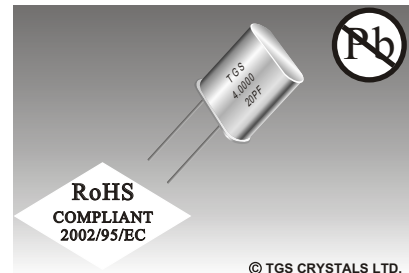


## FEATURES

- HC-49U & HC-49 T Package
- Resistance Weld Seal
- Tight Tolerance and Stability over Temperature
- Available in 3 pins
- Offer Low Cost Metal Case with Ink Marking
- Lead Free available
- Offer Fitted Insulators, Cropped Lead & Crimped Leads

## APPLICATIONS

- Microprocessor Systems
- Data Communications
- Consumer Electronics
- Automotive Electronics



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## SPECIFICATION \*

Parameters	Product		Option Code	
	49U	49T	CU	CT
Frequency Range:	1.8432~200MHz		△	
Oscillation Mode:			Specify	
AT Fund.(1.8432~40MHz)	△		A	
BT Fund.(20~40MHz)	△		B	
3rd OT (23~100MHz)	△		C	
5th OT (60~150MHz)	△		D	
7th OT (120~200MHz)	△		E	
Frequency Tolerance:			Specify	
±5ppm	△		5	
±10ppm	△		10	
±20ppm	△		20	
±30ppm	△		30	
±50ppm	▲		50	
Other Values	△		Specify	
Load Capacitance:			Specify	
12pF	△		12	
16pF	△		16	
18pF	△		18	
20pF	▲		20	
30pF	△		30	
Series Resonant	△		S	
Other Values	△		Specify	
Frequency Stability:			Specify	
±10ppm	△		10	
±20ppm	△		20	
±30ppm	△		30	
±50ppm	▲		50	
Other Values	△		Specify	
Operating Temp. Range:			Specify	
0℃~+50℃	△		0	
-10℃~+60℃	▲		10	
-20℃~+70℃	△		20	
-40℃~+85℃	△		40	
Other Values	△		Specify	
Storage Temp. Range:	-40℃~+85℃		▲	
Equivalent Series Resistance (ESR):	See Table 1		△	
Drive Level:	1000 uW Max.		▲	
Shunt Capacitance (C 0):	7.0 pF Max.		▲	
Aging:	±5ppm Max.		▲	
Package:	AMNO-Pack		△	
Bulk			△	
Tape/Reel			△	
Other Values:	3 pins		△	
Leads Cropped to 4.0mm Min.			△	
Fitted Insulating Washer			△	
Crimped Leads			△	
Low Cost Case, Ink Marking			△	
Lead Free			△	

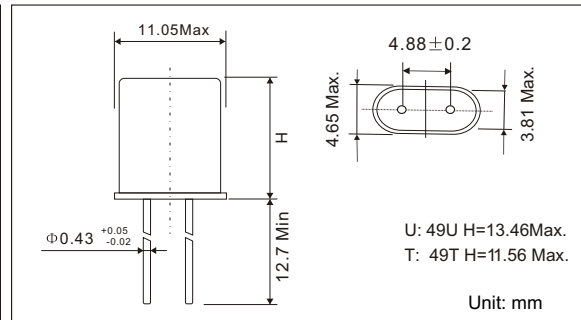
▲ Standard \* Specifications Subject to Change Without Notice  
 △ Optional: please specify required code when inquiring or ordering

## PARTNUMBER GUIDE

TGS	C	U	4M0	A	50	-20	-50	-10	-100	-B	L4.0
Mark	Quartz Crystals	U:49U T:49T	Freq. Range	Oscillation Mode	Freq. Tolerance	Load Capacitance	Freq. Stability	Operating Temp. Range	ESR	Package	Other Values

e.g. Full P/N.: TGS CU 4M0A50-20-50-10-100B L4.0 ; Short P/N.: CU 4M0A20B L4.0 (Others is standard Spec.)

## DIMENSIONS



## ESR VALUES

Table 1

Frequency Range ( MHz)	ESR Max (ohm)	Frequency Range ( MHz)	ESR Max (ohm)
1.8432 ~ 2.3990	650	6.0000 ~ 7.9990	60
2.4000 ~ 2.9990	300	8.0000 ~ 12.999	40
3.0000 ~ 3.4990	250	13.000 ~ 29.999	35
3.5000 ~ 3.9990	120	30.000 ~ 89.999	60
4.0000 ~ 4.9990	100	90.000 ~ 150.99	100
5.0000 ~ 5.9990	70	151.00 ~ 200.00	120

## STANDARD FREQUENCIES

Frequency in MHz

1.843200	5.000000	10.00000	15.36000	24.57600
2.000000	5.068800	10.24000	16.00000	25.00000
2.097152	6.000000	10.25000	16.38400	27.00000
2.457600	6.144000	10.24500	17.734475	32.00000
3.276800	7.000000	11.05920	18.43200	32.76800
3.579545	7.200000	11.28960	19.66080	36.00000
3.686400	7.372800	12.00000	20.00000	40.00000
4.000000	7.680000	12.28800	20.48000	48.00000
4.032000	8.000000	12.80000	20.94500	50.00000
4.096000	8.192000	13.50000	21.48000	60.00000
4.194304	9.216000	14.31818	22.11840	64.00000
4.433619	9.600000	14.74560	24.00000	
4.915200	9.830400	15.00000	24.00014	

## PACKAGE

- Standard package in bulk: 100pcs/bag, 10 bags/inner box, 10 boxes/carton
- Available on T/R & AMNO-Pack - 1000pcs per reel. See page 114 for detail dimensions

