

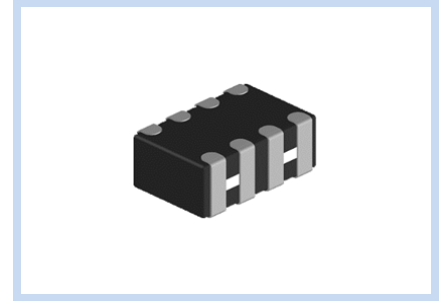
Common Mode Filter 4 Line 90~120Ω 300~400mA

SIC5-CAI Series

MERITEK

FEATURE

- Operating Temperature: -40°C ~ +85°C
- Small chip common mode filter with composite co-fired material
- Two identical common mode chokes in a small chip size
- Solve EMI problem for high speed differential signal transmission line
- Applications: USB, LVDS



PART NUMBERING SYSTEM

SIC 5 4 90RN A4 CAI
(1) (2) (3) (4) (5) (6)

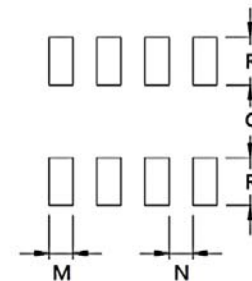
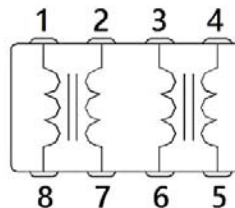
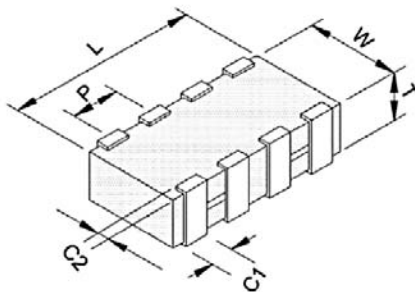


No	Item	Code	Description	Series Reference
(1)	Meritek Series	SIC	Common Mode Filter series	4 Line Chip Type
(2)	Dimension Code	5	5: 2.0x1.25mm	WidthxLength
(3)	Line	4	4: 4 Lines	Number of Lines
(4)	Impedance/Tolerance	90RN	90RN: 90Ω ±25%	121N: 120Ω ±25%
(5)	Rated Current	A4	A4: 400mA	300~400mA
(6)	Internal Code	CAI	Internal Control Code	Internal or Project Reference

ELECTRICAL CHARACTERISTICS

Part Number	Impedance @100MHz (Ω)	Max DC Resistance (Ω)	Max Rated Current (mA)	Rated Voltage (V)	Withstand Voltage (V)	Insulation Resistance (MΩ) Min.
SIC5490RNA4CAI	90±25%	0.60	400	10	25	200
SIC54121NA3CAI	120±25%	0.60	300	10	25	200

DIMENSIONS AND PCD LAND LAYOUT



Series	L	W	T	P	C1	C2	M	N	Q	R
SIC5-CAI	±0.20	±0.20	±0.10	±0.20	±0.20	±0.20	0.25	0.25	0.75	0.50

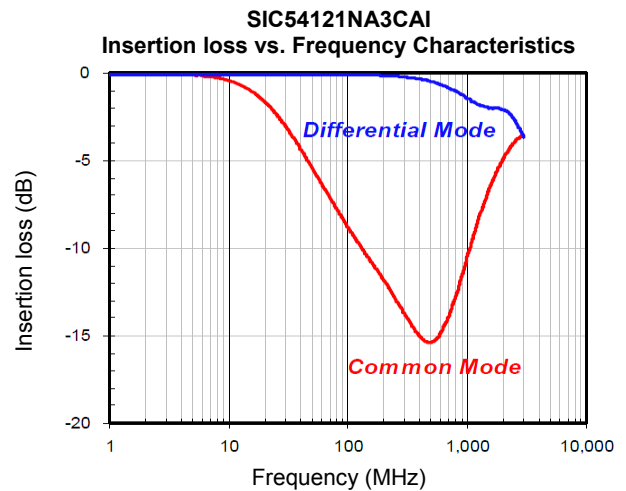
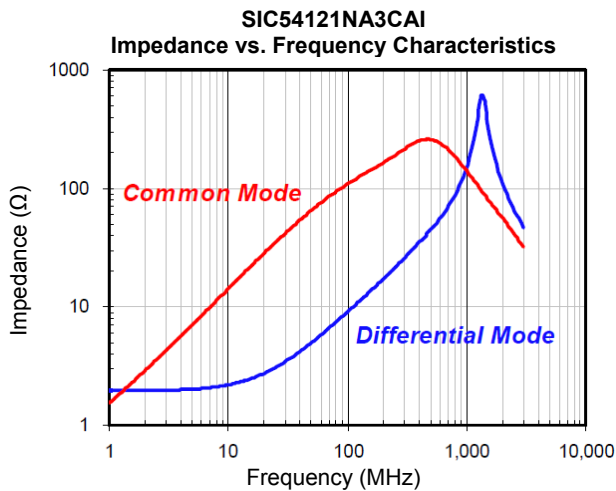
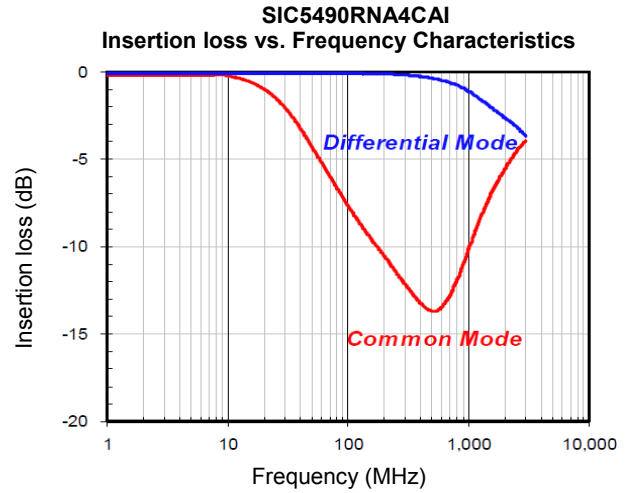
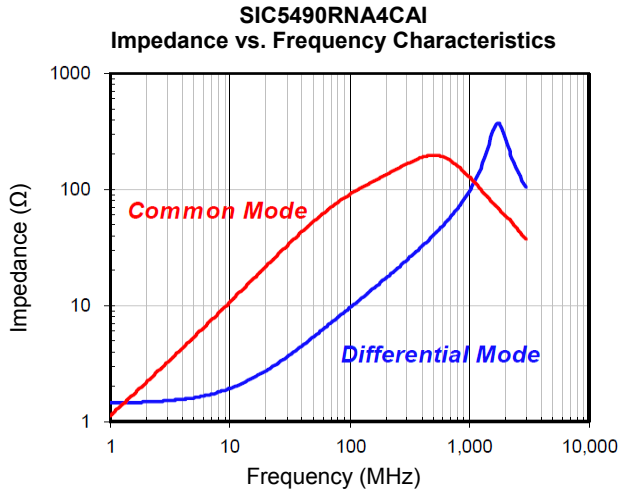
Unit: mm

Common Mode Filter 4 Line 90~120Ω 300~400mA

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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

Common Mode Filter

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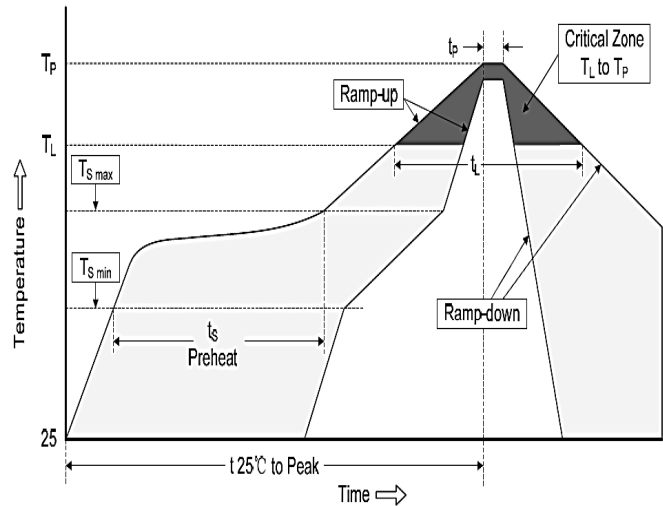
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RELIABILITY TEST CONDITION AND REQUIREMENT

Test	Test Condition	Requirement
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

RECOMMENDED SOLDERING PROFILES

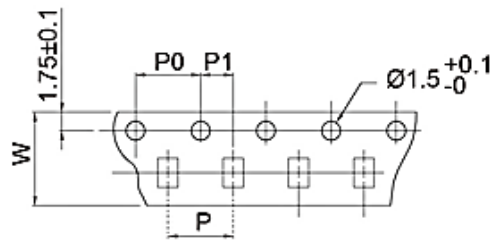
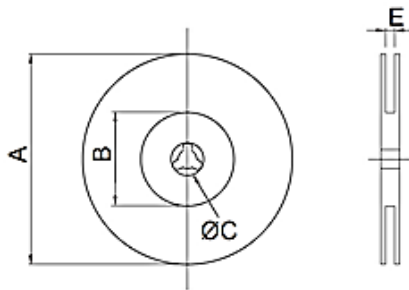
Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	200°C
	Time (min. to max.) (t_s)	60~120 seconds
Average ramp up rate (T_L) to peak		3°C/second Max.
$T_{s(max)}$ to T_L (Ramp-up rate)		3°C/second Max.
Reflow	Temp. (T_L)	217°C Min.
	Time (min. to max.) (t_L)	60~150 seconds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



PACKAGING SPECIFICATION

CARRIER TAPE REELS

TAPE DIMENSION (mm)



Plastic



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 ±0.05	t ±0.05	h ±0.10	
SIC5-CAI	178.0	60.0	13.0	9.0	8.00	4.00	4.00	2.00	0.22	1.13	3,000
SIC6-CAI	178.0	60.0	13.0	9.0	8.00	4.00	4.00	2.00	0.22	1.25	3,000

*Specifications subject to change without notice.