

# Ceramic Resonator SMD 3.7 x 3.1mm

MRCV series

**MERITEK**

## FEATURE

- Built-In Capacitor Option
- High Reliability Low Cost
- RoHS Compliant



## PART NUMBERING SYSTEM

MRCV   T   5   16M0  
(1)   (2)   (3)   (4)



No	Item	Code	Description	Series Reference
(1)	Meritek Series	MRCV	Resonator Unit	SMD Ceramic Resonator 3.7 x 3.1mm
(2)	Built-In Capacitor	T	T: 3 Pad	T: 3 Pad (with built-in capacitor), A: 2 Pad (without)
(3)	Frequency Accuracy	5	5: $\pm 0.5\%$ (standard)	5: $\pm 0.5\%$ (standard), 3: $\pm 0.3\%$
(4)	Frequency	16M0	16M0: 16.00MHz	8M0 ~ 13M0, 14M74 ~ 50M0 (M denotes decimal point)

Notes:

1. See table below for Standard Built-In Capacitance Values. Contact Meritek for more info regarding non-standard Built-In Capacitance.
2. Contact Meritek for information regarding custom options.

## ELECTRICAL CHARACTERISTICS

Parameters		Characteristic
Frequency Range		8.00 ~ 13.00 MHz, 14.74 ~ 50.00 MHz
Resonant Impedance	8.00 ~ 13.00 MHz	30 $\Omega$ max.
	14.74 ~ 16.00 MHz	60 $\Omega$ max.
	16.01 ~ 25.99 MHz	40 $\Omega$ max.
	26.00 ~ 50.00 MHz	40 $\Omega$ max.
Frequency Accuracy		$\pm 0.5\%$ ( $\pm 0.3\%$ optional)
Temp Coefficient (-25°C ~ +85°C)	8.00 ~ 13.00 MHz	$\pm 0.4\%$
	14.74 ~ 50.00 MHz	$\pm 0.3\%$
Operating Temperature		-25 ~ +85°C
Storage Temperature		-55 ~ +85°C
Withstanding Voltage		50 Vdc max. (DC, 1 min)
Aging		$\pm 0.3\%$ (from initial value)
Insulation Resistance		500 M $\Omega$ min. (@10Vdc, 1 min)
Rating Voltage		6Vdc
		15V p-p
Packaging Unit		1,000 pcs (Tape and Reel)

# Ceramic Resonator SMD 3.7 x 3.1mm

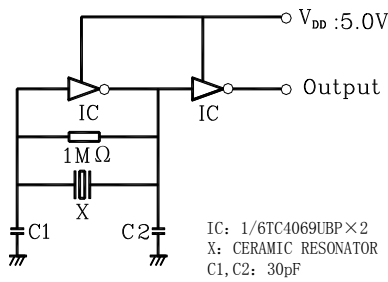
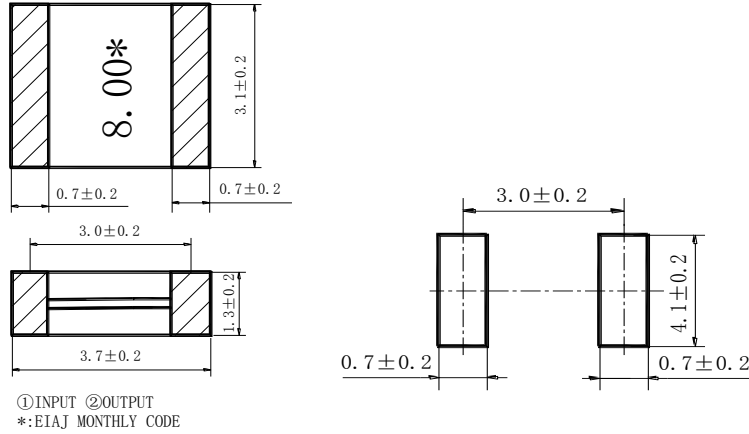
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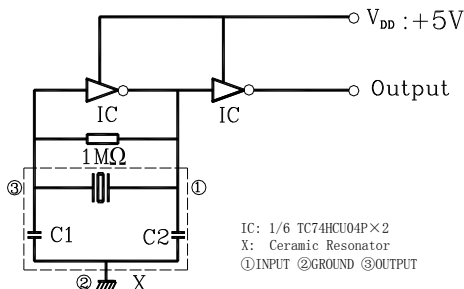
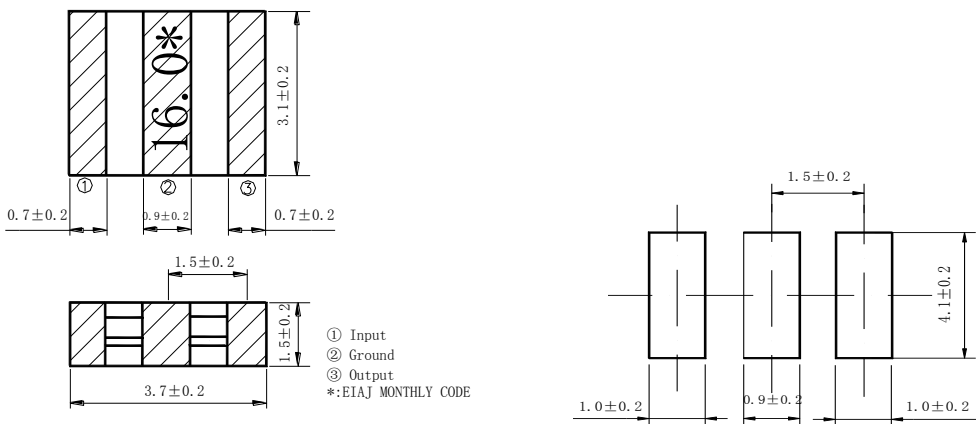
## OUTLINE DRAWING AND TEST CIRCUIT

Test parts under the condition (Temp.: 20±15°C, Humidity: 65±20% R.H.) unless regulated measuring standard condition is (Temp.: 25±2°C, Humidity: 65±5% R.H.)

### MRCVA: 2 Pad - Without Built-In Capacitance



### MRCVT: 3 Pad - With Built-In Capacitance



# Ceramic Resonator SMD

## 3.7 x 3.1mm

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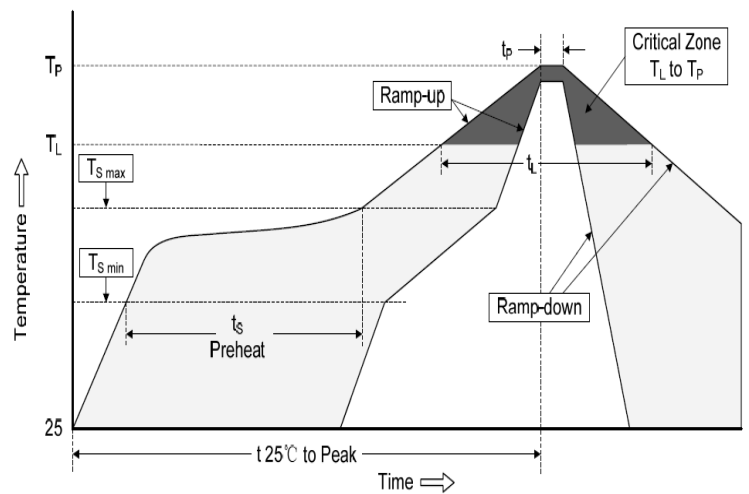
### STANDARD BUILT-IN CAPACITANCE (C1=C2)

Frequency Range	C1=C2 Value
8.00 ~ 13.00 MHz	22pF ±20%
14.74 ~ 16.00 MHz	10, 22pF ±20%
16.01 ~ 25.99 MHz	10pF ±20%
26.00 ~ 50.00 MHz	5pF ±2pF

1. For 3 Pad Built-In Capacitance Resonators only.
2. Values can be used as reference for test circuits of 2 Pad Resonators.

### RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	140°C
	Temp. Max $T_{s(max)}$	170°C
	Time (min. to max.) ( $t_s$ )	80~120 seconds
Average ramp up rate ( $T_L$ ) to peak		1°C/second max.
$T_{s(max)}$ to $T_L$ (Ramp-up rate)		3°C/second max.
Reflow	Temp. ( $T_L$ )	230°C
	Time (min. to max.) ( $t_L$ )	30~40 seconds
Peak Temperature ( $T_P$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		10 seconds max.
Ramp-down Rate		6°C/second



### CAUTION

- Do not apply excess mechanical stress to the components or terminals during soldering.
- Do not bend the component.
- This component is not hermetically sealed. Do not clean or wash the component.
- Do not use strong acidity flux with more than 0.2wt% of chlorine content during flow soldering.
- Keep component away from fire.
- Do not apply any type of re-flow soldering to the component.
- This document specifies the quality and performance of the component as a single unit. The application circuit may affect the performance. Evaluate thoroughly.
- Shelf Life of the component is 12 months after delivery. Keep components in sealed package. Meritek recommends that components stored longer than six months are tested for solderability before use.
- This product is not recommended for Automotive, Medical or Life Critical applications. Contact Meritek to learn more about components for such applications.

\*Specifications subject to change without notice.