

Fuel The Digital World



Crystals and Oscillators



Timing Product Brochure

Crystal > kHz

Model	Type	Size (mm)	Freq. (kHz)	Freq. tolerance @25°C (ppm)	Load (pF)	Temp. (°C)
QT15	DIP Cylinder	Φ1.5x5.1	32.768	±20	12.5	-20 to 70
QT26	DIP Cylinder	Φ2.0x6.2	32.768	±5 ±10 ±20	6.0 12.5	-20 to 70
QT26V	DIP Cylinder	Φ2.0x6.2	30 to 100	±30	12.5	-20 to 70
QT26S	SMD Cylinder	Φ2.0x6.1	32.768	±10 ±20	6.0 12.5	-40 to 85
QT26J	SMD Jacket	8.6x2.7	32.768	±10 ±20	6.0 12.5	-40 to 85
QT2M	SMD Plastic Package	8.0x3.8	32.768	±5 ±10 ±20	6.0 7.0 9.0 12.5	-40 to 85
QT1M	SMD Plastic Package	6.9x1.4	32.768	±20	7.0 9.0 12.5	-40 to 85
QT2V	SMD Plastic Package	8.0x3.8	30 to 100	±20 ±30	12.5	-40 to 85
QT5C	SMD Ceramic Package	5.0x1.9	32.768	±10 ±20	6.0 7.0 9.0 12.5	-40 to 85
QT4C	SMD Ceramic Package	4.2x1.6	32.768	±10 ±20	6.0 7.0 9.0 12.5	-40 to 85
QT3CL		3.2x1.5	32.768	±10 ±20	6.0 7.0 9.0 12.5	-40 to 85
QT3CT		3.3x1.6	32.768	±20	4.0 6.0 7.0 8.0 9.0 12.5	-40 to 85
QT3C		3.2x1.5	32.768	±10 ±20	6.0 7.0 9.0 12.5	-40 to 85 -40 to 125
QT2CL		2.0x1.2	32.768	±20	4.0 12.5	-40 to 85
QT2C		2.0x1.2	32.768	±10 ±20	4.0 6.0 7.0 9.0 12.5	-40 to 85
QT1C		1.6x1.0	32.768	±20	6.0 7.0 9.0 12.5	-40 to 85
QT1CS		1.2x1.0	32.768	±20	6.0 7.0 12.5	-40 to 85





Crystal > MHz

Model	Type	Size (mm)	Freq. (MHz)	Freq. tolerance @25°C (ppm)	Freq. stability over OTR (ppm)	Load (pF)
QT49		11.5x5.0x3.6	3.2 to 90	±10 ±20 ±30	±10, ±20, ±30 (-20 to 70°C)	12 18 20
QT49S		12.7x4.8x3.8 12.7x4.8x3.0	3.2 to 90	±10 ±20 ±30	±10, ±20, ±30 (-20 to 70°C) ±20, ±30 (-40 to 85°C)	12 18 20
QT532G		5.0x3.2x1.2	8 to 54	±20 ±30	±20, ±30 (-20 to 70°C) ±30 (-40 to 85°C)	12 18 20
QT325G		3.2x2.5x0.8	9.9 to 54	±20 ±30	±20, ±30 (-20 to 70°C) ±30 (-40 to 85°C)	8 10 12 18
QT252G		2.5x2.0x0.75	12 to 64	±20 ±30	±20, ±30 (-20 to 70°C) ±30 (-40 to 85°C)	8 10 12
QT216G		2.0x1.6x0.6	20 to 64	±20 ±30	±20, ±30 (-20 to 70°C) ±30 (-40 to 85°C)	6 8 10 12
QT532S		5.0x3.2x0.9	8 to 125	±10 ±30	±10, ±30 (-20 to 70°C) ±30 (-40 to 85°C)	10 12 18 20
QT325S		3.2x2.5x0.7	10 to 114	±10 ±20 ±30	±10, ±20, ±30 (-20 to 70°C) ±10 (-30 to 85°C) ±15, ±20, ±30 (-40 to 85°C) ±60 (-40 to 125°C)	6 8 9 10 12 16 18 20
QT252S		2.5x2.0x0.55	12 to 66	±10 ±20 ±30	±10, ±20, ±30 (-20 to 70°C) ±10 (-30 to 85°C) ±20, ±30 (-40 to 85°C) ±60 (-40 to 125°C)	6 8 10 12 16 18 20
QT216S		2.0x1.6x0.5	16 to 66	±10 ±20 ±30	±10, ±20, ±30 (-20 to 70°C) ±10 (-30 to 85°C) ±20, ±30 (-40 to 85°C) ±60 (-40 to 125°C)	6 8 10 12
QT161S		1.6x1.2x0.35	24 to 66	±10 ±20 ±30	±10, ±20, ±30 (-20 to 70°C) ±10 (-30 to 85°C) ±20, ±30 (-40 to 85°C) ±60 (-40 to 125°C)	6 8 10 12
QT121S		1.2x1.05x0.33	24 to 54	±10 ±20 ±30	±10, ±20, ±30 (-20 to 70°C) ±10 (-30 to 85°C) ±20, ±30 (-40 to 85°C) ±60 (-40 to 125°C)	6 8 10 12

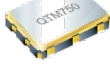
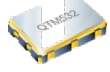

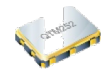

Crystal > Temperature Sensing

Model	Type	Size (mm)	Freq. (MHz)	Freq. tolerance @25°C (ppm)	Freq. stability over OTR (ppm)	Load (pF)
QT252T		2.5x2.0x1.0	12 to 54	±10	±10 (-30 to 85°C)	6 7 8
QT216T		2.0x1.6x0.8	19.2 to 54	±10	±10 (-30 to 85°C)	6 7 8
QT161T		1.6x1.2x0.65	26 to 54	±10	±10 (-30 to 85°C)	6 7 8

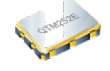

Oscillator > kHz CMOS

Model	Type	Size (mm)	Freq. (kHz)	Voltage (V)	Output	Freq. stability (ppm)
QTK750		7.0x5.0x1.3	32.768	1.8, 2.5, 3.3	CMOS	±25 (-10 to 70°C) ±25, ±50 (-40 to 85°C)
QTK532		5.0x3.2x1.2	32.768	1.8, 2.5, 3.3	CMOS	±25 (-10 to 70°C) ±25, ±50 (-40 to 85°C)
QTK325		3.2x2.5x1.0	32.768	1.8, 2.5, 3.3	CMOS	±25 (-10 to 70°C) ±25, ±50 (-40 to 85°C)
QTK252		2.5x2.0x0.8	32.768	1.8, 2.5, 3.3	CMOS	±25 (-10 to 70°C) ±25, ±50 (-40 to 85°C)






Oscillator > MHz CMOS

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Freq. stability (ppm)
QTM750		7.0x5.0x1.3	1 to 170	1.8, 2.5, 3.3	CMOS	±25, ±30, ±50 (-40 to 85°C)
QTM532		5.0x3.2x1.2	1 to 170	1.8, 2.5, 2.8, 3.3	CMOS	±25, ±50 (-10 to 70°C) ±15, ±25, ±30, ±50 (-40 to 85°C)
QTM325		3.2x2.5x1.0	1 to 133	1.8, 2.5, 3.3	CMOS	±25, ±50 (-10 to 70°C) ±20, ±25, ±50 (-40 to 85°C)
QTM252		2.5x2.0x0.8	4 to 125	1.8, 2.5, 3.3	CMOS	±25, ±50 (-40 to 85°C)
QTM216		2.0x1.6x0.75	4 to 54	1.8, 2.5, 3.3	CMOS	±25, ±50 (-40 to 85°C)






Oscillator > CMOS Low EMI

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Freq. stability (ppm)
QTM252E		2.5x2.0x0.8	1 to 40	1.8, 2.5, 3.3	CMOS	±50 (-40 to 85°C) ±50 (-40 to 105°C) ±50 (-40 to 125°C)
QTM216E		2.0x1.6x0.76	1 to 40	1.8, 2.5, 3.3	CMOS	±50 (-40 to 85°C) ±50 (-40 to 105°C) ±50 (-40 to 125°C)






Oscillator > LVPECL

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Freq. stability (ppm)
QTM750P		7.0x5.0x1.4	25 to 312.5	2.5, 3.3	LVPECL	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)
QTM750PH		7.0x5.0x1.7	170 to 2100	2.5, 3.3	LVPECL	±25, ±50 (-40 to 85°C)
QTM532P		5.0x3.2x1.2	25 to 312.5	2.5, 3.3	LVPECL	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)
QTM532PH		5.0x3.2x1.2	170 to 2100	2.5, 3.3	LVPECL	±25, ±50 (-40 to 85°C)
QTM325P		3.2x2.5x0.95	25 to 312.5	2.5, 3.3	LVPECL	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)





Oscillator > LVDS

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Freq. stability (ppm)
QTM750D		7.0x5.0x1.4	25 to 312.5	2.5, 3.3	LVDS	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)
QTM750DH		7.0x5.0x1.7	170 to 2100	2.5, 3.3	LVDS	±25, ±50 (-40 to 85°C)
QTM532D		5.0x3.2x1.2	25 to 312.5	2.5, 3.3	LVDS	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)
QTM532DH		5.0x3.2x1.2	170 to 2100	2.5, 3.3	LVDS	±25, ±50 (-40 to 85°C)
QTM325D		3.2x2.5x0.95	25 to 312.5	2.5, 3.3	LVDS	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)





Oscillator > HCSL

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Freq. stability (ppm)
QTM750S		7.0x5.0x1.4	25 to 212.5	2.5, 3.3	HCSL	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)
QTM750SH		7.0x5.0x1.7	170 to 2100	2.5, 3.3	HCSL	±25, ±50 (-40 to 85°C)
QTM532S		5.0x3.2x1.2	25 to 212.5	2.5, 3.3	HCSL	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)
QTM532SH		5.0x3.2x1.2	170 to 2100	2.5, 3.3	HCSL	±25, ±50 (-40 to 85°C)
QTM325S		3.2x2.5x0.95	25 to 212.5	2.5, 3.3	HCSL	±25, ±50 (-40 to 85°C) ±50ppm (-40°C to +105°C)







Oscillator > TCXO

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Freq. stability over OTR (ppm)
QTT325		3.2x2.5x1.0	10 to 52	1.8, 3.3	Clipped Sinewave	±0.5, ±2.0 (-30 to 85°C)
QTT252		2.5x2.0x0.8	10 to 70	1.8, 2.5, 3.3	Clipped Sinewave	±0.5, ±2.0 (-30 to 85°C) ±1.0 (-40 to 85°C)
QTT216		2.0x1.6x0.8	10 to 70	1.8, 3.3	Clipped Sinewave	±0.5, ±2.0 (-30 to 85°C)
QTT161		1.6x1.2x0.6	10 to 70	1.8, 3.3	Clipped Sinewave	±0.5, ±2.0 (-30 to 85°C)


Oscillator > Stram-3 TCXO

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Freq. stability over OTR (ppm)
QTS750		7.0x5.0x2.0	10 to 52	3.3	Clipped Sinewave	±0.1, ±0.28, ±0.5 (-40 to 85°C)
QTS750C		7.0x5.0x2.0	10 to 52	3.3	CMOS	±0.1, ±0.28, ±0.5 (-40 to 85°C)
QTS532		5.0x3.2x1.5	10 to 52	3.3	Clipped Sinewave	±0.1, ±0.28, ±0.5 (-40 to 85°C)
QTS532C		5.0x3.2x1.5	10 to 52	3.3	CMOS	±0.1, ±0.28, ±0.5 (-40 to 85°C)

Oscillator > VCXO

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Absolute pulling range (ppm)
QTV750P		7.0x5.0x1.4	30 to 250	3.3	LVPECL	±50 (-40 to 85°C) ±50 (-40°C to 105°C)
QTV532P		5.0x3.2x1.2	30 to 250	3.3	LVPECL	±50 (-40 to 85°C) ±50 (-40°C to 105°C)
QTV325P		3.2x2.5x0.95	30 to 250	3.3	LVPECL	±50 (-40 to 85°C) ±50 (-40°C to 105°C)
QTV750		7.0x5.0x1.4	1.25 to 170	3.3	CMOS	±50 (-40 to 85°C) ±50 (-40°C to 105°C)
QTV532		5.0x3.2x1.2	1.25 to 170	3.3	CMOS	±50 (-40 to 85°C) ±50 (-40°C to 105°C)
QTV325		3.2x2.5x0.95	1.25 to 170	3.3	CMOS	±50 (-40 to 85°C) ±50 (-40°C to 105°C)

Oscillator > OCXO

Model	Type	Size (mm)	Freq. (MHz)	Voltage (V)	Output	Freq. stability over OTR (ppb)
QTO107		9.5x7.3x5.5	10, 20, 30.72, 40	3.3	CMOS	±10, ±15, ±20 (-40 to 85°C)

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