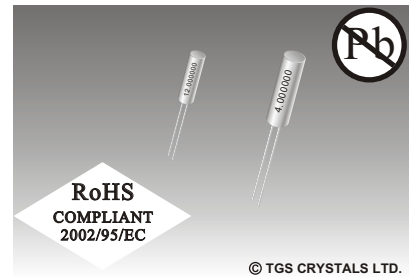


FEATURES

- Wide Frequency Range
- Small Size
- High Shock Tolerance
- Good Frequency Stability
- Different Size at  $\Phi 3 \times 8$ mm,  $\Phi 3 \times 9$ mm,  $\Phi 3 \times 10$ mm

APPLICATIONS

- Microprocessor Systems
- Instrumentation
- Consumer Electronics
- Automotive Electronics



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SPECIFICATION \*

Parameters	Product	Option Code
Frequency Range: 3.579545~70.0MHz	$\Phi 1 \times 5$	CCF
3.579545~70.0MHz	$\Phi 3 \times 8$	CCD
Oscillation Mode: AT Fund.(3.579545~20.0MHz) BT Fund.(20~27MHz) 3rd OT(27~60.0000MHz)	$\Delta$ $\Delta$ $\Delta$	A B C
Frequency Tolerance: $\pm 20$ ppm $\pm 30$ ppm $\pm 50$ ppm Other Values	$\Delta$ $\Delta$ $\blacktriangle$ $\Delta$	20 30 50 Specify
Load Capacitance: 16pF 20pF 30pF Other Values	$\Delta$ $\blacktriangle$ $\Delta$ $\Delta$	16 20 30 Specify
Frequency Stability: $\pm 30$ ppm $\pm 50$ ppm Other Values	$\Delta$ $\blacktriangle$ $\Delta$	30 50 Specify
Operating Temp. Range: -10°C~-+60°C -20°C~-+70°C Other Values	$\blacktriangle$ $\Delta$ $\Delta$	10 20 Specify
Turnover Temp. (To): +25°C+5°C	$\blacktriangle$	
Equivalent Series Resistance (ESR): See Table 1	$\Delta$	Specify
Drive Level: 100 uW Max.	$\blacktriangle$	
Shunt Capacitance (C 0): 5.0pF Max.	$\blacktriangle$	
Aging: $\pm 5$ ppm Max.	$\blacktriangle$	
Package: Bulk	$\Delta$	B

$\blacktriangle$  Standard \* Specifications subject to change without notice  
 $\Delta$  Optional: please specify required code when inquiring or ordering

PACKAGE

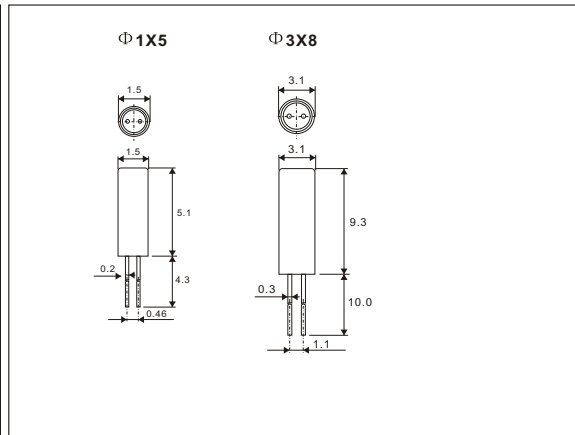
- Standard package in bulk: 500pcs/bag, 10 bags/inner box, 10 box/carton

PARTNUMBER GUIDE

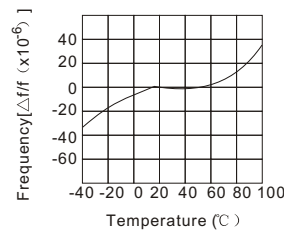
TGS	CC	C	6M0	A	50	-20	- 50	-10	-180	- B
Mark	Cylindrical Crystals	D: $\Phi 3 \times 8$ mm F: $\Phi 1 \times 5$ mm	Frequency Range	Oscillation Mode	Freq. Tolerance	Load Capacitance	Freq. Stability	Operating Temp. Range	ESR	Package

e.g. Full P/N.: TGS CCD 6M0A50-20-50-10-180 B  
 Short P/N.: CCD 6M0A20 B (Others is standard Spec.)

DIMENSIONS



AT-CUT CRYSTAL UNITS



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		

