

# Common Mode Filter

## 2 Line 90~120Ω 500mA

SIC6-MCI Series

MERITEK

### FEATURE

- Operating Temperature: -40°C ~ +85°C
- Chip common mode filter
- Solve EMI problem for high speed differential signal transmission line
- Applications: USB and LVDS



### PART NUMBERING SYSTEM

**SIC** **6** **2** **90RN** **A5** **MCI**  
 (1) (2) (3) (4) (5) (6)

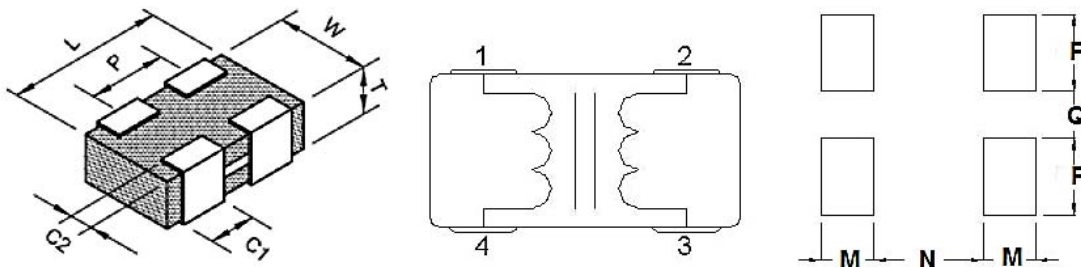


No	Item	Code	Description	Series Reference
(1)	Meritek Series	SIC	Common Mode Filter series	SMD 2 Line Chip Type
(2)	Dimension Code	6	6: 3.20x1.60mm	WidthxLength
(3)	Line	2	2: 2 Lines	Number of Lines
(4)	Impedance/Tolerance	90RN	90RN: 90Ω±25%	90~120Ω , -25%~ +25%
(5)	Rated Current	A5	A5:500mA	Max Rated Current
(6)	Internal Code	MCI	Internal Control Code	Internal or Project Reference

### ELECTRICAL CHARACTERISTICS

Part Number	Impedance @100MHz (Ω)	Tolerance (%)	Max DC Resistance (Ω)	Max Rated Current (mA)	Rated Voltage (V)	Withstand Voltage (V)	Insulation Resistance (MΩ) Min.
SIC6290RNA5MCI	90	±25%	0.50	500	10	25	200
SIC62121NA5MCI	120	±25%	0.50	500	10	25	200

### DIMENSIONS AND PCD LAND LAYOUT



Series	L	W	T	P	C1	C2	M	N	P	Q
SIC6-MCI	±0.20	±0.20	±0.10	±0.20	±0.20	±0.20	0.7	1.4	1.0	0.6

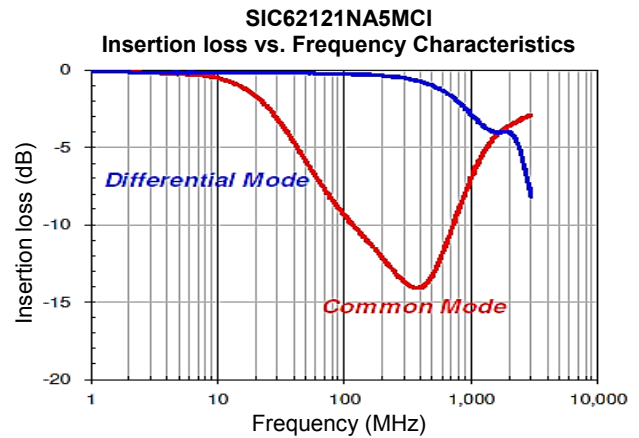
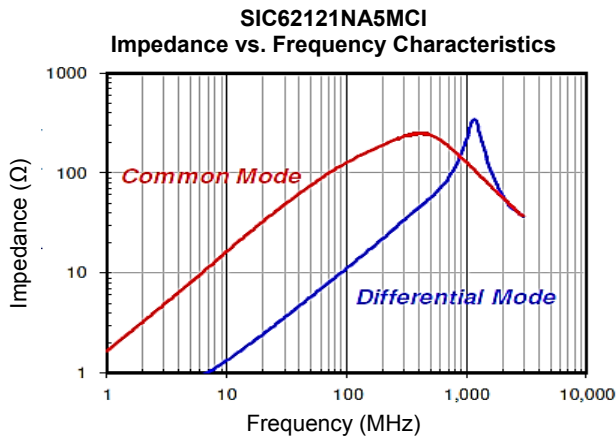
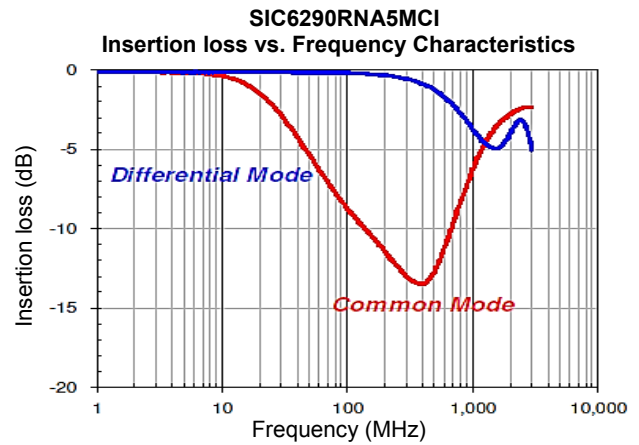
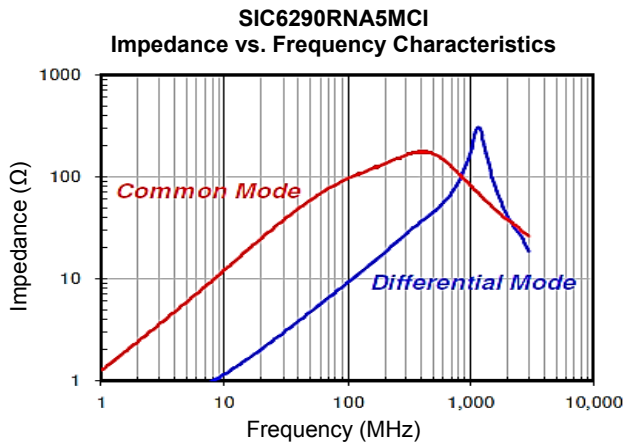
Unit: mm

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## CHARACTERISTIC CURVES



## RELIABILITY TEST CONDITION AND REQUIREMENT

Test	Test Condition	Requirement
Temperature Cycle	Temperature: -40~+85°C , Cycle: 100 cycles Dwell time: 30 minutes, Measurement: at ambient temperature 24 hrs after test completion	No mechanical damage Impedance value should be within ±20% of the initial value
Operational Life	Temperature: 85±5°C, Test time: 1000 hrs Apply current: full rated current, Measurement: at ambient temperature 24 hrs after test completion	No mechanical damage Impedance value should be within ±20% of the initial value
Biased Humidity	Temperature: 40±2°C, Humidity: 90~95% RH Test time: 1000 hrs, Apply current: full rated current Measurement: at ambient temperature 24 hrs after test completion	No mechanical damage Impedance value should be within ±20% of the initial value
Resistance to Soldering Heat	Solder temperature: 260±5°C Flux: Rosin DIP time: 10±1 sec	More than 95% of terminal electrode should be covered with new solder No mechanical damage Impedance value should be within ±20% of the initial value
Steam Aging Test	Temperature: 93±2°C, Test time: 4 hrs Solder temperature: 235±5°C Flux: Rosin, DIP time: 5±1 sec	More than 95% of terminal electrode should be covered with new solder

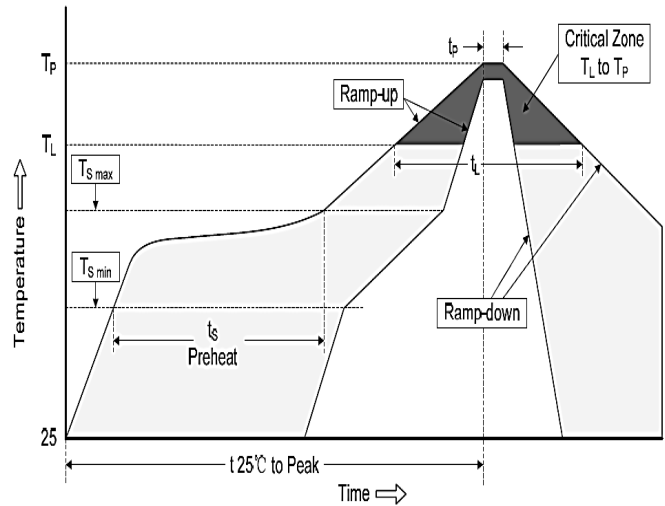
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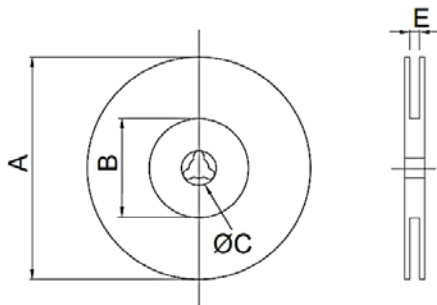
## RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	200°C
	Time (min. to max.) ( $t_s$ )	60~120 seconds
Average ramp up rate ( $T_L$ ) to peak		3°C/second Max.
$T_{s(max)}$ to $T_L$ (Ramp-up rate)		3°C/second Max.
Reflow	Temp. ( $T_L$ )	217°C Min.
	Time (min. to max.) ( $t_L$ )	60~150 seconds
Peak Temperature ( $T_P$ )		255~260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		≥30 seconds
Ramp-down Rate		4°C/second Max.
Time (25°C to Peak Temp.)		6 mins Max.

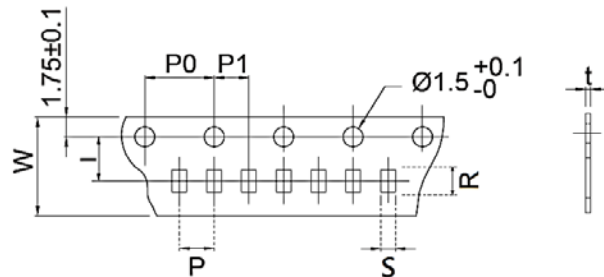


## PACKAGING SPECIFICATION

### CARRIER TAPE REELS



### TAPE DIMENSION (mm)



Series	Reel Dimension (mm)				Tape Dimensions (mm)					Parts Per Reel
	A ±1.0	B ±0.5	C ±0.2	E ±0.5	W ±0.10	P ±0.10	P0 ±0.10	P1 ±0.10	t ±0.05	
SIC4-MCI	178.0	60.0	13.0	9.0	8.00	4.00	4.00	2.00	0.75	4,000
SIC5-MCI	178.0	60.0	13.0	9.0	8.00	4.00	4.00	2.00	0.22	3,000
SIC6-MCI	178.0	60.0	13.0	9.0	8.00	4.00	4.00	2.00	0.22	3,000

\*Specifications subject to change without notice.