

# Common Mode Filter

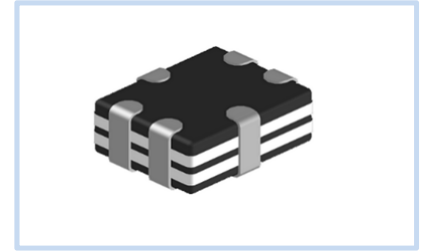
## 2 Line 36~90Ω 100~300mA

SIC4-CEI Series

MERITEK

### FEATURE

- Operating Temperature: -40°C ~ +85°C
- Meet IEC61000-4-2 (level 4): 8KV/15KV: Contact/Air discharge
- Build in ESD protection function
- Solve EMI problem for high speed differential signal transmission line
- Applications: USB2.0, MIPI and MHL serial interface in mobile device



### PART NUMBERING SYSTEM

SIC 4 2 90RN A1 CEI  
 (1) (2) (3) (4) (5) (6)

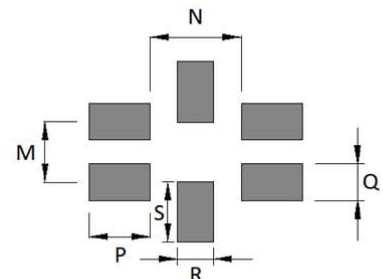
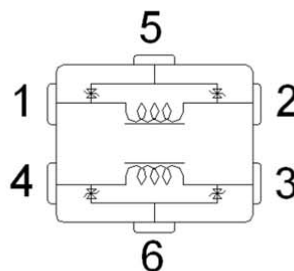
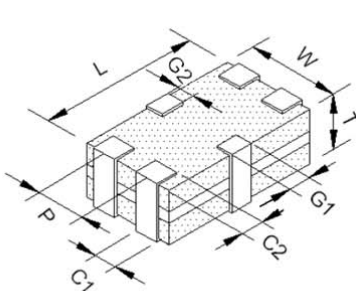


No	Item	Code	Description	Series Reference
(1)	Meritek Series	SIC	Common Mode Filter series	2 Line ESD Protection
(2)	Dimension Code	4	4: 1.25x1.00mm	WidthxLength mm
(3)	Line	2	2: 2 Lines	Number of Lines
(4)	Impedance/Tolerance	90RN	90RN: 90Ω ±25%	36~90Ω, -25~+25%
(5)	Rated Current	A1	A1:100mA	100~300mA
(6)	Internal Code	CEI	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)	Insulation Resistance (MΩ) Min.	Capacitance Max@1MHz (pF)	Max Leakage Current @5V (μA)
SIC4290RNA1CEI	90±25%	2.0	100	10	100	1.3	1
SIC4236RNA3CEI	36±25%	0.5	300	10	200	0.7	1
SIC4290RNA3CEI	90±25%	0.6	300	10	200	0.7	1

### DIMENSIONS AND PCB LAND LAYOUT



Series	L	W	T	P	C1	C2	G1	G2	M	N	P	Q	R	S
SIC4-CEI	±0.10	±0.10	±0.10	±0.10	±0.10	±0.15	±0.15	±0.15	0.50	0.75	0.50	0.35	0.30	0.50

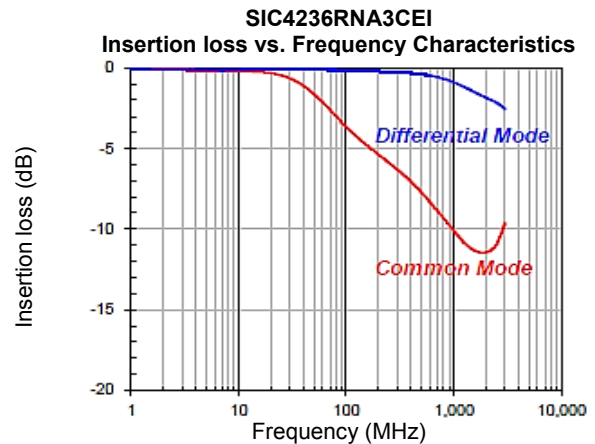
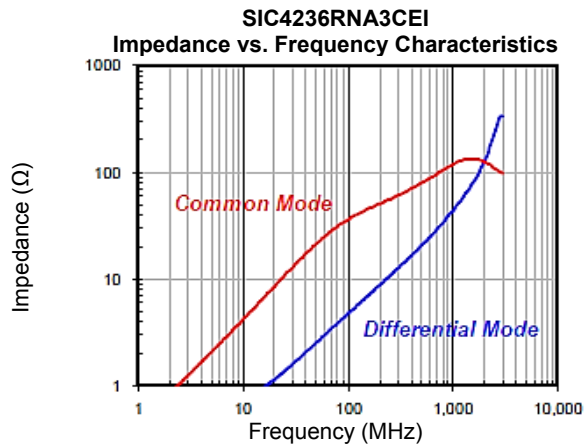
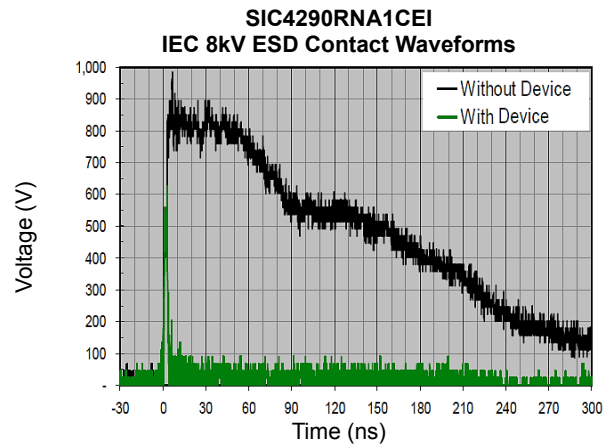
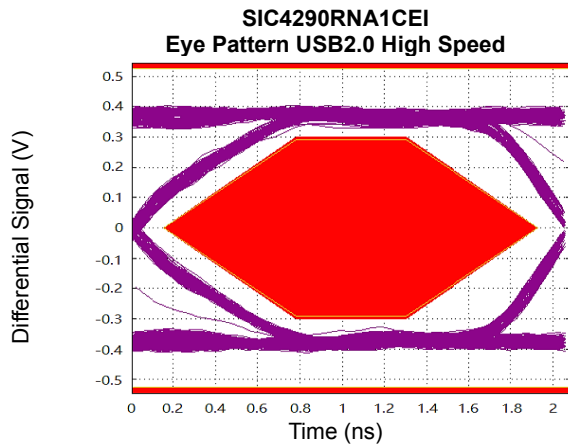
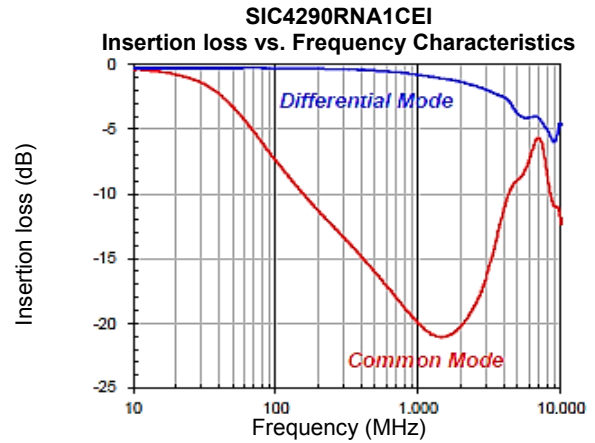
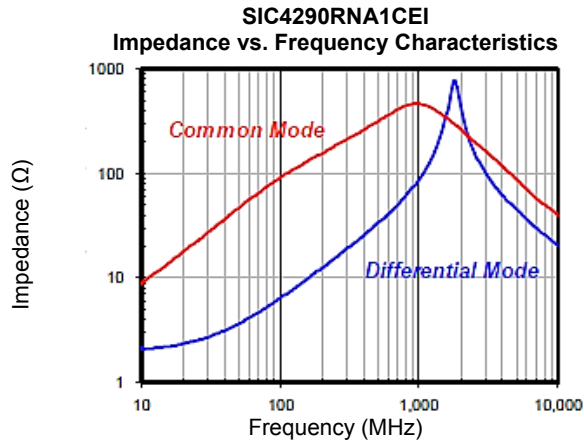
Unit: mm

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## CHARACTERISTIC CURVES

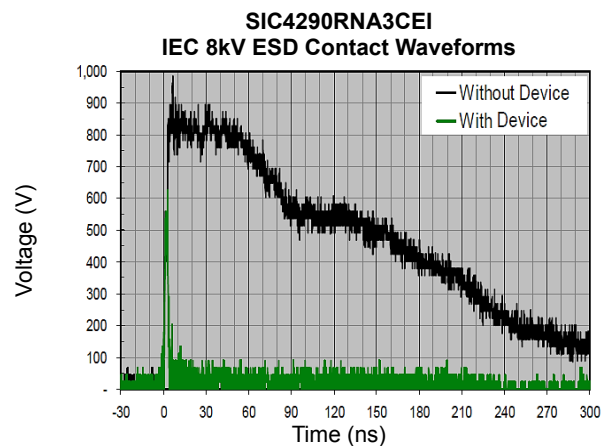
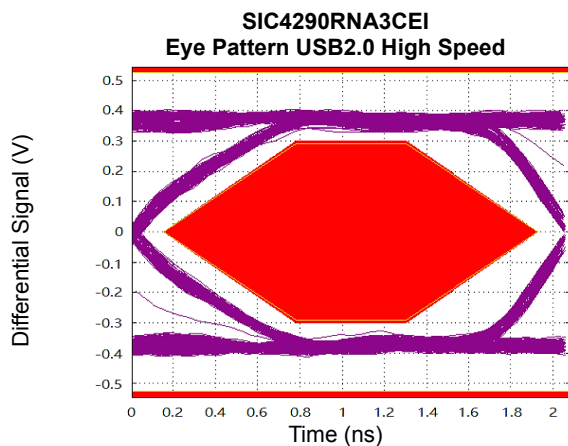
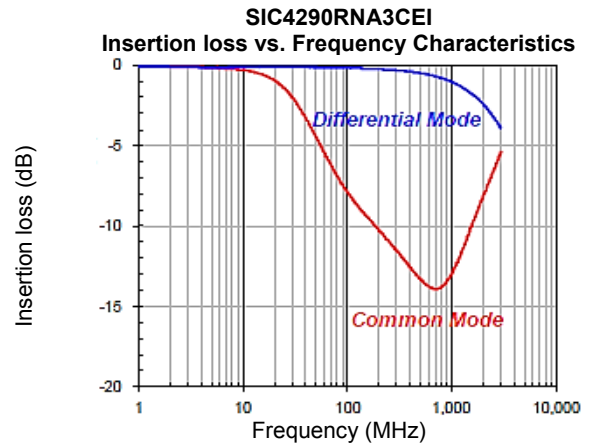
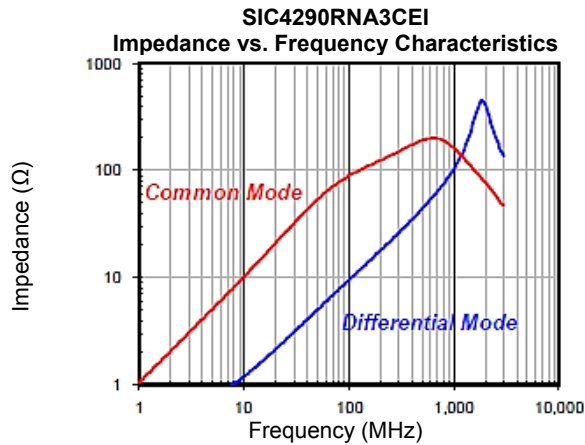
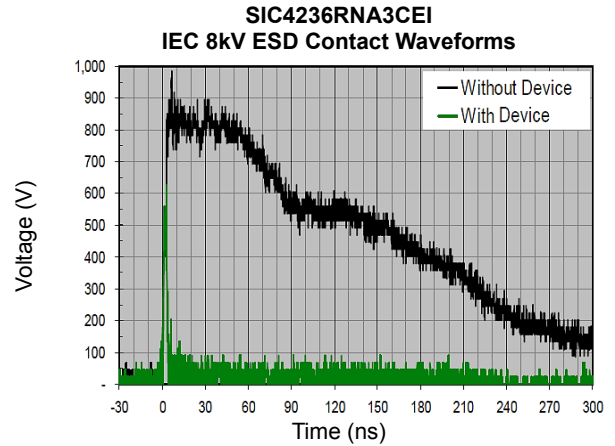
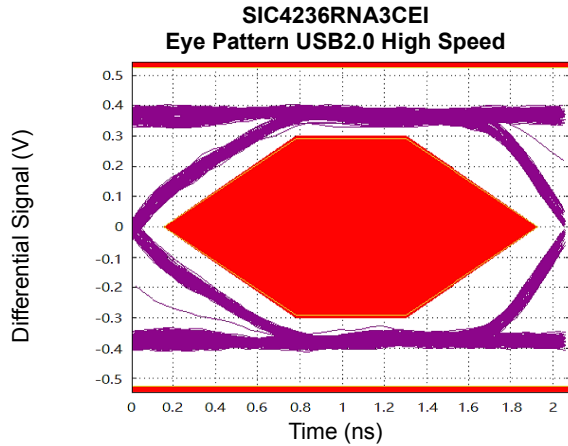


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## CHARACTERISTIC CURVES



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### 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
ESD Test (Contact Discharge)	Voltage: 8kV (Level 4) Polarity: Positive and Negative ESD gun: IEC61000-4-2 Standard Measurement: at ambient temperature 24 hrs after test completion	No mechanical damage Leakage current: within 10µA
ESD Test (Air Discharge)	Voltage: 15kV (Level 4) Polarity: Positive and Negative ESD gun: IEC61000-4-2 Standard Measurement: at ambient temperature 24 hrs after test completion	No mechanical damage Leakage current: within 10µA

### RECOMMENDED SOLDERING PROFILES

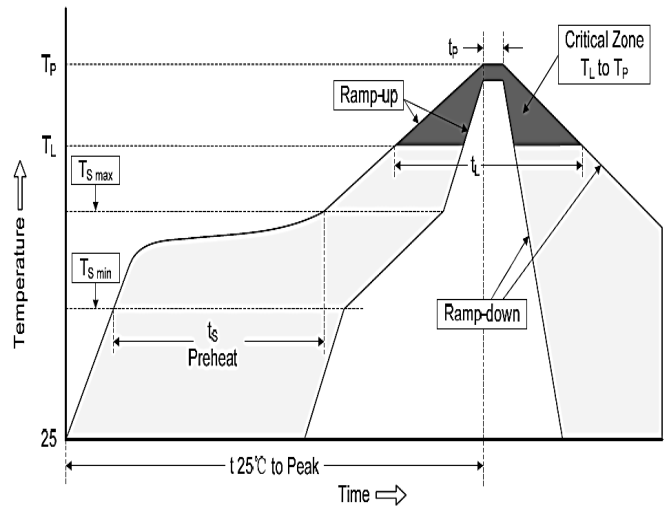
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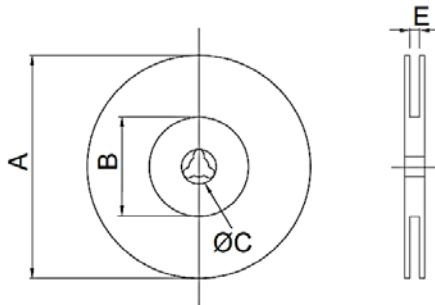
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Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	200°C
	Time (min. to max.) ( $t_s$ )	60~120 seconds
Average ramp up rate ( $T_L$ ) to peak		3°C/second Max.
$T_{s(max)}$ to $T_L$ (Ramp-up rate)		3°C/second Max.
Reflow	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.

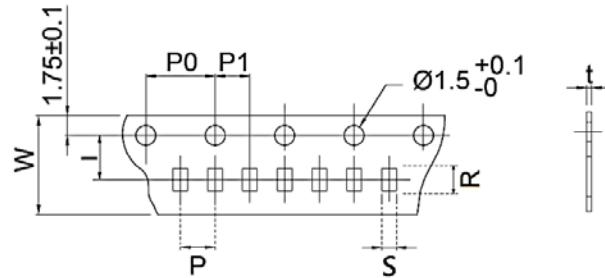


## PACKAGING SPECIFICATION

CARRIER TAPE REELS



TAPE DIMENSION (mm)



Series	Reel Dimension (mm)				Tape Dimensions (mm)					Parts Per Reel
	A	B	C	E	W	P	P0	P1	t	
SIC2-FEI	±1.0	±0.5	±0.2	±0.5	±0.10	±0.10	±0.10	±0.05	±0.03	10,000
SIC4-CEI	178.0	62.0	13.0	9.0	8.00	2.00	4.00	2.00	0.60	4,000

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\*Specifications subject to change without notice.