

● ELECTRICAL SPECIFICATIONS

Parameters		Value	Unit
Frequency Range		6.000 ~ 60.000	MHz
Frequency Tolerance at 25°C, max		±0.5	%
Frequency Stability over Temperature Range, max	6.00 ~ 13.00	±0.4	%
	13.01 ~ 60.00	±0.3	
Operating Temperature Range	Standard	-20 ~ +85	°C
	Extended 1	-40 ~ +125	
Storage Temperature Range		-55 ~ +125	°C
Load*	6.00 ~ 13.00	22	pF
	13.01 ~ 60.00	10	
Aging For 10 Years		±0.3	%

Note*: Other Loads available. Please consult with the factory

● MECHANICAL SPECIFICATION (A)

L	4.7±0.2
W	4.1±0.2
H	(1.2+A)±0.2
P1	1.0±0.2
P2	0.8±0.2
T	1.95±0.2
T1	0.8±0.2
T2	1.3±0.2
T3	1.95±0.2
W1	5.1±0.2

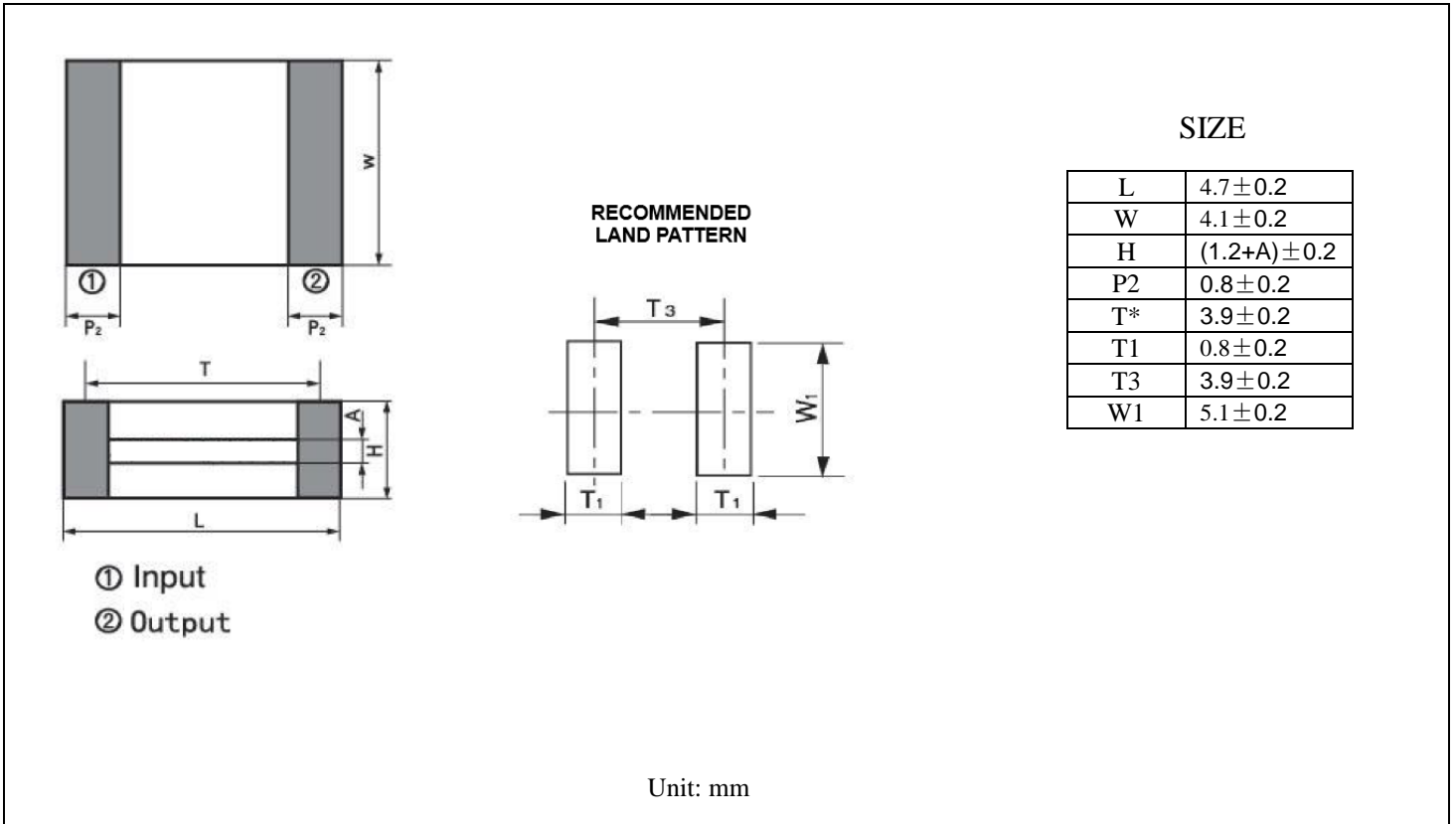
① Input
② Ground
③ Output

Unit: mm

Note:

A stand for thickness of the ceramic element which varies from frequency, the range is 0.1 to 0.7mm

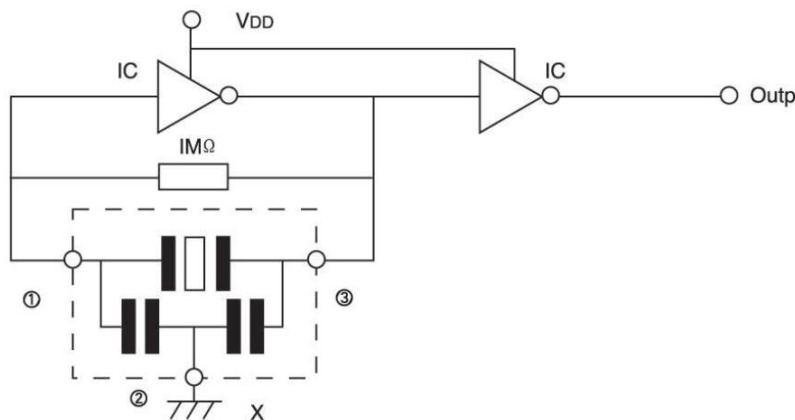
● MECHANICAL SPECIFICATION (B)



Note:

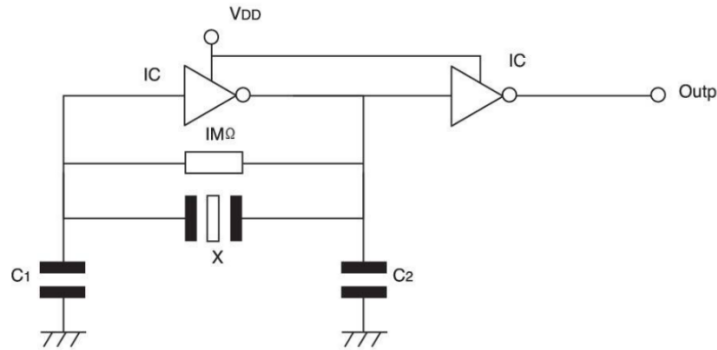
A stand for thickness of the ceramic element which varies from frequency, the range is 0.1 to 0.7mm

● TEST CIRCUIT (A)



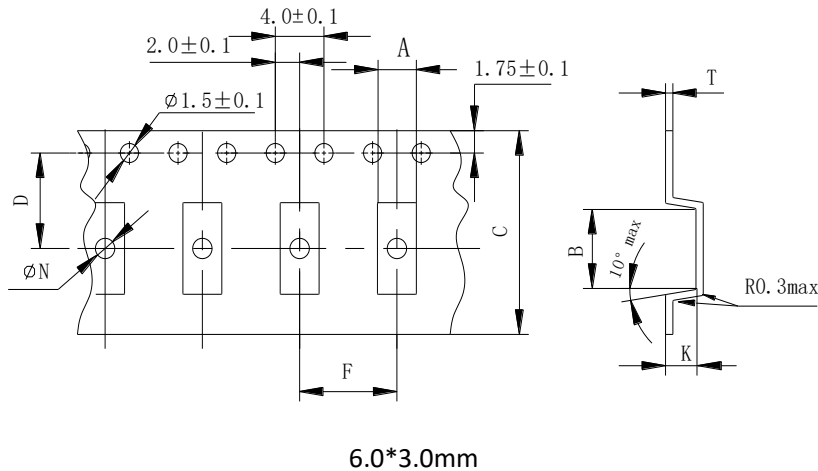
X: Ceramic Resonator
VDD: +5V

● TEST CIRCUIT (B)



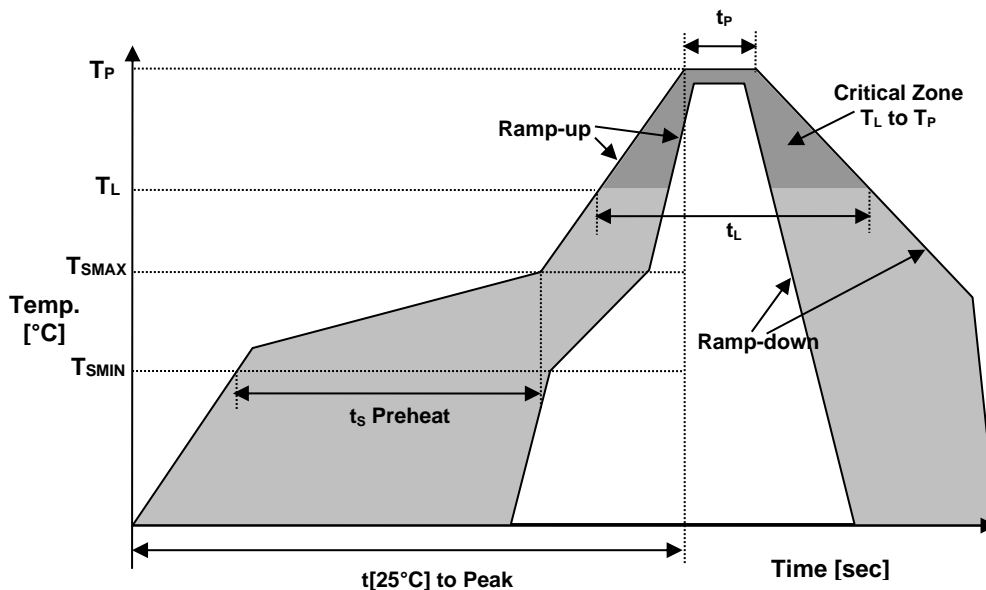
X: Ceramic Resonator
VDD: +5V

● CARRIER TAPE DIMENSIONS



CP	A	B	C	D	F	ΦN	K	T
mm	3.4±0.2	6.5±0.2	16.0±0.2	7.5±0.1	8.0±0.1	1.55±0.1	2.1±0.1	0.3±0.1

REFLOW PROFILE



Reflow profile		
Temperature Min Preheat	T _{SMIN}	140°C
Temperature Max Preheat	T _{SMAX}	160°C
Time (T _{SMIN} to T _{SMAX})	t _s	80-120 sec.
Temperature	T _L	200°C
Peak Temperature	T _P	260°C max
Ramp-up rate	R _{UP}	3°C/sec max.
Ramp-down rate	R _{DOWN}	6°C/sec max.
Time within 5°C of Peak Temperature	t _p	10 sec.
Time t[25°C] to Peak Temperature	t[25°C] to Peak	180 sec.
Time	t _L	20-40 sec.

ENVIRONMENTAL

Parameter	Value
MOISTURE SENSITIVITY LEVEL	1
RoHS	Compliant
REACH SVHC	Compliant
HALOGEN-FREE	Compliant
ESD CLASSIFICATION LEVEL	N/A
TERMINATION FINISH	Sn



● PART NUMBERING SYSTEM

Series	-	Frequency (MHz)	-	Pads	Package type (mm)	-	Operating Temperature (°C)	-	Load (pF)
SMR	-	6.000 ~ 60.000	-	A=2pads B=3pads	4741=4.7x4.1	-	Blank for Standard EXT1=Extended 1	-	22 10

Example: SMR-12.000-A4741-22

SMR, 12.000 MHz, A Two Pads, 4.7 x 4.1mm, from -20°C to +85°C, 22 pF load

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