

CRYSTAL OSCILLATOR UNIT WITH HCSL OUTPUT IN CERAMIC SEAM SEAL SMD PACKAGE, SIZE 7.0 X 5.0MM WITH 6 PADS.

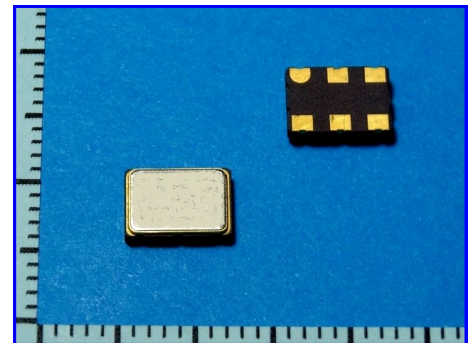
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PRODUCT FEATURES

- SMD PACKAGE SIZE 7.0 X 5.0 X 1.6MM WITH 6 PADS.
- WIDE FREQUENCY RANGE 12 TO 180MHZ
- ULTRA LOW JITTER AND PHASE NOISE.
- HIGHLY RELIABLE SEAM SEAL PACKAGE AND LOW AGING.

APPLICATIONS

- HIGH SPEED NETWORKING
- HIGH SPEED CLOCKS
- TELECOM EQUIPMENT



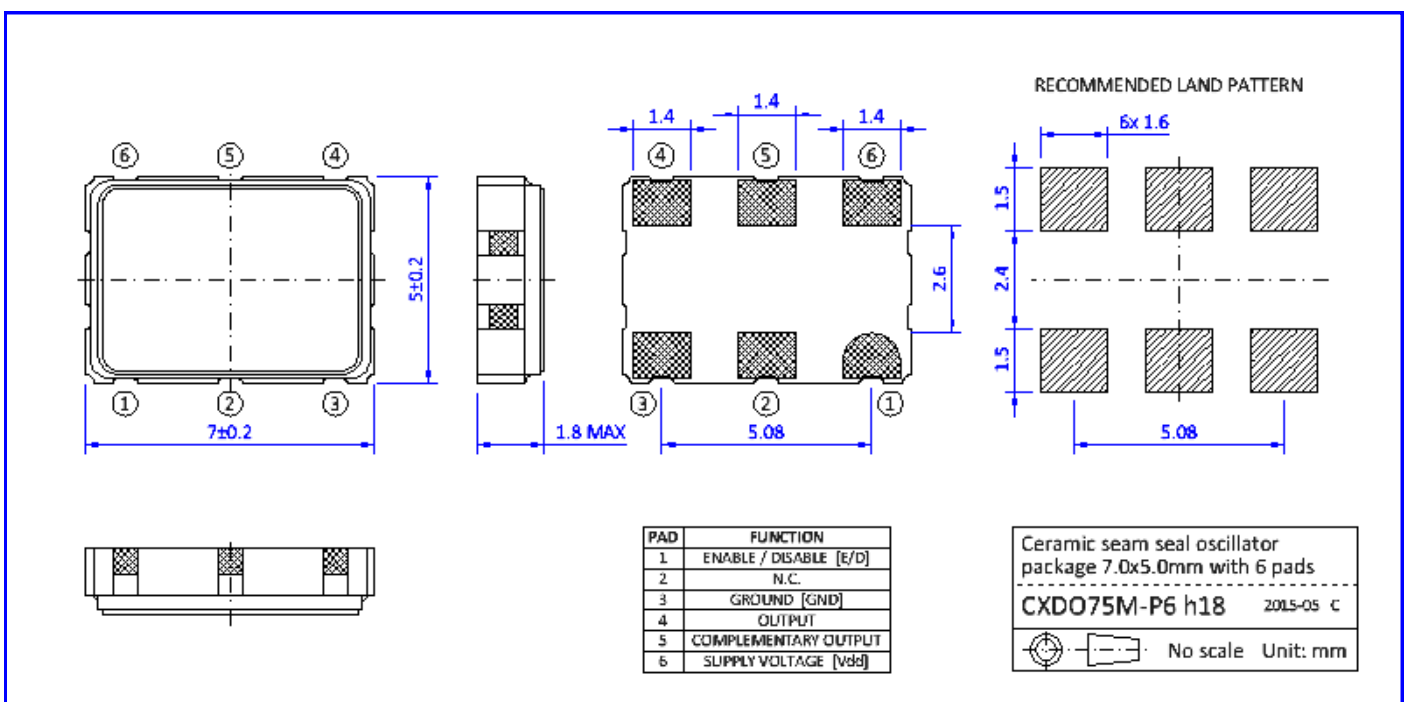
PRODUCT SPECIFICATIONS

PARAMETER	SYMBOL	PARAMETER VALUES / LIMITS	CONDITIONS / REMARKS
NOMINAL FREQUENCY	F_N	12.0 ~ 180.0MHZ	FUNDAMENTAL OR 3RD OVERTONE DESIGN
SUPPLY VOLTAGE RANGE	V_{DD}	2.5V / 3.3V	—
SUPPLY CURRENT CONSUMPTION	I_{DD}	<50mA	TYPICAL, SEE NOTE 1
OVERALL FREQUENCY STABILITY	$\Delta f/F_N$	± 25 PPM, ± 50 PPM, ± 100 PPM	SEE NOTE 2, OTHERS AVAILABLE
OPERATING TEMPERATURE RANGE	T_{OP}	$-10^{\circ}\text{C} \sim +70^{\circ}\text{C}$ OR $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	OTHER OPTIONS AVAILABLE
AGING FIRST YEAR	$(\Delta f/F_N)y1$	± 3 PPM	@+25°C
OUTPUT WAVEFORM / LOAD	— / R_L	HCSL / 50Ω	—
OUTPUT VOLTAGE LEVELS	V_{OH}/V_{OL}	0.740V TYP / 0V TYP	—
OUTPUT VOLTAGE SWING	ΔV_{OUT}	600mV / 650mV TYP	@ $V_{DD}2.5V$ / @ $V_{DD}=3.3V$
RISE AND FALL TIMES	t_R AND t_F	0.3ns TYP, 0.7ns MAX	—
OUTPUT SYMMETRY (DUTY CYCLE)	DC	40/60% OR 45/55%	@50% V_{DD}
PHASE JITTER ($12\text{kHz} \leq F_J \leq 20\text{MHz}$)	J_{RMS}	0.2ps TYP / 0.5ps MAX	FOR 156.25MHZ
PHASE NOISE	$\ell(\Delta f)$	$-80 / -92 / -124 / -136 / -142$ dBc	TYPICAL FOR 156.25MHZ @10Hz / 100Hz / 1kHz / 10kHz / 100kHz
STANDBY FUNCTION (E/D ON PIN 1)	E/D	PIN1=HIGH OR OPEN -> OUTPUTS ARE ACTIVE	PIN1=LOW -> OUTPUTS ARE HIGH IMPED.

NOTE 1: CURRENT CONSUMPTION IS TYPICAL FOR 3.3V, AT LOWER SUPPLY VOLTAGES LESS CONSUMPTION APPLIES.

NOTE 2: OVERALL FREQUENCY STABILITY INCLUDES TOLERANCE @+25°C, DEVIATIONS OVER OPERATING TEMPERATURE RANGE, DEVIATIONS DUE TO OUTPUT LOAD VARIATIONS AND SUPPLY VOLTAGE FLUCTUATIONS.

MECHANICAL DIMENSIONS



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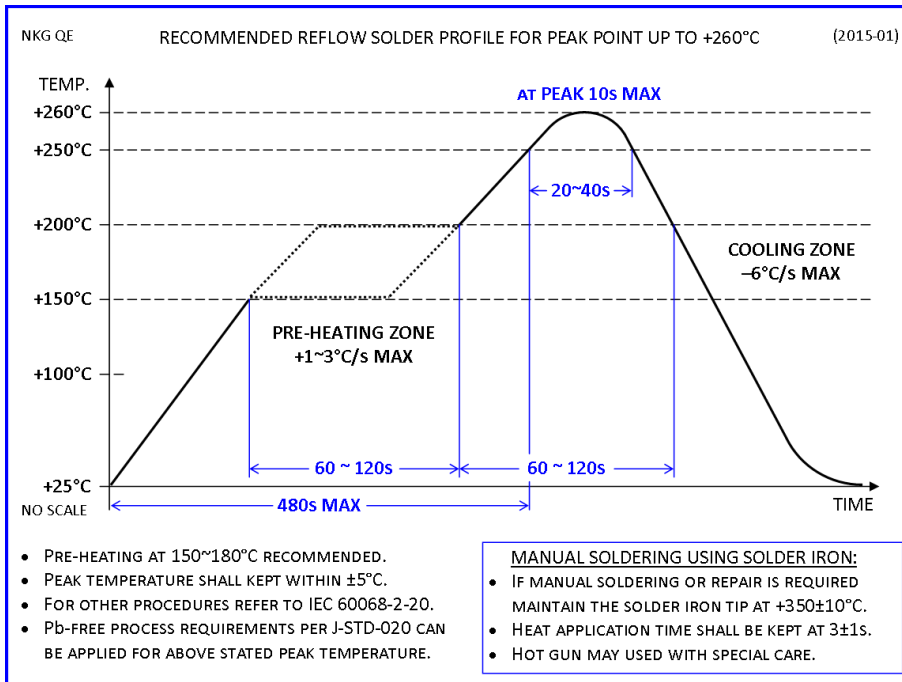
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ENVIRONMENTAL COMPLIANCE INFORMATION

- ROHS 6/6 COMPLIANT (DIRECTIVE 2011/65/EC) AND LEAD-FREE.
- COMPLIANT TO ROHS 2 (DIRECTIVE 2015/863) (ALSO CALLED ROHS 10).
- HALOGEN-FREE PER DEFINITION OF IEC 61249-2-21 2033.
- NONE-USE OF SVHCS PER REACH IS CURRENTLY GIVEN, CONTINUOUSLY MONITORED AND UPDATED AS THE COMMISSION ISSUES NEW RELEASES.
- PRODUCT DOES NOT CONTAIN ANY PHTHALATES (PHS).
- PRODUCT DOES NOT CONTAIN PVC (POLYVINYL CHLORIDE).
- PRODUCT DOES NOT CONTAIN PFOS/PFOA NOR BEING SAME USED TO MANUFACTURE THE COMPONENTS OF THIS PRODUCT.
- MOISTURE SENSITIVITY LEVEL (MSL) 1 PER J-STD-020C.

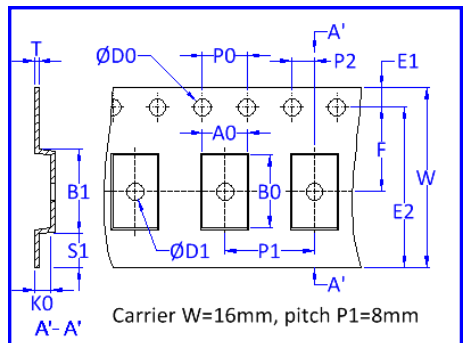


SOLDERING RECOMMENDATIONS



PACKAGING INFORMATION

- PACKAGING IN TAPE & REEL IN COMPLIANCE TO EIA-481.
- QTY PER REEL: 1,000PCS
- REEL DIA A=180MM.
- EMBOSSED CARRIER TAPE WIDTH W = 16MM.
- COMPONENT PITCH P1 = 8MM.



PART NUMBER SYNTAX

PART NUMBER FAMILY (REPRESENTS PRODUCT MODEL W/ HCSL OUTPUT AND PACKAGE SIZE)

SUPPLY VOLTAGE NOMINATOR (I.E. 6= 3.3V, 7= 1.8V, 8= 2.8V, 9= 2.5V)

FREQUENCY STABILITY CODE (I.E. A= ±25PPM, B= ±50PPM, C= ±100PPM, D= ±30PPM)

NOMINAL FREQUENCY (IN MHZ WITH AT LEAST THREE DIGITS AFTER DECIMAL POINT)

OPERATING TEMPERATURE RANGE CODE (I.E. E= -20~70°C, M= -10~70°C, W= -40~85°C)

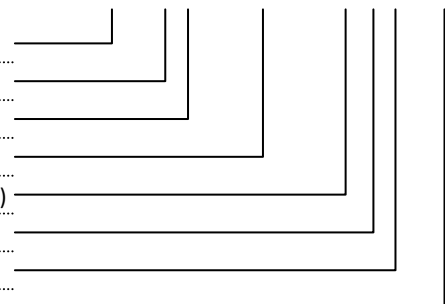
OUTPUT SYMMETRY INDICATOR (N= 40/60%, T= 45/55%)

OUTPUT LOAD DESIGNATOR (I.E. S= STANDARD 50Ω)

PART NUMBER EXTENSION (ONLY FOR NON-STANDARD OR CUSTOMIZED PARTS)

IF THERE IS A LARGE NUMBER OF CODES IN USE THE TABLE ABOVE MAY ONLY SHOW A FEW EXAMPLES.

SHO36B120.000MTS-EXT



FOR MORE INFORMATION PLEASE CONTACT US.

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