



# COMTEC CRYSTALS Group

**Quartz Units**

**Oscillators**

**Resonators**

**Programmable Oscillators**



# QUARTZ Products

5th



# COMTEC CRYSTALS Group

The screenshot shows the website header with the COMTEC logo and the text "COMTEC CRYSTALS Group leading manufacturer and dealer for passive quartz components". The navigation menu includes "Home", "Produkte", "Service", "Unternehmen", and "Kontakt". A banner for "quartzshop.com" features a shopping cart filled with various quartz components. On the left, there are four informational boxes: "Willkommen im Shop!", "Verfügbarkeit", "electronica 2010", and "Qualität".

## On our web pages under

<http://www.comtec-crystals.com>

you will find our complete program, and also our online shop. A click on "Products" will lead you to our products with stock lists and data sheets. These can be opened with the Stock & Data button. Here the red or green marking shows if an item can be delivered immediately from our stock, or if the item has a lead time. Holding the mouse over the green dot shows which quantity is on hand. This quantity is dynamically calculated in our merchandise management program and therefore always current.

New customers must register. After registration and approval we will send an email with an access number for our Online-Shop. You will then have access to prices and lead times for all articles, and can place an order.

## Auf unseren Webseiten unter

<http://www.comtec-crystals.com>

finden Sie unser komplettes Angebot. In diesen Seiten ist auch unser Online-Shop integriert. Einen click auf „Produkte“ führt weiter zu unseren Produkten mit Lagerlisten und Datenblättern. Diese können mit dem Button Stock & Data geöffnet werden. Über eine grüne oder rote Markierung wird Ihnen angezeigt ob die Teile sofort oder später verfügbar sind. Wenn man mit der Maus über die grüne Markierung geht, sieht man wieviel Teile ab Lager zur Verfügung stehen. Hierzu findet eine Verfügbarkeitsberechnung statt.

Neue Kunden müssen sich erst registrieren. Nach Registrierung und Genehmigung, bekommen Sie ein Email mit dem Zugang zu unserem Online-Shop. Damit haben Sie Zugang zu Preisen und Lieferzeiten für alle Artikel. Sie können dann Ihre gewünschten Artikel ordern.

## Sur notre site Web:

<http://www.comtec-crystals.com>

vous trouverez l'ensemble des produits que nous distribuons, ainsi que notre Shop-Online. Un clic sur le bouton "Produits" et vous accédez aux listes de nos produits et à leurs fiches techniques. Celles-ci peuvent s'ouvrir en cliquant sur le bouton "Stock & Data". Selon le marquage rouge ou vert, vous saurez de suite si la marchandise est disponible ou non. En déplaçant la souris sur le marquage vert, vous pourrez voir de suite la quantité disponible en stock. Cette quantité est réactualisée de façon dynamique par notre programme de gestion des stocks.

Les nouveaux clients devront commencer par s'enregistrer. Après validation de votre enregistrement, vous recevrez par email un code d'accès au Shop Online. Ainsi, vous aurez l'accès aux prix et aux délais pour l'ensemble de nos produits et vous pourrez passer commande.





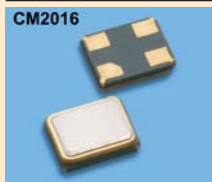
## Contents

	Page
<b>QUARTZ CRYSTAL UNITS</b>	
Quartz Crystal Units, <i>SMD Ceramic</i> .....	4
Quartz Crystal Units, <i>SMD in Metal Case</i> .....	5
Quartz Crystal Units, <i>SMD in Plastic Case</i> .....	6
Low Frequency Quartz Crystal Units, <i>Ceramic / SMD / Thru-Hole</i> .....	7
Quartz Crystal Units, <i>Thru-Hole</i> .....	8
Monolithic Crystal Filter .....	8
<b>OSCILLATORS</b>	
CXO, Clock Oscillator Products, CMOS / TTL, <i>SMD / Thru-Hole</i> .....	9
CXO, Clock Oscillator Products, LVPECL / LVDS, Differential, <i>SMD</i> .....	9
CXO, Clock Oscillator Products, True Sine Wave, <i>SMD / Thru-Hole</i> .....	10
CXO, Clock Oscillator Products, Low Power, CMOS, <i>Thru-Hole</i> .....	10
VCXO (Voltage Controlled Crystal Osc.), CMOS / TTL, <i>SMD / Thru-Hole</i> .....	11
VCXO, LVPECL / LVDS, Differential, <i>SMD</i> .....	11
VCXO, True Sine Wave, <i>SMD / Thru-Hole</i> .....	11
TCXO (Temperature Compensated Crystal Osc.), CMOS, <i>SMD / Thru-Hole</i> .....	12
TCXO, LVPECL / LVDS, Differential, <i>SMD</i> .....	12
VC-TCXO, CMOS, <i>SMD</i> .....	12
VC-TCXO, LVPECL / LVDS, Differential, <i>SMD</i> .....	12
VC-TCXO, Clipped Sine Wave, <i>SMD</i> .....	12
OCXO (Oven Controlled Crystal Oscillator), <i>Thru-Hole</i> .....	13
Programmable Oscillators, <i>SMD / Thru-Hole</i> .....	13
<b>RESONATORS</b>	
Ceramic Resonators .....	13
Other Specialities .....	14



# COMTEC CRYSTALS Group

## Quartz Crystal Units SMD Ceramic



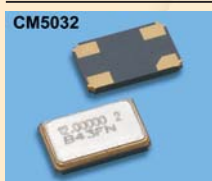
<b>CM2016</b>	<b>CM2016</b>	Case size	(2.0 x 1.6 x 0.45) mm / SMD in ceramic case
		Frequency Range	20.000000 MHz - 80.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	16pF (8pF to ∞)
		Delivery in	Tape & Reel



<b>CM2520</b>	<b>CM2520</b>	Case size	(2.5 x 2.0 x 0.55) mm / SMD in ceramic case
		Frequency Range	12.000000 MHz - 80.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	16pF (8pF to ∞)
		Delivery in	Tape & Reel



<b>CM3225</b>	<b>CM3225</b>	Case size	(3.2 x 2.5 x 0.85) mm / SMD in ceramic case
		Frequency Range	16.000000 MHz - 50.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	16pF (8pF to ∞)
		Delivery in	Tape & Reel



<b>CM5032</b>	<b>CM5032</b> <i>also available in 2-pad version</i>	Case size	(5.0 x 3.2 x 1.0) mm / SMD in ceramic case
		Frequency Range	10.000000 MHz - 50.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	16pF (8pF to ∞)
		Delivery in	Tape & Reel



<b>CM6035</b>	<b>CM6035</b>	Case size	(6.0 x 3.5 x 1.1) mm / SMD in ceramic case
		Frequency Range	10.000000 MHz - 100.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	16pF (8pF to ∞)
		Delivery in	Tape & Reel



<b>CM6035-2pad</b>	<b>CM6035-2pad</b>	Case size	(6.0 x 3.5 x 1.1) mm / SMD in ceramic case
		Frequency Range	10.000000 MHz - 100.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	16pF (8pF to ∞)
		Delivery in	Tape & Reel










<b>CM7050</b>	<b>CM7050</b>	Case size	(7.0 x 5.0 x 1.3) mm / SMD in ceramic case
		Frequency Range	7.372800 MHz - 110.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	16pF (8pF to ∞)
		Delivery in	Tape & Reel



# COMTEC CRYSTALS Group







## Quartz Crystal Units SMD in Metal Case

 <p>HC49SM</p>	<p><b>HC49SM</b> <i>2-pad</i></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(12.5 x 4.8 x 4.0) mm / SMD in metal case 3.000000 MHz - 100.000000 MHz ±30ppm (±10ppm, ±20ppm, etc.) -20 to +70°C (-40 to +85°C, -40 to +105°C etc.) 16pF (8pF to ∞) Tape &amp; Reel</p>
 <p>HC49SMG</p>	<p><b>HC49SMG</b> <i>with ground</i></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(12.5 x 4.8 x 4.0) mm / SMD in metal case 3.000000 MHz - 100.000000 MHz ±30ppm (±10ppm, ±20ppm, etc.) -20 to +70°C (-40 to +85°C, -40 to +105°C etc.) 16pF (8pF to ∞) Tape &amp; Reel</p>
 <p>HC49SM4</p>	<p><b>HC49SM4</b> <i>Height 4mm</i></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(12.5 x 4.8 x 4.0) mm / SMD in metal case 3.000000 MHz - 70.000000 MHz ±30ppm (±10ppm, ±20ppm, etc.) -20 to +70°C (-40 to +85°C, -40 to +105°C etc.) 16pF (8pF to ∞) Tape &amp; Reel</p>
 <p>HC49SSM4</p>	<p><b>HC49SSM4</b> <i>Height 3.8mm</i></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(12.5 x 4.8 x 3.8) mm / SMD in metal case 3.000000 MHz - 70.000000 MHz ±30ppm (±10ppm, ±20ppm, etc.) -20 to +70°C (-40 to +85°C, -40 to +105°C etc.) 16pF (8pF to ∞) Tape &amp; Reel</p>
 <p>TC26SM</p>	<p><b>TC26SM</b> <i>Gull Wing</i></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(6.0 x 2.0) mm, cylinder / SMD in metal case 32.768000 kHz / 20.000000 kHz - 307.200000 kHz ±20ppm (±5ppm, ±10ppm, etc.) -20 to +70°C (-40 to +85°C) 12.5pF (6pF to 20pF) Tape &amp; Reel</p>
 <p>HC49USMD</p>	<p><b>HC49U-SMD</b> <i>Gull Wing</i></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(11.5 x 5.0 x 13.0) mm / SMD in metal case 1.000000 MHz - 200.000000 MHz ±30ppm (±10ppm, ±20ppm, etc.) -20 to +70°C (-40 to +85°C, -40 to +105°C, etc.) 30pF (8pF to ∞) Tape &amp; Reel</p>
 <p>UM1-SMD</p>	<p><b>UM1-SMD</b> <i>Gull Wing</i></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(7.0 x 3.7 x 8.6) mm / SMD in metal case 1.000000 MHz - 350.000000 MHz ±30ppm (±10ppm, ±20ppm, etc.) -20 to +70°C (-40 to +85°C, -40 to +105°C, etc.) 30pF (8pF to ∞) Tape &amp; Reel</p>



# COMTEC CRYSTALS Group

## Quartz Crystal Units SMD in Plastic Case









 <p><b>CM309S</b></p>	<p><b>CM309S</b></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(12.5 x 4.6 x 3.7) mm / SMD in plastic case 3.500000 MHz - 70.000000 MHz ±30ppm (±50ppm, etc.) -20 to +70°C (-40 to +85°C) 30pF typ. (5pF to ∞) Tape &amp; Reel</p>
 <p><b>MA406</b></p>	<p><b>MA406</b></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(11.7 x 4.6 x 3.7) mm / SMD in plastic case 4.000000 MHz - 64.000000 MHz ±30ppm (±50ppm, etc.) -20 to +70°C (-40 to +85°C) 12.5pF typ. (6pF to ∞) Tape &amp; Reel</p>
 <p><b>CM206S</b></p>	<p><b>CM206S</b> <i>Alternative to MC306</i></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(8.0 x 3.8 x 2.54) mm / SMD in plastic case 30.000000 kHz - 350.000000 kHz ±20ppm (±100ppm) -20 to +70°C (-40 to +85°C) 12.5pF typ. (6pF to ∞) Tape &amp; Reel</p>
 <p><b>MC146</b></p>	<p><b>MC46</b></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(7.0 x 1.5 x 1.4) mm / SMD in plastic case 32.000000 kHz - 100.000000 kHz ±20ppm (±100ppm) -20 to +70°C (-40 to +85°C) 12.5pF typ. (6pF to ∞) Tape &amp; Reel</p>
 <p><b>MC405</b></p>	<p><b>MC405</b></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(10.4 x 4.06 x 3.6) mm / SMD in plastic case 20.000000 kHz - 307.200000 kHz ±20ppm (±100ppm) -20 to +70°C (-40 to +85°C) 12.5pF typ.(6pF to ∞) Tape &amp; Reel</p>
 <p><b>MA406</b></p>	<p><b>MC406</b></p>	<p>Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in</p>	<p>(10.4 x 4.06 x 3.6) mm / SMD in plastic case 20.000000 kHz - 307.200000 kHz ±20ppm (±100ppm) -20 to +70°C (-40 to +85°C) 12.5pF typ.(6pF to ∞) Tape &amp; Reel</p>





# COMTEC CRYSTALS Group

## Low Frequency Quartz Crystal Units *SMD/Thru-Hole*

	<b>CM4115</b> <b>2-pad</b>	Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in	(4.1 x 1.5 x 0.8) mm / SMD in ceramic case 32.768 kHz ±30ppm (±10ppm, ±20ppm, etc.) -20 to +70°C (-40 to +85°C, etc.) 12.5pF typ. (8pF to ∞) Tape & Reel
	<b>CM3215</b> <b>2-pad</b>	Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in	(3.2 x 1.5 x 0.8) mm / SMD in ceramic case 32.0000 kHz - 77.500 kHz ±30ppm (±10ppm, ±20ppm, etc.) -20 to +70°C (-40 to +85°C, etc.) 12.5pF typ. (8pF to ∞) Tape & Reel
	<b>TC26</b>	Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in	(2.0 x 6.0) mm, cylinder / metal case 32.768000 kHz, 20.000000 kHz - 350.000000 kHz ±20ppm (±10ppm, ±50ppm, ±100ppm, etc.) -20 to +70°C (-40 to +85°C, etc.) 12.5pF typ. (6pF to ∞) Bulk
	<b>TC38</b>	Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in	(3.0 x 8.0) mm, cylinder / metal case 32.768000 kHz, 100.000000 kHz ±20ppm (±10ppm, ±50ppm, ±100ppm, etc.) -20 to +70°C (-40 to +85°C, etc.) 12.5pF typ. (6pF to ∞) Bulk
	<b>TC26SM</b> <b>Gull Wing</b>	Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in	(6.0 x 2.0) mm, cylinder / SMD in metal case 32.768000 kHz ±20ppm (±10ppm, ±50ppm, ±100ppm, etc.) -20 to +70°C (-40 to +85°C) 12.5pF (6 to 20pF) Tape & Reel
	<b>CM206S</b> <i>Alternative to MC306</i>	Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in	(8.0 x 3.8 x 2.54) mm / SMD in plastic case 30.000000 kHz - 350.000000 kHz ±20ppm (±10ppm, ±50ppm, ±100ppm, etc.) -20 to +70°C (-40 to +85°C) 12.5pF typ. (6pF to ∞) Tape & Reel
	<b>MC405/MC406</b>	Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in	(10.4 x 4.06 x 3.6) mm / SMD in plastic case 20.000000 kHz - 307.200000 kHz ±20ppm (±50ppm, etc.) -40 to +85°C 12.5pF typ. (6pF to ∞) Tape & Reel
	<b>MC146</b>	Case size Frequency Range Frequency Stability Temperature Range Load Capacitance Delivery in	(7.0 x 1.5 x 1.4) mm / SMD in plastic case 32.000000 kHz - 100.000000 kHz ±20ppm (±100ppm) -20 to +70°C (-40 to +85°C) 12.5pF typ. (6pF to ∞) Tape & Reel



# COMTEC CRYSTALS Group

## Quartz Crystal Units *Thru-Hole*



<b>HC49U</b>	<b>HC49U</b> <i>Also available with ground lead</i>	Case size	(11.5 x 5.0 x 13.0) mm / metal case
		Frequency Range	1.000000 MHz - 200.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	30pF typ. (8pF to ∞)
		Delivery in	Bulk or radial tape



<b>HC49S</b>	<b>HC49S</b> <i>Also available with ground lead</i>	Case size	(11.5 x 5.0 x 3.6) mm / metal case
		Frequency Range	3.000000 MHz - 70.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	30pF typ. (8pF to ∞)
		Delivery in	Bulk or radial tape



<b>UM1</b>	<b>UM1</b> <i>Also available with ground lead</i>	Case size	(7.0 x 3.7 x 8.6) mm / metal case
		Frequency Range	1.000000 MHz - 350.000000 MHz
		Frequency Stability	±30ppm (±10ppm, ±20ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	30pF typ. (8pF to ∞)
		Delivery in	Bulk or radial tape



<b>TC26</b>	<b>TC26</b>	Case size	(2.0 x 6.0) mm, cylinder / metal case
		Frequency Range	32.768000 kHz, 20.000000 kHz - 350.000000 kHz
		Frequency Stability	±20ppm (±10ppm, ±50ppm, ±100ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	12.5pF typ. (6pF to ∞)
		Delivery in	Bulk



<b>TC38</b>	<b>TC38</b>	Case size	(3.0 x 8.0) mm, cylinder / metal case
		Frequency Range	32.768000 kHz, 100.000000 kHz
		Frequency Stability	±20ppm (±10ppm, ±50ppm ±100ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	12.5pF typ. (6pF to ∞)
		Delivery in	Bulk



<b>TC39</b>	<b>TC39</b>	Case size	(3.0 x 9.0) mm, cylinder / metal case
		Frequency Range	3.579545 MHz - 70.000000 MHz
		Frequency Stability	±20ppm (±10ppm, ±50ppm ±100ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	12.5pF typ. (6pF to ∞)
		Delivery in	Bulk



<b>TC310</b>	<b>TC3*10</b>	Case size	(3.0 x 10.0) mm, cylinder / metal case
		Frequency Range	4.000000 MHz - 4.500000 MHz
		Frequency Stability	±20ppm (±10ppm, ±50ppm ±100ppm, etc.)
		Temperature Range	-20 to +70°C (-40 to +85°C, etc.)
		Load Capacitance	12.5pF typ. (6pF to ∞)
		Delivery in	Bulk

## Monolithic Crystal Filter



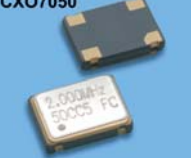


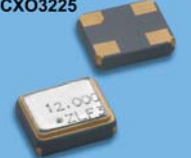
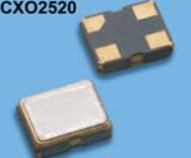


<b>MCF10M7A</b>	<b>MCF 10M7A</b>	Case size	(11.5 x 5.0 x 13.0) mm / metal case
	<b>MCF 21M12A</b>	Frequency Range	7.500000 MHz - 120.000000 MHz
		Description	Monolithic crystal, filter
		Delivery in	Bulk or radial tape






# COMTEC CRYSTALS Group

## CXO Clock Oscillator Products CMOS/TTL, SMD/Thru-Hole

 <p><b>CXO7050</b></p>	<p><b>CXO7050T</b> <b>CMOS/TTL</b> <i>Special: ultra low current</i> <i>s. specialty catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 1.7) mm / oscillator in ceramic case 20 kHz - 160 MHz (tristate) 5.0 V / 3.3 V / 2.5V / 1.8V / 1.2V / 1.0V ±50ppm typ. (±10ppm, ±20ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
 <p><b>CXO7050-6pad</b></p>	<p><b>CXO7050TF/V/W</b> <b>LVC MOS</b> <i>Special: low jitter, ultra low jitter</i> <i>s. specialty catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 1.8) mm / oscillator in ceramic case 125.01 MHz - 800 MHz (tristate) 3.3 V / 2.5V ±50ppm typ. (±10ppm, ±20ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
 <p><b>CXO5032</b></p>	<p><b>CXO5032T</b> <b>CMOS/TTL</b> <i>Special: ultra low current</i> <i>s. specialty catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(5.0 x 3.2 x 1.2) mm / oscillator in ceramic case 0.3 MHz - 160 MHz (tristate) 5.0 V / 3.3 V / 2.5V / 1.8V / 1.2V / 1.0V ±50ppm typ. (±10ppm, ±20ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
 <p><b>CXO3225</b></p>	<p><b>CXO3225T</b> <b>CMOS/TTL</b></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(3.2 x 2.5 x 1.2) mm / oscillator in ceramic case 1.5 MHz - 125 MHz (tristate) 5.0 V / 3.3 V / 2.5V / 1.8V / 1.2V / 1.0V ±50ppm typ. (±10ppm, ±20ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
 <p><b>CXO2520</b></p>	<p><b>CXO2520T</b> <b>CMOS/TTL</b></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(2.5 x 2.0 x 0.9) mm / oscillator in ceramic case 2.0 MHz - 50 MHz (tristate) 3.3 V / 2.5V / 1.8V ±50ppm typ. (±10ppm, ±20ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
 <p><b>3XO22C</b></p>	<p><b>3XO22C DIL 8</b> <b>CMOS/TTL</b></p>	<p>Case size Frequency Range Supply Voltage Tolerance Delivery in</p>	<p>(12.9 x 12.9 x 5.3) mm / oscillator in metal case 32.768 kHz - 150 MHz (tristate) 5.0 V or 3.3 V 25ppm to ±100ppm antistatic tubes</p>
 <p><b>3XO12C</b></p>	<p><b>3XO12C DIL 14</b> <b>CMOS/TTL</b></p>	<p>Case size Frequency Range Supply Voltage Tolerance Delivery in</p>	<p>(20.4 x 12.9 x 5.3) mm / oscillator in metal case 32.768 kHz - 150 MHz (tristate) 5.0 V or 3.3 V 25ppm to ±100ppm antistatic tubes</p>





## CXO Clock Oscillator Products LVPECL/LVDS, Differential, SMD

 <p><b>CXO7050-6pad</b></p>	<p><b>CXO7050P/D</b> <b>LVPECL/LVDS</b> <i>Special: low jitter, ultra low jitter</i> <i>s. specialty catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 1.7) mm / oscillator in ceramic case 750kHz - 800 MHz 3.3 V / 2.5V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
--	--	---	--





# COMTEC CRYSTALS Group

## CXO Clock Oscillator Products True Sine Wave, SMD/Thru-Hole

 <p><b>CXO7050</b></p>	<p><b>CXO7050S</b> <b>True Sine Wave</b></p> <p><i>s. speciality catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 1.7) mm / oscillator in ceramic case 10.0 MHz - 800 MHz 5.0 V / 3.3 V / 2.8V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
 <p><b>CXO5032</b></p>	<p><b>CXO5032S</b> <b>True Sine Wave</b></p> <p><i>s. speciality catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(5.0 x 3.2 x 1.2) mm / oscillator in ceramic case 10.0 MHz - 800 MHz 5.0 V / 3.3 V / 2.8V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
 <p><b>3XO22S</b></p>	<p><b>3XO22S DIL8</b> <b>True Sine Wave</b></p> <p><i>s. speciality catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(12.9 x 12.9 x 5.3) mm / oscillator in metal case 10.0 MHz - 800 MHz 5.0 V / 3.3 V / 2.8V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) antistatic tubes</p>
 <p><b>3XO12S</b></p>	<p><b>3XO12S DIL14</b> <b>True Sine Wave</b></p> <p><i>s. speciality catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(20.4 x 12.9 x 5.3) mm / oscillator in metal case 10.0 MHz - 800 MHz 5.0 V / 3.3 V / 2.8V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) antistatic tubes</p>





## CXO Clock Oscillator Products Low Power, CMOS, Thru-Hole

 <p><b>3XO22LP</b></p>	<p><b>3XO22LP DIL8</b> <b>CMOS</b></p> <p><i>Special:</i> <i>µA range</i> <i>s. speciality catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(12.9 x 12.9 x 5.3) mm / oscillator in metal case 1 Hz - 160 kHz 15V / 12V / 5.0 V / 3.3 V ±50ppm typ. (±10ppm, 25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) antistatic tubes</p>
 <p><b>3XO12LP</b></p>	<p><b>3XO12LP DIL14</b> <b>CMOS</b></p> <p><i>Special:</i> <i>µA range</i> <i>s. speciality catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(20.4 x 12.9 x 5.3) mm / oscillator in metal case 1 Hz - 160 kHz 15V / 12V / 5.0 V / 3.3 V ±50ppm typ. (±10ppm, 25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) antistatic tubes</p>

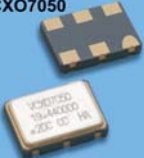


# COMTEC CRYSTALS Group

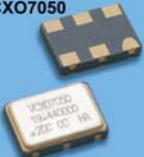


## VCXO (Voltage Controlled Crystal Osc.) CMOS/TTL, SMD/Thru-Hole

	<b>VCXO7050T</b> <b>CMOS/TTL</b>	Case size Frequency Range Supply Voltage Frequency Stability Frequency modulators Temperature Range Delivery in	(7.0 x 5.0 x 1.7) mm / oscillator in ceramic case 0.625 MHz - 55.200000 MHz 5.0 V / 3.3 V / 2.5V / 1.8V ±25ppm typ. (±50ppm, ±100ppm etc.) ±50 ~ ± 200ppm -20 to +70°C typ. (-40 to +85°C) Tape & Reel
	<b>CXO7050TF, V, W</b> <b>LVC MOS</b> <i>Special: low jitter,            ultra low jitter            s. specialty catalog</i>	Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in	(7.0 x 5.0 x 1.8) mm / oscillator in ceramic case 50.01 MHz - 800 MHz 3.3 V ±50ppm typ. (±10ppm, ±20ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape & Reel
	<b>VCXO5032T</b> <b>CMOS/TTL</b>	Case size Frequency Range Supply Voltage Frequency Stability Frequency modulators Temperature Range Delivery in	(5.0 x 3.2 x 1.2) mm / oscillator in ceramic case 1.500000 MHz - 50.000000 MHz 5.0 V / 3.3 V ±25ppm typ. (±50ppm, ±100ppm etc.) ±50 ~ ± 200ppm -20 to +70°C typ. (-40 to +85°C) Tape & Reel
	<b>VCXO-12C DIL14</b> <b>CMOS/TTL</b>	Case size Frequency Range Supply Voltage Frequency Stability Frequency modulators Temperature Range Delivery in	(20.4 x 12.9 x 5.3) mm / oscillator in metal case 1.000000 MHz - 50.000000 MHz 5.0 V / 3.3 V / 2.5V / 1.8V ±25ppm typ. (±50ppm, ±100ppm etc.) ±50 ~ ± 200ppm -20 to +70°C typ. (-40 to +85°C) antistatic tubes

## VCXO LVPECL/LVDS Differential, SMD

	<b>VCXO7050P/D</b> <b>LVPECL/LVDS</b> <i>Special: low jitter,            ultra low jitter            s. specialty catalog</i>	Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in	(7.0 x 5.0 x 1.7) mm / oscillator in ceramic case 38MHz - 800 MHz 3.3 V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape & Reel
---	---	---	--

## VCXO True Sine Wave SMD, Thru-Hole


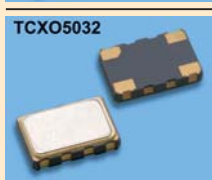

	<b>VCXO7050S</b> <b>True Sine Wave</b> <i>s. specialty catalog</i>	Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in	(7.0 x 5.0 x 1.7) mm / oscillator in ceramic case 10.0 MHz - 800 MHz 5.0 V / 3.3 V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape & Reel
	<b>VCXO5032S</b> <b>True Sine Wave</b> <i>s. specialty catalog</i>	Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in	(5.0 x 3.2 x 1.2) mm / oscillator in ceramic case 10.0 MHz - 800 MHz 5.0 V / 3.3 V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) Tape & Reel
	<b>VCXO-12S DIL14</b> <b>True Sine Wave</b> <i>s. specialty catalog</i>	Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in	(20.4 x 12.9 x 5.3) mm / oscillator in metal case 10.0 MHz - 800 MHz 5.0 V / 3.3 V / 2.8V ±50ppm typ. (25ppm, ±100ppm, etc.) -40 to +85°C typ. (-20 to +70°C) antistatic tubes






# COMTEC CRYSTALS Group


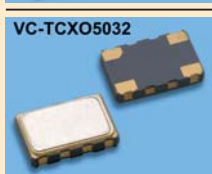
## TCXO (Temperature Compensated Crystal Osc.) CMOS, SMD/Thru-Hole

 <p><b>TCXO7050</b></p>	<p><b>TCXO7050T</b> <b>CMOS/TTL</b></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 2.3) mm / oscillator in ceramic case 20 kHz - 800 MHz 5.0 V / 3.3 V / 3.0V / 2.8V ±0.5ppm to ±3.0ppm -20 to +70°C typ. (-40 to +85°C) Tape &amp; Reel</p>
 <p><b>TCXO5032</b></p>	<p><b>TCXO5032T</b> <b>CMOS/TTL</b> <i>Special: low jitter, ultra low jitter</i></p> <p><i>s. specialty catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(5.0 x 3.2 x 2.2) mm / oscillator in ceramic case 32.768kHz / 1.0 MHz - 200 MHz 3.3 V / 3.0 V / 2.8V ±0.5ppm to ±2.5ppm -20 to +70°C typ. (-40 to +85°C) Tape &amp; Reel</p>
 <p><b>TCXO</b></p>	<p><b>TCXO DIL14</b> <b>CMOS/TTL</b></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(20.4 x 12.9 x 5.3) mm / oscillator in metal case 20 kHz - 800 MHz 5.0 V / 3.3 V / 3.0V / 2.8V ±0.5ppm to ±3.0ppm -20 to +70°C typ. (-40 to +85°C) antistatic tubes</p>


## TCXO LVPECL/LVDS Differential SMD

 <p><b>VC-TCXO7050 6pad</b></p>	<p><b>TCXO7050P/D</b> <b>LVPECL/LVDS</b></p> <p><i>s. specialty catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 2.3) mm / oscillator in ceramic case 10MHz - 800 MHz 3.3 V ±1.0ppm to ±5.0ppm -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
---	---	---	--



## VC-TCXO CMOS SMD

 <p><b>VC-TCXO7050</b></p>	<p><b>VC-TCXO7050T</b> <b>CMOS/TTL</b></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 2.3) mm / oscillator in ceramic case 20 kHz - 800 MHz 5.0 V / 3.3 V / 3.0V / 2.8V ±0.5ppm to ±3.0ppm -20 to +70°C typ. (-40 to +85°C) Tape &amp; Reel</p>
 <p><b>VC-TCXO5032</b></p>	<p><b>VC-TCXO5032T</b> <b>CMOS/TTL</b></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(5.0 x 3.2 x 2.2) mm / oscillator in ceramic case 32.768kHz / 1.0 MHz - 200 MHz 3.3 V / 3.0 V / 2.8V ±0.5ppm to ±2.5ppm -20 to +70°C typ. (-40 to +85°C) Tape &amp; Reel</p>

## VC-TCXO LVPECL/LVDS Differential SMD

 <p><b>VC-TCXO7050 6pad</b></p>	<p><b>VC-TCXO7050P/D</b> <b>LVPECL/LVDS</b></p> <p><i>s. specialty catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 2.3) mm / oscillator in ceramic case 10MHz - 800 MHz 3.3 V ±1.0ppm to ±5.0ppm -40 to +85°C typ. (-20 to +70°C) Tape &amp; Reel</p>
--	--	---	--

## VC-TCXO Clipped Sine Wave SMD

 <p><b>VC-TCXO7050CS</b></p>	<p><b>VC-TCXO7050CS</b> <b>Clipped Sine Wave</b></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(7.0 x 5.0 x 2.0) mm / oscillator in ceramic case 10 MHz - 40 MHz 5.0 V / 3.3 V / 3.0V / 2.8V ±0.5ppm to ±3.0ppm -20 to +70°C typ. (-40 to +85°C) Tape &amp; Reel</p>
 <p><b>VC-TCXO5032CS</b></p>	<p><b>VC-TCXO5032CS</b> <b>Clipped Sine Wave</b></p> <p><i>s. specialty catalog</i></p>	<p>Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in</p>	<p>(5.0 x 3.2 x 2.2) mm / oscillator in ceramic case 10 MHz - 40 MHz 5.0 V / 3.3 V / 3.0V / 2.8V ±0.5ppm to ±3.0ppm -20 to +70°C typ. (-40 to +85°C) Tape &amp; Reel</p>



# COMTEC CRYSTALS Group

## OCXO (Oven Controlled Crystal Oscillator) Thru-Hole



<b>OCXO-14T</b> <b>CMOS/TTL</b> <b>True Sine Wave</b> <b>Voltage Control</b>  <i>s. specialty catalog</i>	Case size Frequency Range Supply Voltage Frequency Stability Temperature Range Delivery in	(20.4 x 13.2 x 10.5) mm / oscillator in metal case 1.25MHz - 100 MHz 12V / 5.0V / 3.3V ±0.025ppm to ±0.5ppm -40 to +85°C typ. (-0 to +60°C) antistatic tubes
--	---	---

## Programmable Oscillators SMD/Thru-Hole



<b>CXP7050</b>	Case size Frequency Range Supply Voltage Frequency Stability Delivery in	(7.0 x 5.0 x 1.8) mm, in ceramic case 1.000000 MHz - 133.000000 MHz 5.0 V, 3.3 V, 2.7 V ±50ppm (-40 to +85°C), ±25ppm (-40 to +85°C) antistatic tubes
----------------	--	---



<b>CXP5032</b>	Case size Frequency Range Supply Voltage Frequency Stability Delivery in	(5.0 x 3.2 x 1.0) mm, in ceramic case 1.000000 MHz - 133.000000 MHz 5.0 V, 3.3 V, 2.7 V ±50ppm (-40 to +85°C), ±25ppm (-40 to +85°C) antistatic tubes
----------------	--	---



<b>3XP22C</b> <b>3XP12C</b>	Case size Case size Frequency Range Supply Voltage Frequency Stability Delivery in	(12.9 x 12.9 x 5.3) mm, in metal case (20.4 x 12.9 x 5.3) mm, in metal case 1.000000 MHz - 133.000000 MHz 5.0 V, 3.3 V, 2.7 V ±25ppm (-40 to +85°C) antistatic tubes
--------------------------------	---	---

## Ceramic Resonators



<b>CTA CC-MG</b>	Case size Frequency Range Frequency Stability Temperature Range Delivery in	(7.3 x 3.3 x 1.9) mm / SMD without capacitance 1.800000 MHz - 8.000000 MHz + 0.5% -20 to +80°C Tape & Reel
------------------	---	--



<b>CTA CV-MX</b>	Case size Frequency Range Frequency Stability Temperature Range Delivery in	(3.7 x 3.1 x 1.2) mm / SMD without capacitance 7.000000 MHz - 90.000000 MHz + 0.5% -20 to +80°C Tape & Reel
------------------	---	---



<b>CTT CC-MG</b>	Case size Frequency Range Frequency Stability Temperature Range Delivery in	(7.3 x 3.3 x 1.9) mm / SMD with capacitance 1.800000 MHz - 8.000000 MHz + 0.5% -20 to +80°C Tape & Reel
------------------	---	---



<b>CTT CV-MX</b>	Case size Frequency Range Frequency Stability Temperature Range Delivery in	(3.7 x 3.1 x 1.2) mm / SMD with capacitance 7.000000 MHz - 90.000000 MHz + 0.5% -20 to +80°C Tape & Reel
------------------	---	--

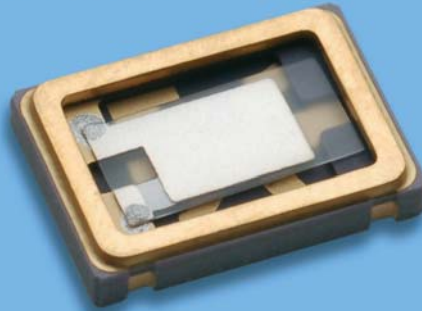
## Other Specialties

**TC26**



© COMTEC CRYSTALS Group

**CXO7050**



© COMTEC CRYSTALS Group

---

### We can also fulfill your needs in many special situations ...

For example, we can furnish you with "open" quartzes and oscillators as shown here. These products are used in special situations or for research. These are not cut open after finishing, but rather are normal items before the last finishing step, the sealing in a "can" or "cap".

In these products, the electrodes are no longer hermetically sealed under a protective gas, as is the case with normal units. For this reason, at your request, we can also coat the electrodes with gold to protect them from corrosion.

You can discuss these and other special items with our technical engineers any time. Just call!

---

### Auch für besondere Anforderungen haben wir eine Antwort ...

Zum Beispiel, auch „offene“ Quarze und Oszillatoren, wie hier abgebildet, können wir liefern. Solche Produkte werden für spezielle Anwendungen oder in der Forschung benötigt. Diese Teile werden nicht nachträglich geöffnet, sondern es handelt sich um normale Teile bei denen der letzte Herstellungsschritt, die Versiegelung mit der „Kappe“, nicht erfolgt.

Bei diesen Produkten sind die Elektroden nicht mehr, wie bei normalen Produkten, hermetisch unter Schutzgas versiegelt. Deswegen können wir auch auf Wunsch diese vergolden, um der Korrosion vorzubeugen.

Diese und andere Wünsche können sie gerne mit unseren Ingenieuren besprechen. Anruf genügt!

---

### Pour les demandes bien spéciales, nous avons aussi toujours une solution ...

Par exemple, nous sommes en mesure de vous fournir des quartz "ouverts" comme celui présenté sur la photo. Ces produits sont utilisés lors d'applications bien particulières ou dans le domaine de la recherche. Ces pièces ne sont pas ouvertes après obtention du produit fini, elles ne sont tout simplement pas fermées.

Dans ce cas, les électrodes ne sont plus scellées hermétiquement sous atmosphère gazeuse protégée. Ainsi, nous proposons de recouvrir les électrodes avec une fine couche d'or pour éviter la corrosion.

Nos ingénieurs se tiennent à votre disposition pour de plus amples renseignements. Un appel suffit!





## **COMTEC CRYSTALS Group**

This Brochure contains a portion of our complete line of quartz products. You will find a larger selection of our products on our web pages under:  
<http://www.comtec-crystals.com>

For example, we have many different case forms, frequencies, and also various accessories. Most of the products on our internet pages can be delivered from our stock on hand.

We can also program different oscillator types to your specifications.

If you do not find what you're looking for, please contact us. Our staff will be happy to help you. We are also glad to make a quantity-dependent pricing for you.

**Tel.: +49 8121 77 81 60**

**Fax: +49 8121 77 81 77**

**Internet: <http://www.comtec-crystals.com>**

**Email: [info@comtec-crystals.com](mailto:info@comtec-crystals.com)**

Diese Broschüre enthält einen Auszug aus unserem umfangreichen Angebot an Quarzprodukten. Auf unseren Webseiten unter:

<http://www.comtec-crystals.com>

finden Sie andere Bauformen, Frequenzen und auch Zubehör. Eine Vielzahl von Produkten, die auf unseren Internetseiten dargestellt sind, können wir ab Lager liefern.

Wir können auch verschiedene Oszillatoren für Sie nach Ihren Spezifikationen programmieren.

Falls Sie das Gesuchte nicht finden, nehmen Sie bitte Kontakt mit uns auf. Unsere Mitarbeiter stehen Ihnen zur Verfügung. Wir machen Ihnen gerne ein Angebot.

**Tel.: +49 8121 77 81 60**

**Fax: +49 8121 77 81 77**

**Internet: <http://www.comtec-crystals.com>**

**Email: [info@comtec-crystals.com](mailto:info@comtec-crystals.com)**

Cette plaquette contient un extrait de notre catalogue de quartz et d'oscillateurs.

Sous l'adresse internet:

<http://www.comtec-crystals.com>

vous trouverez l'ensemble de nos produits: tous les types de boîtiers, diverses fréquences et les accessoires correspondants. La plupart des produits référencés sur notre site internet sont en stock.

Nous sommes également en mesure de programmer les oscillateurs selon vos spécifications.

Et si vous ne trouvez pas ce que vous cherchez, contactez-nous! Nous nous tenons à votre disposition au

**Tel: +33 3.88.73.21.62**

**Fax: +33 3.88.73.01.18**

**Internet: <http://www.comtec-crystals.com>**

**Email: [sales@comtec-crystals.com](mailto:sales@comtec-crystals.com)**



# COMTEC

## Contact

<http://www.comtec-crystals.com>

Comtec Crystals GmbH  
Sultenstrasse 12-14  
85586 Poing  
Germany

Tel: +49 8121-77 81 60  
Fax: +49 8121-77 81 77  
E-Mail: [info@comtec-crystals.com](mailto:info@comtec-crystals.com)

Comtec Crystals SARL  
23, rue du Faucon  
67500 Haguenau  
France

Tel: +33 3.88.73.21.62  
Fax: +33 3.88.73.01.18  
E-Mail: [sales@comtec-crystals.com](mailto:sales@comtec-crystals.com)