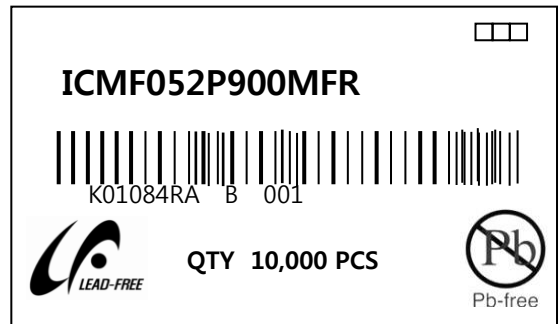
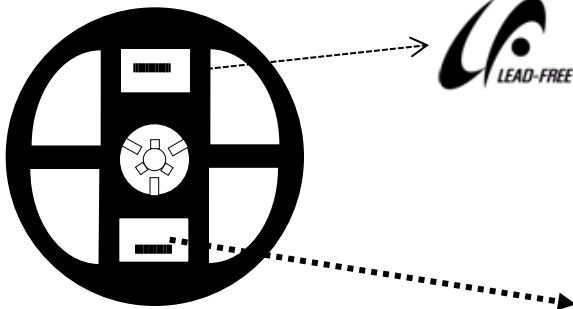


- (1) Reel Materials: Polystyrene
- (2) Label
- (3) Taping
 - Standard Packing Quantity per Reel ($\phi 178$)
 - Paper Tape: 10,000pcs

Unit : mm

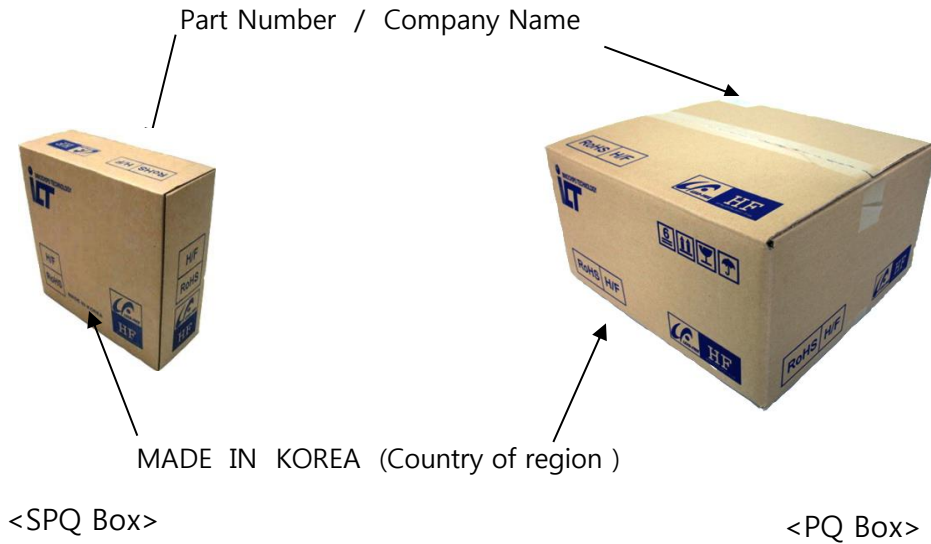
CODE	A	B	C	D	E	W	t	R
DIMENSION	$\phi 178 \pm 2$	Min. $\phi 50$	$\phi 13 \pm 0.5$	$\phi 20 \pm 0.8$	3.0 ± 0.5	10 ± 1.5	1.3 ± 0.2	1.0 ± 0.2

10. 4 Label code



- P/N : Part Number
- L/N : Lot Number
- C/N : Customer Number
- SPEC : Size, Line numbers & CM Impedance
- DATE : Date code
- Q'TY : Quantity

10. 5 Reel packing



- (1) Product box material : Card board
- (2) 5 Reels in each SPQ Box
- (3) PQ Box contains 10 SPQ Boxes (50 Reels)

Packing box + Product weight

Size			S-box + 5reel		M-box + 5S-box		L-box + 10S-box	
Product	L x W x H(mm)		185 x 70 x 185		370 x 190 x 200		380 x 370 x 200	
	Size	weight(g) /1 unit	Total(g)	Chip(g)	Total(g)	Chip(g)	Total(g)	Chip(g)
Common Mode Filter	0605	0.00048	605	24	3025	120	5767	240
	0806	0.00124	643	62	3215	310	6147	620
	1210	0.00480	750	96	3758	480	7503	960
	2012	0.00750	804	150	4028	750	8043	1500
Common Mode ESD Filter	0605	0.00054	608	27	3040	135	5797	270
	0806	0.00128	646	65	3230	325	6177	650
	1210	0.00490	752	98	3768	490	7523	980
	2012	0.00760	806	152	4038	760	8063	1520