




**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	P0816- CP2M500000S001
<b>DATE</b>	Aug. 16, 2022
<b>REVISION</b>	A0
<b>DESCRIPTION</b>	MHz SMD Ceramic Resonator, 6030 Type, L6.0*W3.0*H1.5mm, 3 pads 2.5000MHz, Built-in Capacitance, 47 pF Frequency Accuracy +/-0.5%, Operating Temp. Range -25°C ~+85°C, Tape/Reel, Reflow Profile Condition 260 °C Max. RoHS/RoHS III compliant, Tape/Reel
<b>CUSTOMER</b>	
<b>CUSTOMER PART NUMBER</b>	
<b>CROSS REF. PART NUMBER</b>	
<b>ORIGINAL PART NUMBER</b>	TGS CRTP 2.5MG TLF
<b>PART CODE</b>	CP2M500000S001

<b>VENDOR APPROVE</b>		
Issued/Checked/Approved		
		
DATE: Aug. 16, 2022		

<b>CUSTOMER APPROVE</b>	
DATE:	

8/16/2022

**MHZ SMD CERAMIC RESONATOR CRTP SERIES**

**MAIN FEATURE**

- MHz SMD Ceramic Resonator, L6.0\*W3.0\*H1.5mm, 3 pads
- Low cost, Built-in load capacitance type.
- Reflow Profile Condition 260 °C Max.
- Cross more competitors part
- RoHS/RoHS III compliant



**APPLICATION**

- Measurement Instrument
- Communication Electronics

**PART CODE GUIDE**

**RFQ**  
[Request For Quotation](#)

CP	2M500000	S	001
1	2	3	4

- 1) CP: Part family Code for MHz SMD Ceramic Resonator, L6.0\*W3.0\*H1.5mm, 3 pads, CRTP series
- 2) 2M500000: Frequency range code for 2.5000MHz
- 3) S: SMD type, Package Tape/Reel, 4000pcs/Reel
- 4) 001 Specification code for original Part No. **TGS CRTP 2.5MG TLF**

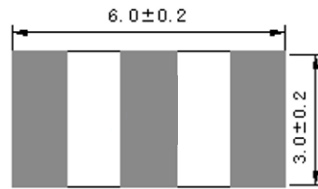
**MHZ SMD CERAMIC RESONATOR CRTP SERIES**

**DIMENSION (Unit: mm, Tol. +/-0.20mm)**

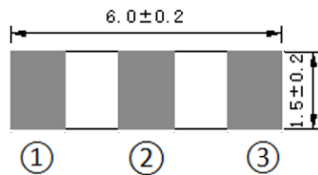
Image for reference



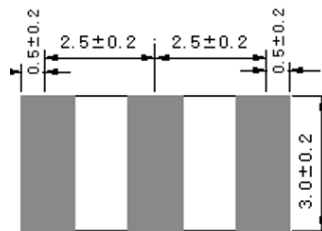
CRTP



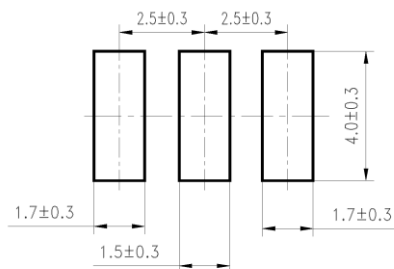
**Marking**  
Frequency Range



**Connection**  
① Input ② Ground ③ Output



**Recommend Pad Layout**



**MHZ SMD CERAMIC RESONATOR CRTP SERIES**
**ELECTRICAL PARAMETERS**

Parameter	Part No. Symbol	Units	Value			Condition
			Min.	Typical	Max.	
<b>Original Manufacturer</b>	TGS	TGS Crystals				
<b>Holder Type</b>	CRTP	SMD Ceramic Resonator, L6.0*W3.0*H1.5mm, 3 pads,				
<b>Frequency Range</b>	2.5	MHz	2.500			
<b>Withstanding Voltage</b>		V	100			@DC, 5s Max.
<b>Insulation Resistance</b>		MΩ	500			@10V, 1 min.
<b>Operation Temperance</b>		°C	-25		+85	
<b>Storage Temperance</b>		°C	-55		+85	
<b>Rating Voltage</b>		V	6			DC
			15			p-p AC
<b>Frequency Accuracy</b>		%	+/-0.5			
<b>Resonant Impedance</b>		Ω			100	
<b>Temperature Coefficient of Oscillation Frequency</b>		%			+/-0.3	Oscillation Frequency drift, -25°C ~ +85°C)
<b>Oscillation Frequency Aging Rate (10 years)</b>		%			+/-0.10	From initial value
<b>IC application</b>			1/6TC4069UBPx2			
<b>Design Mode</b>	MG					
<b>Built-in Capacitance</b>		pF	47			
<b>Other</b>	<b>Package</b>	T	Tape/Reel			
	<b>RoHS Status</b>	LF	RoHS III compliant			
	<b>Add Value</b>		N/A			
	<b>Internal Control Code *</b>		N/A			

Note: 1) Original Part Number: **TGS CRTP 2.5MG TLF**

2) \* Internal Control Code- 2 letter or digits; Blank: N/A

**MHZ SMD CERAMIC RESONATOR CRTP SERIES**
**RELIABILITY**

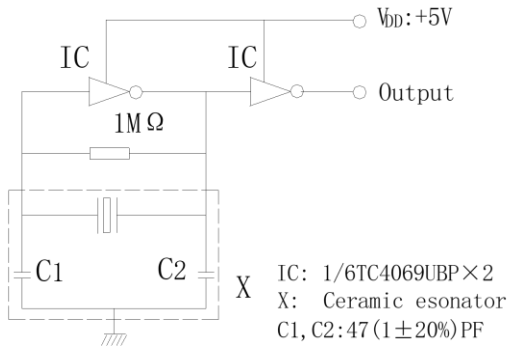
Test Items	Test Method And Conditions	Performance Requirements
<b>Humidity</b>	Keep the resonator at 60°C±2°C and 90%-95% RH for 1000h. Then Release the resonator into the room Condition for 1h prior to the Measurement.	It shall fulfill the specifications in Table 1.
<b>High Temperature Exposure</b>	Subject the resonator to 85°C±2°C for 1000h, then release the resonator into the room conditions for 1h prior to the measurement.	It shall fulfill the specifications in Table 1.
<b>Low Temperature Exposure</b>	Subject the resonator to -40°C±2°C for 1000h, then release the resonator into the room conditions for 1h prior to the measurement.	It shall fulfill the specifications in Table 1.
<b>Temperature Cycling</b>	After temperature cycling of blow table was performed 5 times, resonator shall be measured after being placed in natural conditions for 1h. Time: 30 min.@ -25 +/-3°C ; Time: 30 min. @85 +/-3°C	It shall fulfill the specifications in Table 1.
<b>Vibration</b>	Subject the resonator to vibration for 2h each in x, y and z axis With the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10 Hz—55Hz.	It shall fulfill the specifications in Table 1.
<b>Mechanical Shock</b>	Drop the resonator randomly onto a wooden floor from the height of 100cm 3 times.	It shall fulfill the specifications in Table 1.
<b>Soldering Test</b>	Passed through the re-flow oven under the following condition and left at room temperature for 1h before measurement	It shall fulfill the specifications in Table 1.
<b>Solder Ability</b>	Dipped in 245°C±5°C solder bath for 3s±0.5 s with rosin flux (25wt% ethanol solution.)	The terminals shall be at least 95% covered by solder.
<b>Board Bending</b>	Mount a glass-epoxy board (Width=40mm,thickness=1.6mm),then bend it to 1mm displacement and keep it for 5s. (See the following figure 1)	Mechanical damage such as breaks shall not occur.

**Table 1**

Item	Specification after test
Oscillation Frequency Change $\Delta F_{osc}/F_{osc}$ (%) max	±0.3
Resonant Impedance ( $\Omega$ ) max	105
The limits in the above table are referenced to the initial measurements.	

**MHZ SMD CERAMIC RESONATOR CRTP SERIES**

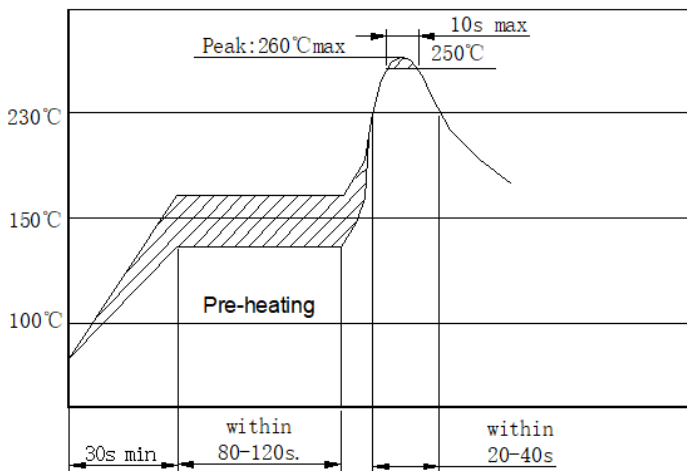
**TEST CIRCUIT (For Reference Only)**



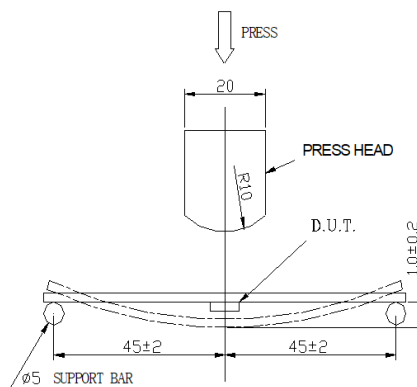
**Note:**

Parts shall be tested under the condition (Temp.: 20±15°C, Humidity 65±20% R.H.) unless the standard condition (Temp.: 25±3 °C, Humidity :65±10% R.H.) is regulated to measure.

**SUGGESTED REFLOW PROFILE (For Reference Only)**



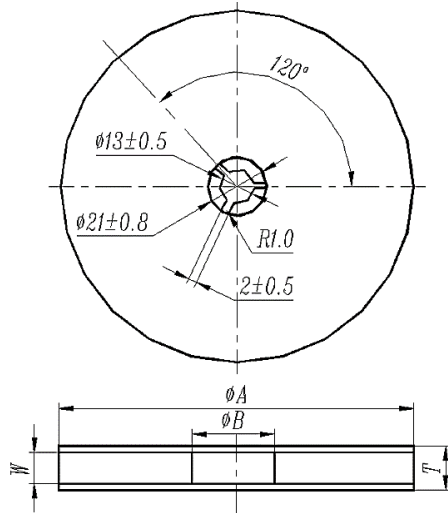
**BOARD BENDING TEST- FIGURE 1**



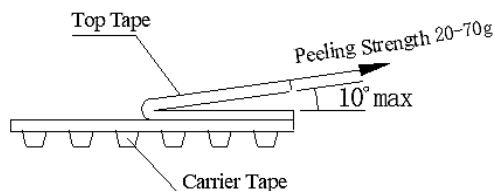
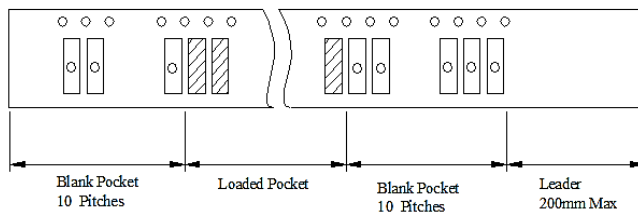
**MHZ SMD CERAMIC RESONATOR CRTP SERIES**

**TAPE/REEL (Unit: mm)**

All Devices are packed in accordance with EIA standard RS-481-2 and specifications. 4000pcs/Reel



Symbol	Dimension
$\phi A$	330 $\pm$ 3.0
$\phi B$	80.0 Min.
W	16.4 Min.
T	22.4 Max.



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