




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	P0915 - XN16M00000S100
DATE	Sept. 15, 2022
REVISION	A0
DESCRIPTION	SMD Crystal, 49SMD Type, L11.4*W4.7*H2.6mm, 2 pads, 16.00MHz, +/-30ppm, CL 20pF, Stability +/-30ppm @Operating Temp. Range -20°C ~+70°C, ESR 40 ohm Max, Tape/Reel, Reflow Profile Condition 260 °C Max. RoHS/RoHS III compliant
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	TGS CSSM5 16M0A30-20-30-20-40 TLF
PART CODE	XN16M00000S100

VENDOR APPROVE			
Issued/Checked/Approved			
DATE: Sept. 15, 2022			

CUSTOMER APPROVE	
DATE:	

9/15/2022

SMD CRYSTAL CSSM5 TYPE 2 PADS

MAIN FEATURE

- SMD Crystal, CSSM5 Type, L11.4*W4.7*H2.6mm, 2 pads
- Low cost, High precision, High frequency stability
- Reflow Profile Condition 260 °C Max.
- Wide Frequency Range
- Cross more competitors part
- RoHS/RoHS III compliant



APPLICATION

- Bluetooth, wireless communication set
- Communication Electronics

PART CODE GUIDE

RFQ
Request For Quotation

XN	16M00000	S	100
1	2	3	4

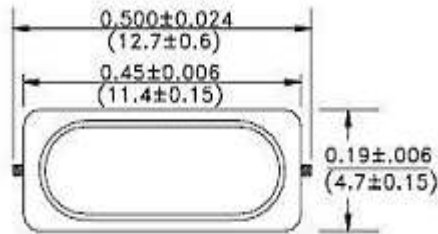
- 1) XN: Part family Code for SMD Crystal, CSSM5 Type, L11.4*W4.7*H2.6mm, 2 pads
- 2) 16M00000: Frequency range code for 16.00000MHz
- 3) S: SMD type, Package Tape/Reel, 1000pcs/Reel
- 4) 100: Specification code for original part No.: **TGS CSSM5 16M0A30-20-30-20-40 TLF**

DIMENSION (Unit: Inch/mm)

Image for reference

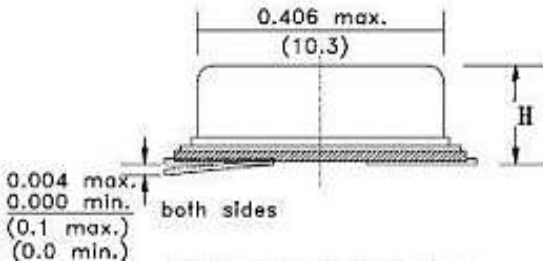


CSSM5

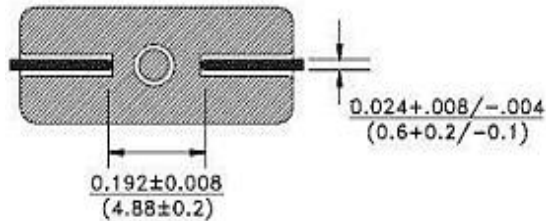


Marking

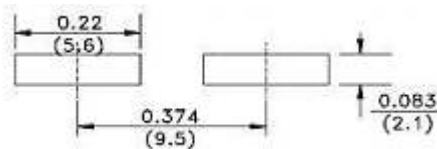
Line 1: Frequency Range



H: 2.6 Max.



Recommend Pad Layout



SMD CRYSTAL CSSM5 TYPE 2 PADS
ELECTRICAL PARAMETERS

Parameter	Part No. Symbol	Units	Value			Condition
			Min.	Typical	Max.	
Original Manufacturer	TGS	TGS Crystals				
Holder Type	CSSM5	SMD Crystal, CSSM5 Type, L11.4*W4.7*H2.6mm, 2 pads				
Frequency Range	16M0	MHz	16.000			
Mode of Oscillation	A	AT Fundamental				
Frequency Tolerance	30	ppm	-30		+30	@25°C
Load Capacitance	-20	pF	20			
Stability over Operation Temperature	-30	ppm	-30		+30	
Operation Temperature	-20	°C	-20		+70	
Storage Temperature		°C	-40		+85	
Equivalent Series Resistance (ESR)	-40	Ω			40	
Drive Level		μW			100	
Shunt Capacitance (C0)		pF	0		7.0	
Motional Capacitance (C1)		fF	N/A			
DLD2		Ω	N/A			
FLD2		ppm	N/A			
RDL2		Ω	N/A			
SPDB		dB	N/A			
Aging		ppm/year			±3	@1 st year
Insulation Resistance		MΩ	500			@100VDC ± 15VDC
Others	Package	T	Tape/Reel			
	RoHS Status	LF	RoHS III compliant			
	Add Value		N/A			
	Internal Control Code *		N/A			

Note: 1) Original Part Number: **TGS CSSM5 16M0A30-20-30-20-40 TLF**

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

SMD CRYSTAL CSSM5 TYPE 2 PADS

RELIABILITY

Test Items	Test Method And Conditions	Reference Documents
High Temperature High Humidity Storage	Temperature: 85°C±3°C Relative Humidity:85%RH Time: 96 Hours	JIS C5023
High Temperature Storage	Temperature: 125°C±3°C Time: 96 Hours.	MIL-STD-883E Method 1005.8
Low Temperature Storage	Temperature: -40°C±3°C Time: 96 Hours.	MIL-STD-883E Method 1013
Thermal Shock	Temperature 1: -55°C±5°C Temperature 2: 85°C±5 °C Temperature change between T1 and T2 5 min 10cycles maintain T1 and T2 for 30 minutes each cycle	MIL-STD-202F Method 107 Condition A
Resistance to Solder Heat	Solder Temperature: 260°C±5°C Time: 10±1 Seconds	MIL-STD-202F Method 210E
Solderability	The solder pot temperature is 245±5°C , dwell time 5±0.5sec	J-STD-002B
Drop Test	3 Times Free Fall from 50cm height table to 3cm thickness hard wood board	J-STD-002B
Mechanical Shock	Half sine wave,1000 G 3 Times for all 3 directions(X,Y Z)	MIL STD 202F Method 213B
Vibration	Frequency Range: 10Hz ~ 55Hz Amplitude: 0.75mm 2 Hours in each direction, total 6 Hours	MIL-STD-883E Method 2007.3
Leakage Test	Take measurements with a helium Leakage detector Leakage Rate≤1×10 ⁻³ Pa cm ³ /s	MIL-STD-883E

SMD CRYSTAL CSSM5 TYPE 2 PADS

SUGGESTED REFLOW PROFILE (For Reference Only)

Total time: 200 Sec. Max. Solder melting point: 220°C

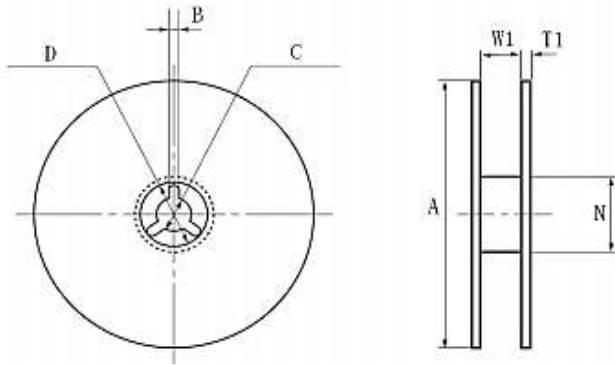


Profile Feature		Pb-Free Assembly
Average Ramp-up Rate (Ts Max to Tp)		3°C/second Max
Preheat	Temperature Min (Ts Min.)	125°C
	Temperature Max (Ts Max.)	200°C
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	217°C
	Time (t_L)	60 ~ 150 seconds
Peak/Classification Temperature (T_p)		260 °C
Time within 5°C of actual Peak Temperature (t_p)		20 ~ 40 seconds
Ramp-down rate		6 °C /Second Max.
Time 25 °C to Peak Temperature		8 minutes Max.
Suggest reflow times		3 Times Max.

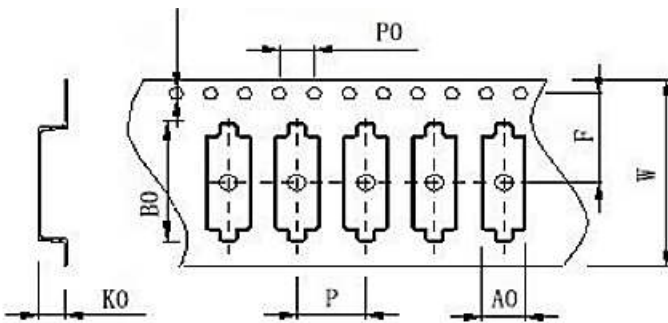
SMD CRYSTAL CSSM5 TYPE 2 PADS

TAPE/REEL (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-2 and specifications., 1000pcs/Reel



Symbol	Dimension
A	$\phi 330 \pm 1.0$
B	2.50 ± 0.50
C	$\phi 13.5 \pm 0.50$
D	$\phi 21.0 \pm 1.00$
N	$\phi 99.0 \pm 1.00$
W1	24.5 ± 1.00
T1	2.3 ± 0.50
W	24.00 ± 0.30
F	11.5 ± 0.10
P	12.00 ± 0.10
P0	4.00 ± 0.10
A0	5.00 ± 0.10
B0	15.0 ± 0.10
K0	4.40 ± 0.10



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