

SMD CYLINDRICAL CRYSTALS

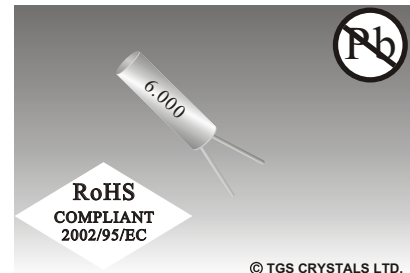
TGS SERIES NO. : CCMF/CCMG/CCMH

FEATURES

- Heat-resisting package, Reflowsoldering
- Emboss Taping package

APPLICATIONS

- Communication Equipment ● AVEquipment
- OA Equipment ● Measuring instruments.



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SPECIFICATION *

Parameters	Product	Option Code
Frequency Range: 3.579545~5.9990MHz 6.0000~9.9990MHz 10.000~60.000MHz	SMD Φ3X10 SMD Φ3X8 SMD Φ3X9	CCMF CCMG CCMH
Oscillation Mode: AT Fund.(3.579545~20.0MHz) BT Fund.(20~27MHz) 3rd OT(27~60.000MHz)	△ △ △	A B C
Frequency Tolerance: ±20ppm ±30ppm ±50ppm Other Values	△ △ ▲ △	20 30 50 Specify
Load Capacitance: 16pF 20pF 30pF Other Values	△ ▲ △ △	16 20 30 Specify
Frequency Stability: ±30ppm ±50ppm Other Values	△ ▲ △	30 50 Specify
Operating Temp. Range: -40℃~+85℃ Other Values	▲ △	40 Specify
Turnover Temp. (To): +25℃+5℃	▲	
Equivalent Series Resistance (ESR): See Table 1	△	Specify
Drive Level: 100 uW Max.	▲	
Shunt Capacitance (C 0): 5.0pF Max.	▲	
Aging: ±5ppm Max.	▲	
Package: Tape/Reel	△	T

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

ESR VALUES

Table 1

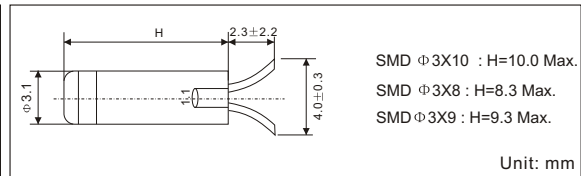
Frequency Range (MHz)	ESR Max (ohm)	Frequency Range (MHz)	ESR Max (ohm)
3.579545~3.999000	180	10.00000~11.99000	70
4.000000~4.490000	150	12.00000~13.99000	60
4.500000~4.990000	120	14.00000~15.99000	50
5.000000~6.990000	100	16.00000~60.00000	40
7.000000~9.990000	80		

PART NUMBER GUIDE

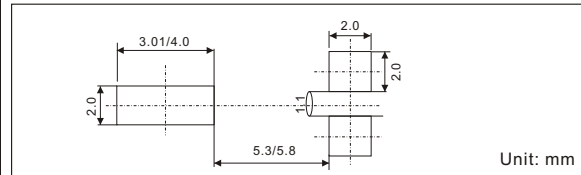
TGS	CC	M	F	12M0	A	50	-16	-50	-40	-70	-B
Mark	Cylindrical Crystals	SMD Type	F: SMD Φ3X10 G: SMD Φ3X8 H: SMD Φ3X9	Frequency Range	Oscillation Mode	Freq. Tolerance	Load Capacitance	Freq. Stability	Operating Temp. Range	ESR	Package

e.g. Full P/N.: TGS CCMF 12M0A50-16-50-40-70 T
Short P/N.: CCMF 12M0A16T (Others is standard Spec.)

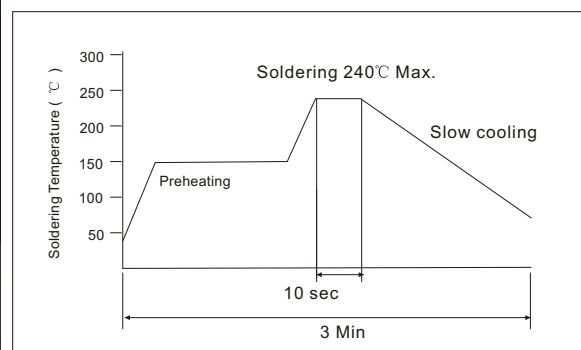
DIMENSIONS



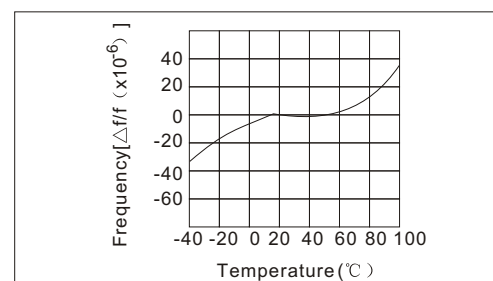
RECOMMENDED SOLDER PAD LAYOUT



SOLDER REFLOW PROFILE



AT-CUT CRYSTAL UNITS



PACKAGE

- Standard package in T/R: 3000pcs/Reel, 2Reel/box, 5box/carton
See page 121 for detail dimensions

