

CRYSTAL OSCILLATOR UNIT WITH 4 SWITCHABLE HCSL OUTPUT FREQUENCIES IN CERAMIC SMD PACKAGE, SIZE 7 X 5MM.

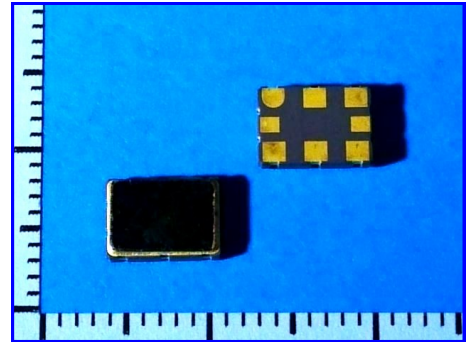
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PRODUCT FEATURES

- 4 SWITCHABLE FREQUENCIES IN A RANGE FROM 15 TO 700MHZ
- INTEGRATED PHASE JITTER PERFORMANCE OF 150fs RMS.
- SMD PACKAGE SIZE 7.0 X 5.0 X 1.8MM WITH 8 PADS.
- 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 | 15.0 ~ 700.0MHZ | — |
| SUPPLY VOLTAGE RANGE | V_{DD} | 1.8V / 2.5V / 3.3V | — |
| SUPPLY CURRENT CONSUMPTION | I_{DD} | <115mA | MAX @3.3V _{DC} |
| OVERALL FREQUENCY STABILITY | $\Delta f/F_N$ | ±25PPM, ±50PPM, ±100PPM | SEE NOTE 1, OTHERS AVAILABLE |
| OPERATING TEMPERATURE RANGE | T_{OP} | -10°C ~ +70°C OR -40°C ~ +85°C | OTHER OPTIONS AVAILABLE |
| AGING FIRST YEAR | $(\Delta f/F_N)y1$ | ±3PPM | @+25°C |
| OUTPUT WAVEFORM / LOAD | — / R_L | HCSL / 50Ω | — |
| OUTPUT VOLTAGE LEVELS | V_{OH}/V_{OL} | 0.660V TYP / 0V TYP | 1.15V MAX / 0.15V MAX |
| RISE AND FALL TIMES | t_R AND t_F | 0.4ns MAX | 20 TO 80% OF WAVEFORM |
| OUTPUT SYMMETRY (DUTY CYCLE) | DC | 45/55% | @50%V _{DD} |
| PHASE JITTER (12KHZ≤FJ≤20MHZ) | J_{RMS} | 148fs / 147fs / 141fs | FOR 156.25 / 312.5 / 644.53MHZ |
| FREQUENCY SELECT INPUTS FS0 / FS1 | V_{OH}/V_{OL} | 70% of V _{DD} / 30% OF V _{DD} | FOR LOGIC LEVEL HIGH AND LOW, NOTE 2 |
| FREQUENCY SELECTING TIME | t_{FS} | 2.5ms MAX | SWITCHING TIME BETWEEN FREQUENCIES |
| STANDBY FUNCTION (E/D ON PIN 1) | E/D | PIN1=HIGH OR OPEN -> OUTPUTS ARE ACTIVE | PIN1=LOW -> OUTPUTS ARE HIGH IMPED. |

NOTE 1: OVERALL FREQUENCY STABILITY INCLUDES TOLERANCE @+25°C, DEVIATIONS OVER OPERATING TEMPERATURE RANGE, DEVIATIONS DUE TO OUTPUT LOAD VARIATIONS AND SUPPLY VOLTAGE FLUCTUATIONS.

NOTE 2: THE FREQUENCY SWITCHING OF OUTPUT IS BASED ON LOGIC LEVELS ON FREQUENCY SELECT INPUTS (FS0 & FS1), REFER TO LOGIC TABLE IN DRAWING BELOW.

MECHANICAL DIMENSIONS

RECOMMENDED LAND PATTERN

| PAD | FUNCTION |
|-----|-----------------------------------|
| 1 | ENABLE / DISABLE [E/D] |
| 2 | N.C. |
| 3 | GROUND [GND] |
| 4 | RF OUTPUT [CLK] |
| 5 | COMPLEMENTARY OUTPUT [CLK] |
| 6 | SUPPLY VOLTAGE [V _{DD}] |
| 7 | FREQUENCY SELECT [FS1] |
| 8 | FREQUENCY SELECT [FS0] |

| FS1 | FS0 | OUTPUT |
|-----|-----|-------------|
| 0 | 0 | FREQUENCY 1 |
| 0 | 1 | FREQUENCY 2 |
| 1 | 0 | FREQUENCY 3 |
| 1 | 1 | FREQUENCY 4 |

Ceramic seam seal oscillator package 7.0x5.0mm with 8 pads
CMD075M-P8 2017-11 A
 No scale Unit: mm

CRYSTAL OSCILLATOR UNIT WITH 4 SWITCHABLE HCSSL OUTPUT FREQUENCIES IN CERAMIC SMD PACKAGE, SIZE 7 X 5MM.

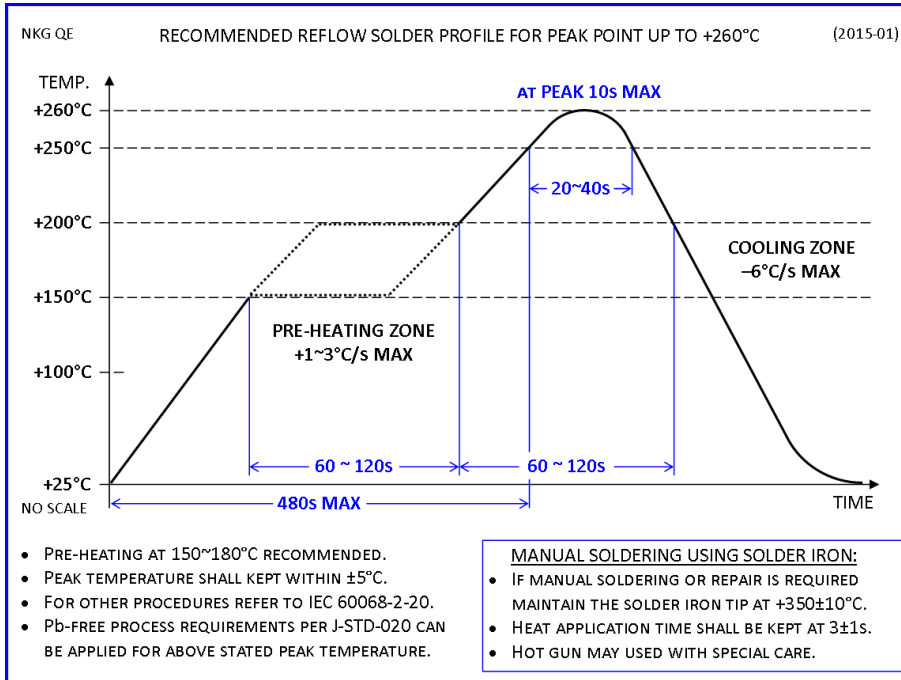
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ENVIRONMENTAL COMPLIANCE INFORMATION

- 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.

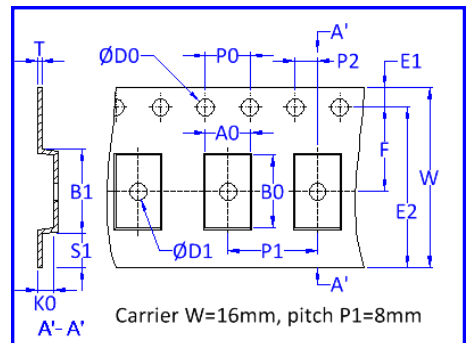


SOLDERING RECOMMENDATIONS



PACKAGING INFORMATION

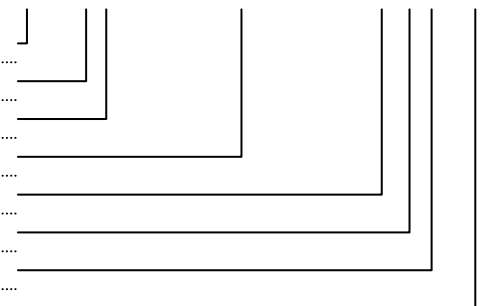
- PACKAGING IN TAPE & REEL IN COMPLIANCE TO EIA-481.
- QTY PER REEL: 1,000PCS
- REEL DIA A=180MM.
- EMBOSSED CARRIER TAPE WIDTH W = 16MM.
- COMPONENT PITCH P1 = 8MM.



PART NUMBER SYNTAX

- PART NUMBER FAMILY (REPRESENTS PRODUCT MODEL W/ HCSSL 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= $\pm 25\text{PPM}$, B= $\pm 50\text{PPM}$, C= $\pm 100\text{PPM}$, D= $\pm 30\text{PPM}$)
- 4 SWITCHABLE FREQUENCIES (FREQUENCY 1 TO 4 IN MHZ ONLY SEPARATED WITH A DASH)
- OPERATING TEMPERATURE RANGE CODE (I.E. M= $-10 \sim 70^\circ\text{C}$, W= $-40 \sim 85^\circ\text{C}$)
- OUTPUT SYMMETRY INDICATOR (N= 40/60%, T= 45/55%)
- OUTPUT LOAD DESIGNATOR (I.E. S= STANDARD 50 Ω)
- PART NUMBER EXTENSION (ONLY FOR NON-STANDARD OR CUSTOMIZED PARTS)

SHM36B64-128-256-512 MTS-EXT



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

FOR MORE INFORMATION PLEASE CONTACT US.

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