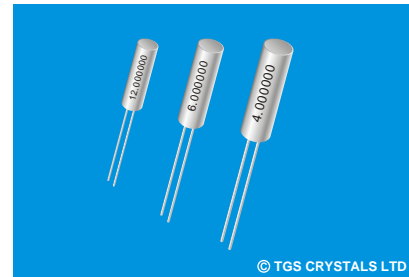


FEATURES

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

APPLICATIONS

- Microprocessor Systems
- Instrumentation
- Consumer Electronics
- Automotive Electronics



SPECIFICATION *

Parameters	Product	Option Code
Frequency Range: 3.579545~6.000MHz 6.0000~10.0000MHz 10.000~60.0000MHz	$\Phi 3 \times 10$	CCE
	$\Phi 3 \times 8$	CCD
	$\Phi 3 \times 9$	CCC
Oscillation Mode: AT Fund.(3.579545~20.0MHz) BT Fund.(20~27MHz) 3rd OT(27~60.0000MHz)	\triangle	A
	\triangle	B
	\triangle	C
Frequency Tolerance:	$\pm 20\text{ppm}$	\triangle 20
	$\pm 30\text{ppm}$	\triangle 30
	$\pm 50\text{ppm}$	\blacktriangle 50
	Other Values	\triangle Specify
Load Capacitance:	16pF	\triangle 16
	20pF	\blacktriangle 20
	30pF	\triangle 30
	Other Values	\triangle Specify
Frequency Stability:	$\pm 30\text{ppm}$	\triangle 30
	$\pm 50\text{ppm}$	\blacktriangle 50
	Other Values	\triangle Specify
Operating Temp. Range:	$-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$	\blacktriangle 10
	$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$	\triangle 20
	Other Values	\triangle Specify
Turnover Temp. (To):	$+25^{\circ}\text{C} \sim +5^{\circ}\text{C}$	\blacktriangle
Equivalent Series Resistance (ESR): See Table 1	\triangle	Specify
Drive Level:	100 μW Max.	\blacktriangle
Shunt Capacitance (C0):	5.0pF Max.	\blacktriangle
Aging:	$\pm 5\text{ppm}$ Max.	\blacktriangle
Package:	Bulk	\triangle B

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

PACKAGE

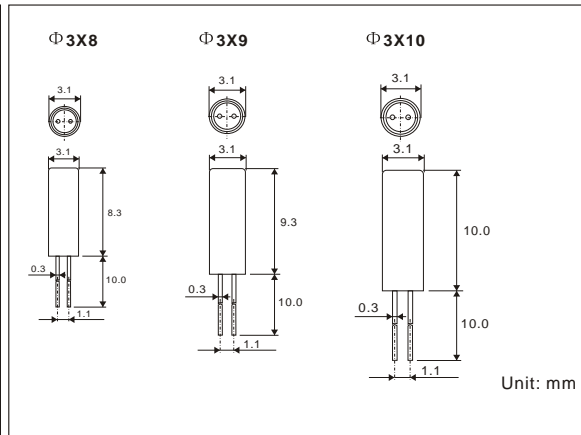
- Standard package in bulk: 500pcs/bag, 10 bags/inner box, 10 box/carton

PARTNUMBER GUIDE

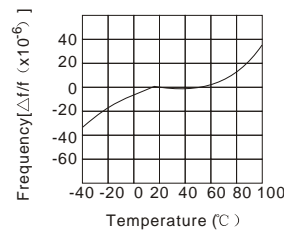
TGS	CC	C	6M0	A	50	-20	-50	-10	-180	-B
Mark	Cylindrical Crystals	D: $\Phi 3 \times 8\text{mm}$ C: $\Phi 3 \times 9\text{mm}$ E: $\Phi 3 \times 10\text{mm}$	Frequency Range	Oscillation Mode	Freq. Tolerance	Load Capacitance	Freq. Stability	Operating Temp. Range	ESR	Package

e.g. Full P/N.: TGS CCC 6M0A50-20-50-10-180 B
 Short P/N.: CCC 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		