

# MODEL 416



# SURFACE MOUNT QUARTZ CRYSTAL

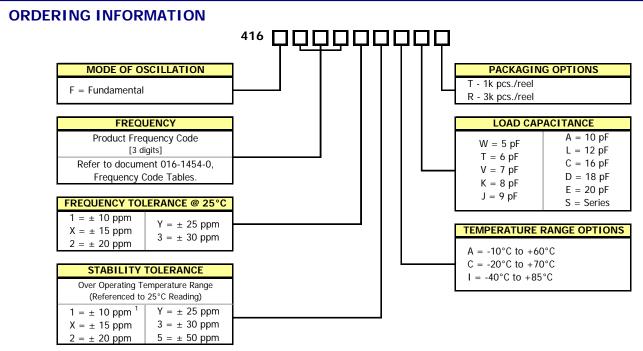
## **FEATURES**

- Standard 1.6mm x 1.2mm Seam Weld Package
- Fundamental Crystal Design
- Frequency Range 24 80 MHz
- Frequency Tolerance, ±20ppm Standard
- Frequency Stability, ±20ppm Standard
- Operating Temperature to -40°C to +85°C
- Tape & Reel Packaging Standard, EIA-481
- RoHS/Green Compliant [6/6]



#### **APPLICATIONS**

Model 416 is a low cost device used in a wide range of commercial applications including wearable and handheld electronics, notebooks, computer peripherals, Bluetooth and USB interfaces.

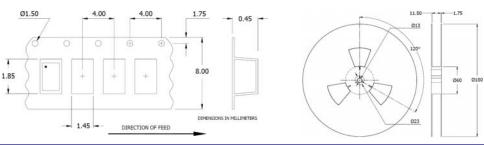


<sup>1]</sup> Check temperature range code availability with factory.

Not all performance combinations and frequencies may be available. Contact your local CTS Representative or CTS Customer Service for availability.

## PACKAGING INFORMATION [Reference]

Device quantity is 1k pieces minimum and 3k pieces maximum per 180mm reel.



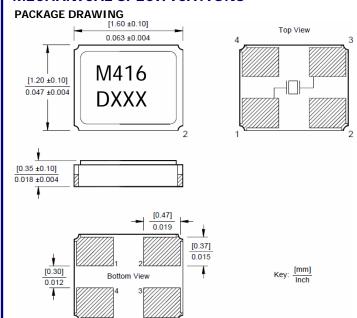


## **ELECTRICAL CHARACTERISTICS**

	PARAMETER	VALUE					
	Frequency Range	24 MHz to 80 MHz					
ECTRICAL PARAMETERS	Operating Mode	Fundamental					
	Crystal Cut	AT-Cut					
	Frequency Tolerance @ +25°C	±20 ppm, Standard					
	Frequency Stability Tolerance [Operating Temperature Range, Referenced to 25°C Reading]	±20 ppm, Standard					
	Operating Temperature Ranges	-10°C to +60°C -20°C to +70°C	-40°C to +85°C				
	Equivalent Series Resistance [Maximum]	24 MHz - < 40 MHz	200 Ohms				
	Equivalent Series Resistance [Maximum]	40 MHz - 80 MHz	100 Ohms				
	Load Capacitance	See Ordering Information					
	Shunt Capacitance (C <sub>0</sub> )	3.0 pF Typical, 5.0 pF Maximum					
	Drive Level	10 μW Typ., 100 μW Max.					
	Aging @ +25°C	±3 ppm/yr Typical					
	Insulation Resistance	500M Ohms @ DC 100V					
	Storage Temperature Range	-40°C to +90°C					

## **MECHANICAL SPECIFICATIONS**

0.020



#### MARKING INFORMATION

- 1. M416 CTS Model Series.
- 2. D Date code. See Table I for codes.
- 3. XXX Frequency code. Reference CTS document 016-1454-01.

#### NOTES

- Complete CTS part number, frequency value, date code and manufacturing site code information must appear on reel and carton labels.
- 2. Terminations #2, #4 and the metal lid are connected internally. End user may connect these pins to circuit ground.
- Termination pads (e4); barrier plating is nickel [Ni] with gold [Au] flash plate.
- Reflow conditions per JEDEC J-STD-020; 260°C maximum, 10 seconds.
- 5. MSL = 1.

## SUGGESTED SOLDER PAD GEOMETRY

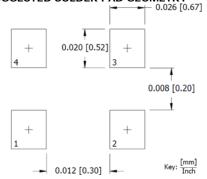


TABLE I - DATE CODE

			MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ост	NOV	DEC	
	YEAR				JAN	LEB	IVIAK	Ark	IVIAT	JON	JUL	AUG	SLF	001	NOV	DEC
2001	2005	2009	2013	2017	Α	В	С	D	E	F	G	Н	J	K	L	М
2002	2006	2010	2014	2018	N	Р	Q	R	S	T	U	V	W	Χ	Υ	Z
2003	2007	2011	2015	2019	а	b	С	d	е	f	g	h	j	k	I	m
2004	2008	2012	2016	2020	n	р	q	r	S	t	u	V	w	х	у	Z

# **X-ON Electronics**

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Crystals category:

Click to view products by CTS manufacturer:

Other Similar products are found below:

CS325S24000000ABJT 718-13.2-1 MC405 32.0000K-R3:PURE SN FC-135R 32.7680KF-A3 7A-40.000MAAE-T 7B-27.000MBBK-T FL2000085 9B-15.360MBBK-B 9C-7.680MBBK-T ASH7K-32.768KHZ AT-41.600MAGQ-T BTD1062E05A-513 LFXTAL066198Cutt 9C-14.31818MBBK-T FA-238 50.0000MB30X-K3 FC-12M 32.7680KA-AC3 SSPT7F-9PF20-R FX325BS-38.88EEM1201 LFXTAL065253Cutt LFXTAL066431Cutt XT9S20ANA14M7456 XT9SNLANA16M 646G-24-2 7A-24.576MBBK-T 7B-30.000MBBK-T WX26-32.768K-6PF 9B-14.31818MBBK-B CD1AM 7B-25.000MAAE-T 7A-14.31818MBBK-T 6504-202-1501 6526-202-1501 FA-118T 27.1200MB50P-K0 FC-135R 32.7680KA-A3 ABM12-104-37.400MHZT ABLS-10.000MHZ-D3W-T BTJ112E01E-513 BTJ722K01C-7067 BTL-20-513 TSX-3225 24.0000MF15X-AC TSX-3225 16.0000MF18X-AC BTJ120E02C BTL-12-513 7A-10.000MBBK-T 7A-11.0592MBBK-T ABM12-103-24.000MHZT CS325S25000000ABJT ABM3B-25.000MHZ-B2-X-T FC-135 32.7680KA-A5 FX0800015