

**Data Sheet**
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BACK

Product Category: SMD Quartz Crystal

Series Number	Package	Description	Last Modified
296	2.5x2mm Chip Type	SMD Quartz Crystal	Nov. 17, 2011

**FEATURES**

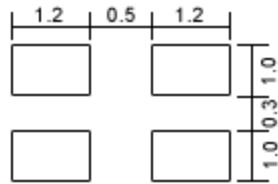
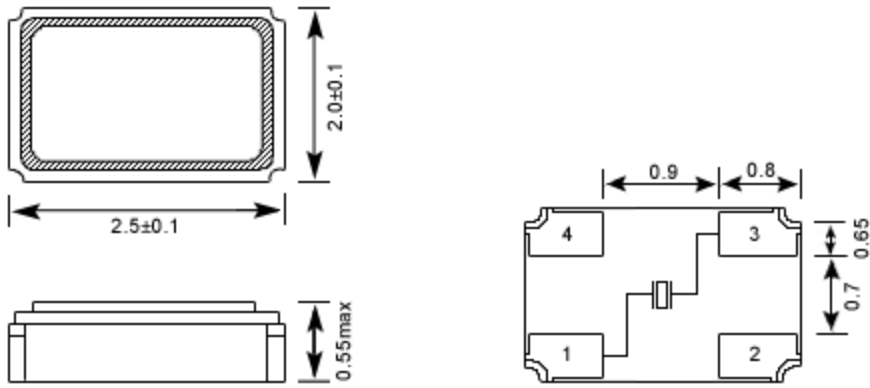
- 2.5x2.0mm Four Pad Chip Type Surface Mount Quartz Crystal
- Very compact and ultra miniature
- Excellent heat and shock resistance
- OA/AV and Bluetooth application
- RoHS / Lead Free compliant

**OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS**

PARAMETERS	SYMBOL	CONDITION	MINIMUM	TYPICAL	MAXIMUM	UNITS
Frequency Range	Fo	-	16	-	60	MHz
Frequency Tolerance	$\Delta F/Fo$	REFTO25°C	$\pm 10$	-	$\pm 50$	ppm
Temperature Coefficient	K	-	$\pm 10$	-	$\pm 50$	ppm( $\Delta$ °C)
Operating Temperature	TORP	-	-20	-	+70	°C
Storage Temperature	TSTG	-	-40	-	+85	°C
Shunt Capacitance	Co	-	-	-	3	pF
Load Capacitance	CL	-	8	-	12	pF
Insulation Resistance	IR	100VDC	500	-	-	M
Drive Level	DL	-	-	50	100	$\mu$ W
Aging (First Year)	Fa	@25°C, per year	-2.0	-	+2.0	Ppm

**EQUIVALENT SERIES RESISTANCE (ESR) AND MODE OF VIBRATION (MODE)**

PARAMETERS	MAX ESR (OHM)	MODE
16.000MHZ ~ 19.999MHZ	120	Fundamental
20.000MHZ ~ 29.999MHZ	80	Fundamental
30.000MHZ ~ 60.000MHZ	50	Fundamental

**PACKAGE DIMENSIONS**

Recommended Solder Pattern

**PART NUMBER GUIDE**

Example: 296-25.0M-9-20-G-S-TR

(All fields separated by a dash "-")

Series Number	Frequency	Load Capacitance	Tolerance @ +25°C	Frequency Stability Over Temp ( °C )	Operating Temp ( °C )	Packaging**
296	25.0M	9	20	G	S	TR
Oscilent 2.5 x 2 SMD	Enter desired frequency.  Avail. = 16 ~ 60.0M	Enter desired capacitance here.  Avail. = 8 ~ 12pF	Blank * = ±30 PPM 10 = ±10 PPM 15 = ±15 PPM 20 = ±20 PPM 25 = ±25 PPM 50 = ±50 PPM <b>Avail. = ±10 ~ ±50</b>	Blank* = ±50 PPM G = ±30 PPM H = ±20 PPM K = ±15 PPM L = ±10 PPM N = ±5 PPM M = ±100 PPM	P = 0~+50 R = -10~+60 S = -20~+70 T = -30~+80 W = -40~+85	Blank* = Bulk TR = Tape/Reel
<p><b>NOTE:</b> Deviations on all parameters available. Please consult Oscilent for details.</p> <p><b>DEFINITIONS:</b> Click on the characteristic names above for definitions of that particular characteristic.</p> <p><b>*STANDARDS:</b> "Blank" part number selections indicate standard variables for that particular characteristic.</p> <p><b>**PACKAGING:</b> Click on the packaging name above for tape/reel specifications</p>						

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Series No.: 296

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