



L8.0*W3.8*H2.4mm

MAIN FEATURE

- 32.768KHz • Plastic Package • High Precision & Reliability

APPLICATION

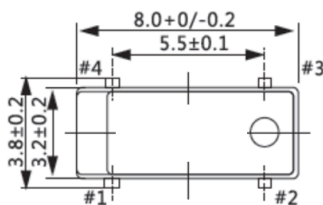
- Notebook computer, TV, STB, LCDM and more

STANDARD SPECIFICATION

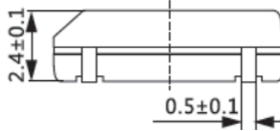
Parameter	Value			Unit	Condition
	Min.	Type	Max.		
Frequency Range	30.00	32.768	200.00	KHz	
Oscillation Mode	AT Fund.				
Frequency Tolerance	-	±20		ppm	@25 °C or Specify
Operating Temperature Range	-40	-	+85	°C	CL: 7.0pF, 9.0pF or Specify See Part number Guide for option
Storage Temperature Range	-55	-	+125	°C	
Load Capacitance (CL)	-	12.5	-	pF	
Frequency/Temp Coefficient	0.028	0.034	0.04	ppm/C ²	
Turnover Temp	+20	+25	+30	°C	
Equivalent Series Resistance		-	50	Kohm	
Drive Level	-	-	1.0	µW	
Shunt Capacitance	0.9	1.35	2.0	pF	
Dynamic Capacitance	-	1.8	-	Ff	
Quality Factor		60000			
Capacitance Ratio	-	450	-		
Aging per year	-	±3		ppm/year	
Insulation Resistance	500	-	-	Mohm	@ 100Vdc ± 15V

DIMENSION (+/-0.1mm)

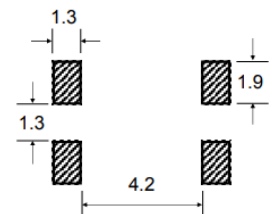
Top View



Side View



Solder Pattern



Connection
#1 In/Out
#2 Ground
#3 Ground
#4 Out/In

PART NUMBER GUIDE

Example: TGS CCMC 32K768A20-12.5-40-50 TLH

Part Number and Part Code Structure

TGS	CCMC	32K768	A	20	-12.5	-40	-50	T	LH	XX
1	2	3	4	5	6	7	8	9	10	11

- 1) TGS: Company Code
- 2) CCMC: KHz Plastic SMD Crystals, 2 pads L8.0*W3.8*H2.4mm
- 3) 32K768: Frequency Range 32.768000KHz or specify from 30.00~200.00KHz
- 4) A: Oscillation Mode, AT Fund.
- 5) 20: Frequency tolerance: +/-20ppm or specify
- 6) 12.5: Load Capacitance, 12.5pF; 9: 9.0pF or Specify
- 7) 40: Operating Temp. Range -40°C ~+85°C, 10: -10°C ~+60°C; 20: -20°C ~+70°C or specify
- 8) 50: Equivalent Series Resistance, 50 Kohm Max.
- 9) T: Package in Tape/Reel, 1000pcs/Reel
- 10) LH: RoHS//RoHS II compliant

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

TGS Crystals Ltd. reserves the right to make changes to the product(s) and or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.