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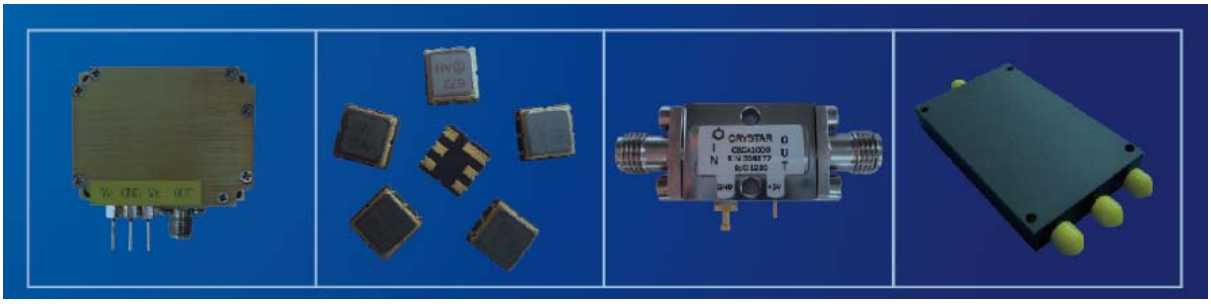

## OVEN CONTROLLED CRYSTAL OSCILLATOR

| Model | Frequency f(MHz) | Frequency Stability Vs Temp.(ppm) | Phase Noise SΦ(dBc/Hz) (fm=1KHz/100KHz) 10MHz Typ | Aging/year ppm(Max) | Output |
|---|---|---|---|---|---|
| OS8/OS14 Series (Low Power) | 5-250 | ±0.005~0.1 | -155/-165 | 0.05 | S/T/H |
| OSM15 Series (SMD Low Power) | 5-100 | ±0.005~0.1 | -155/-165 | 0.05 | S/T/H |
| OS20 Series | 8-100 | ±0.0002~0.003 | -155/-165 | 0.05 | S/T/H |
| OS25/OSM25 Series(SMD) | 8-100 | ±0.0002~0.003 | -155/-165 | 0.05 | S/T/H |
| OS30x Series | 8-120 | ±0.0002~0.003 | -155/-165 | 0.05 | S/T/H |
| OS36/OS38x Series | 5-100 | ±0.0001~0.002 | -155/-165 | 0.03 | S/T/H |
| DOS551 Series (Two-layer Constant Temp.) | 5-100 | ±0.0001~0.002 | -155/-165 | 0.02 | S/T/H |

## TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

| Model | Frequency f(MHz) | Frequency Stability Vs Temp.(ppm) | Operation Temperature Max | Operation Voltage V | Output |
|---|---|---|---|---|---|
| TS5 Series（SMD） | 10-20 | ±0.05～5 | -55～+85℃ | 5/3.3 | C |
| TS7 Series（SMD） | 8-40 | ±0.05～5 | -55～+85℃ | 5/3.3 | C |
| TS8/TSM11Series（SMD） | 8-40 | ±0.05～5 | -55～+85℃ | 5/3.3 | S/T/H/C |
| TS12/TS14/TS15 Series | 10-200 | ±0.5～5 | -55～+85℃ | 12/5/3.3 | S/T/H/C |
| TSH36 Series(HF) | 120-500 | ±0.5～5 | -55～+85℃ | 12/5 | S |

## MINIATURIZATION VCO

| Model | Frequency MHz | Tuning Voltage V | Voltage Control Sensitivity MHz/V Typ | Output Power dBm Max | Harmonic Rejection dBc Max | Phase Noise @10/100KHz dBc/Hz Typ | Tuning Capacitor pF Typ | Power V/mA Typ | Size |
|---|---|---|---|---|---|---|---|---|---|
| CES880A | 25-50 | 1-14 | 2-4 | 10±1.5 | -10 | -123/-143 | 1000 | 12/30 | SM64D |
| CES880B | 50-100 | 0.5-15 | 3-6 | 10±1.5 | -10 | -123/-143 | 1000 | 12/30 | SM64D |
| CV320S | 300-350 | 1-14 | 3-5 | 10±1.5 | -10 | -117/-137 | 100 | 12/70 | SM64D |
| CES401B | 300-600 | 1-19 | 10-30 | 13±1.5 | -10 | -105/-125 | 200 | 12/30 | SM64D |
| CES711A | 350-390 | 1-11 | 4-6 | 10 | -10 | -118/-138 | 200 | 5/60 | SM64D |
| CES711B | 390-440 | 1-11 | 6-9 | 10 | -10 | -117/-137 | 200 | 5/60 | SM64D |
| CES402B | 500-1000 | 1-19 | 20-40 | 13±1.5 | -10 | -105/-125 | 100 | 12/30 | SM64D |
| CES711 | 535-635 | 1-15 | 7-10 | 13±1 | -15 | -100/-120 | 100 | 12/70 | SM64D |
| CV620S | 580-680 | 1-14 | 7-10 | 10±1.5 | -10 | -112/-133 | 100 | 12/70 | SM64D |
| CES711C | 610-660 | 1-11 | 5-9 | 10 | -10 | -114/-134 | 100 | 12/60 | SM64D |
| CES405 | 1000-2000 | 1-20 | 40-100 | 10±1.5 | -10 | -98/-120 | 100 | 12/70 | SM64D |
| CES831 | 1800-1960 | 1-14 | 15-25 | 10±1.5 | -15 | -95/-118 | 100 | 12/70 | SM64D |
| CES406 | 2000-4000 | 1-20 | 60-250 | 10±1.5 | -13 | -85/-108 | 100 | 5/60 | SM64D |
| CES714 | 2800-4200 | 1-20 | 100-55 | 10±15 | -15 | -84/-108 | 45 | 5/65 | SM64D |
| CES715A | 4000-4500 | 1-10 | 40-90 | 8±2 | -20 | -85/-110 | 45 | 5/60 | SM64D |
| CES715B | 4000-5000 | 1-15 | 60-110 | 8±2 | -20 | -85/-110 | 45 | 5/60 | SM64D |
| CES102 | 4000-8000 | 1-20 | 100-400 | 11±1.5 | -15 | -77/-102 | 45 | 12/70 | SM64D |
| CES715C | 4200-5400 | 1-20 | 85-45 | 10±1.5 | -15 | -83/-107 | 45 | 5/65 | SM64D |
| CES715D | 4500-5000 | 1-10 | 40-90 | 8±2 | -20 | -85/-110 | 45 | 5/60 | SM64D |
| CES715E | 5000-5500 | 1-10 | 40-90 | 8±2 | -20 | -83/-108 | 45 | 5/60 | SM64D |
| CES716 | 5000-6000 | 1-15 | 80-120 | 10±1.5 | -15 | -82/-105 | 45 | 12/70 | SM64D |
| CES716A1 | 5500-6000 | 1-11 | 40-90 | 8±2 | -20 | -82/-106 | 45 | 5/60 | SM64D |
| CES716A2 | 6100-6600 | 1-12 | 30-80 | 10±1.5 | -15 | -81/-105 | 45 | 12/65 | SM64D |
| CES716A3 | 6600-7000 | 1-11 | 40-80 | 8±2 | -20 | -80/-104 | 45 | 5/60 | SM64D |
| CES716A4 | 7000-7500 | 1-12 | 40-80 | 6±2 | -20 | -78/-103 | 45 | 5/60 | SM64D |
| CES718 | 8000-9000 | 1-14 | 60-110 | 10±1.5 | -20 | -72/-97 | 45 | 12/70 | SM64D |

# BROADBAND VCO

| Model | Frequency MHz | Tuning Voltage V | Voltage Control Sensitivity MHz/V Typ | Output Power dBm Max | Harmonic Rejection dBc Max | Phase Noise @10/100KHz dBc/Hz Typ | Tuning Capacitor pF Typ | Power V/mA Typ | Size |
|---|---|---|---|---|---|---|---|---|---|
| CE880A | 25-50 | 1-12 | 2-3 | 10±1.5 | -10 | -134/-154 | 1000 | 12/15 | TO-8D |
| CE880AZ | 40-80 | 1.5-15 | 3-5 | 13±1.5 | -10 | -125/-145 | 1000 | 12/30 | TO-8D |
| CE880B | 50-100 | 1-15 | 4-7 | 13±1.5 | -10 | -125/-145 | 1000 | 12/25 | TO-8D |
| CE880BK | 50-150 | 1-21 | 2-7 | 8±1.5 | -10 | -115/-137 | 1000 | 12/25 | TO-8D |
| CE881 | 70-140 | 1-14 | 4-8 | 13±1.5 | -12 | -123/-143 | 1000 | 12/25 | TO-8D |
| CE882 | 100-200 | 1-18 | 5-9 | 13±1.5 | -10 | -115/-135 | 300 | 12/30 | TO-8D |
| CE882K | 100-300 | 1-20 | 7-15 | 10±2 | -10 | -105/-125 | 300 | 12/60 | TO-8D |
| CE882B | 125-250 | 1-17 | 5-13 | 13±1.5 | -10 | -112/-132 | 300 | 12/30 | TO-8D |
| CE883 | 150-300 | 1-19 | 7-11 | 13±1.5 | -10 | -109/-129 | 300 | 12/30 | TO-8D |
| CE883-8C | 150-300 | 1-18 | 7-11 | 13±1.5 | -10 | -109/-129 | 300 | 12/30 | TO-8D |
| CE884 | 200-400 | 1-20 | 9-13 | 13±1.5 | -10 | -107/-126 | 300 | 12/30 | TO-8D |
| CE884K | 250-500 | 1-20 | 14-24 | 13±1.5 | -10 | -105/-125 | 300 | 12/30 | TO-8D |
| CE401B | 300-600 | 1-19 | 10-30 | 13±1.5 | -10 | -107/-127 | 180 | 12/30 | TO-8D |
| CE401D | 400-800 | 1-18 | 15-40 | 13±1.5 | -10 | -105/-125 | 150 | 12/30 | TO-8D |
| CTMB125 | 400-800 | 1-18 | 15-40 | 13±1.5 | -10 | -105/-125 | 90 | 12/30 | TO-8D |
| CE402B | 500-1000 | 1-19 | 20-40 | 13±1.5 | -10 | -105/-125 | 90 | 12/30 | TO-8D |
| CE402F | 500-1000 | 0.8-20 | 22-35 | 13±1.5 | -10 | -104/-125 | 90 | 12/65 | TO-8D |
| CE402C | 600-1200 | 1-19 | 20-45 | 14±1.5 | -10 | -100/-121 | 90 | 12/30 | TO-8D |
| CE483 | 700-1400 | 1-19 | 26-69 | 12±1.5 | -10 | -99/-119 | 90 | 12/65 | TO-8D |
| CE403AN | 800-1400 | 1-15 | 30-60 | 12±1.5 | -10 | -100/-121 | 90 | 12/70 | TO-8D |
| CE403B | 800-1500 | 1-19 | 35-65 | 14±1.5 | -10 | -100/-120 | 90 | 12/35 | TO-8D |
| CE484 | 800-1600 | 1-19 | 26-70 | 12±1.5 | -10 | -98/-118 | 90 | 12/65 | TO-8D |
| CTMB095 | 900-1600 | 1-18 | 30-70 | 12±1.5 | -10 | -98/-118 | 90 | 12/35 | TO-8D |
| CE405W | 900-1800 | 1-20 | 40-100 | 12±1.5 | -10 | -95/-115 | 90 | 12/65 | TO-8D |
| CE405WK | 900-2140 | 1-21 | 40-100 | 12±1.5 | -10 | -96/-117 | 90 | 12/70 | TO-8D |
| CE015 | 1000-1700 | 1-18 | 30-60 | 13±1.5 | -10 | -96/-117 | 90 | 12/35 | TO-8D |

| Model | Frequency MHz | Tuning Voltage V | Voltage Control Sensitivity MHz/V Typ | Output Power dBm Max | Harmonic Rejection dBc Max | Phase Noise @10/100KHz dBc/Hz Typ | Tuning Capacitor pF Typ | Power V/mA Typ | Size |
|---|---|---|---|---|---|---|---|---|---|
| CE405 | 1000-2000 | 1-17 | 40-100 | 11±1.5 | -10 | -95/-115 | 90 | 12/65 | TO-8D |
| CE405G | 1000-2000 | 0.8-20 | 28-71 | 12.5±1.5 | -10 | -98/-120 | 90 | 15/70 | TO-8D |
| CTMB089 | 1200-2000 | 2-18 | 40-100 | 13±1.5 | -10 | -95/-115 | 90 | 12/35 | TO-8D |
| CE405Y | 1200-2400 | 1-20 | 40-100 | 11±1 | -10 | -93/-115 | 90 | 12/65 | TO-8D |
| CE405Z | 1400-2800 | 1-20 | 40-110 | 12.5±1.5 | -10 | -91/-113 | 90 | 12/65 | TO-8D |
| CE404B | 1500-2000 | 1-17 | 20-50 | 12±1.5 | -10 | -96/-117 | 90 | 12/65 | TO-8D |
| CE714A1 | 1500-2000 | 4-20 | 22-47 | 12±1.5 | -15 | -101/-122 | 90 | 12/55 | TO-8D |
| CE404BG | 1500-2500 | 1.5-16 | 40-100 | 12.5±1.5 | -13 | -90/-110 | 90 | 12/70 | TO-8D |
| CE404BK | 1500-3000 | 1-20 | 40-100 | 12.5±1.5 | -13 | -90/-110 | 90 | 12/70 | TO-8D |
| CE404BL | 1600-3200 | 1-19 | 40-160 | 12.5±1.5 | -13 | -89/-110 | 90 | 12/65 | TO-8D |
| CE714A2 | 2000-2600 | 4-20 | 22-47 | 12±1.5 | -15 | -100/-122 | 90 | 12/55 | TO-8D |
| CE486B | 2000-3000 | 1-15 | 50-100 | 12.5±1.5 | -15 | -89/-110 | 45 | 12/30 | TO-8D |
| CE129 | 2000-4000 | 1-20 | 60-230 | 11.5±1.5 | -13 | -85/-108 | 90 | 15/70 | TO-8D |
| CE406 | 2000-4000 | 1-20 | 60-250 | 11.5±1.5 | -13 | -87/-110 | 90 | 12/65 | TO-8D |
| CE406K | 2220-4850 | 1-23 | 50-250 | 10.5±1.5 | -13 | -84/-108 | 90 | 5/65 | TO-8D |
| CE406Y | 2500-5000 | 1-20 | 60-270 | 10.5±1.5 | -13 | -81/-106 | 90 | 12/65 | TO-8D |
| CE716B | 3000-5500 | 0.5-14 | 130-300 | 11.5±1.5 | -13 | -80/-106 | 90 | 12/70 | TO-8D |
| CE716C | 3000-6000 | 1-18 | 90-300 | 11.5±1.5 | -13 | -80/-106 | 90 | 12/75 | TO-8D |
| CE716D | 3500-7000 | 1-19 | 80-330 | 10.5±1.5 | -13 | -77/-103 | 90 | 12/75 | TO-8D |
| CE102K | 4000-6000 | 0.3-5.5 | 320-460 | 11.5±1.5 | -15 | -78/-105 | 45 | 9/65 | TO-8D |
| CE102L | 4000-6000 | 1-14 | 120-230 | 11.5±1.5 | -15 | -80/-105 | 45 | 12/70 | TO-8D |
| CE102 | 4000-8000 | 1-20 | 110-400 | 11.5±1.5 | -13 | -76/-102 | 45 | 12/75 | TO-8D |
| CE716E | 4500-9000 | 1-20 | 140-440 | 11.5±1.5 | -15 | -70/-97 | 45 | 12/75 | TO-8D |
| CE102LA | 5000-7000 | 1-14 | 140-300 | 11.5±1.5 | -15 | -71/-98 | 45 | 12/70 | TO-8D |
| CE102LB | 6000-8000 | 0.3-5.5 | 280-540 | 11.5±1.5 | -15 | -71/-96 | 45 | 9/65 | TO-8D |
| CE102LC | 6000-8000 | 1-14 | 110-270 | 11.5±1.5 | -15 | -72/-98 | 45 | 12/65 | TO-8D |
| CE717K | 6000-9000 | 1-14 | 140-310 | 11.5±1.5 | -15 | -71/-97 | 45 | 12/70 | TO-8D |
| CE717KA | 7000-9000 | 1-14 | 100-300 | 11.5±1.5 | -15 | -73/-98 | 45 | 12/70 | TO-8D |
| CE718K | 8000-10000 | 1-14 | 130-270 | 11.5±1.5 | -15 | -69/-94 | 45 | 12/70 | TO-8D |
| CE718KA | 8000-11000 | 0.5-20 | 60-300 | 10.5±1.5 | -15 | -67/-92 | 45 | 12/70 | TO-8D |
| CDQ073 | 8000-12000 | 0.3-14.5 | 200-400 | 12.5±2.5 | -15 | -70/-96 | 45 | 12/300 | 47×25×11.2 |
| CE718KB | 9000-11000 | 1-15 | 60-230 | 10.5±1.5 | -15 | -69/-93 | 45 | 12/70 | TO-8D |
| CDQ074 | 12000-18000 | 0.3-14.5 | 250-850 | 12.5±2.5 | -15 | -64/-92 | 45 | 12/300 | 56×25×11.2 |

# PASSBAND CRYSTAL FILTER SERIES

| Model | Freq. (MHz) | Passband Bandwidth (kHz) | I.L. (dB) | Group Delay Ripple (us) | Rectangular Factor | Stopband Loss (dB) | Operation Temp. (℃) | Dimension ($mm^3$) |
|---|---|---|---|---|---|---|---|---|
| PCF3516A-70M | 70 | $BW_6$≥38 | ≤4 | ≤23 | $BW_{60}/BW_3$≤2.5 | ≥60 | -55~+85 | 35×16×8.5 |
| PCF3516B-70M | 70 | $BW_{1.2}$≥70 | ≤4 | ≤10 | $BW_{60}/BW_{1.2}$≤2.5 | ≥60 | -55~+85 | 35×16×8.5 |
| PCF3516C-70M | 70 | $BW_3$≥10 | ≤5 | / | $BW_{60}/BW_3$≤4 | ≥60 | -55~+85 | 35×16×8.5 |
| PCF3020A-70M | 70 | $BW_1$=100 ±10 | ≤4 | Phase Deviation ≤±$5^0$ | $BW_{40}/BW_3$≤2.5 | ≥70 | -10~+60 | 30×20×12 SMA |
| PCF4020-70M | 70 | $BW_3$≥150 | ≤4 | / | $BW_{60}/BW_3$≤2.5 | ≥70 | -10~+60 | 40×20×9 |
| PCF3020B-70M | 70 | $BW_6$≥25 | ≤5 | / | $BW_{64}/BW_6$≤2 | ≥75 | -45~+70 | 30×20×13 |
| PCF3020C-70M | 70 | $BW_6$≥44 | ≤4 | / | $BW_{64}/BW_6$≤3.6 | ≥75 | -45~+70 | 30×20×13 |
| PCF3020D-70M | 70 | $BW_3$≥140 | ≤4 | / | $BW_{60}/BW_3$≤3 | ≥65 | -55~+85 | 30×20×13 |
| PCF3116-75M | 75 | $BW_3$≥4 | ≤3 | / | / | ≥40 | -45~+85 | 31×16×18 |
| PCF4820-91.4M | 91.4 | $BW_3$≥8 | ≤6.5 | / | $BW_{60}/BW_3$≤3 | ≥80 | -55~+85 | 48×20×12.5 |
| PCF3020-100M | 100 | $BW_1$≤10 | ≤4 | / | / | ≥70 | -55~+85 | 30×20×12 SMA |
| PCF3819-107.52M | 107.52 | $BW_3$≥12 | ≤6 | / | $BW_{60}/BW_3$≤4 | ≥70 | -45~+85 | 38×19×12.5 |
| PCF3616A-124.8M | 124.8 | $BW_3$≥60 | ≤3 | ≤1 | $BW_{40}/BW_3$≤4 | ≥80 | -40~+70 | 36×16×12.5 |
| PCF3616B-124.8M | 124.8 | $BW_3$≥60 | ≤3 | ≤1 | $BW_{40}/BW_3$≤4.5 | ≥80 | -40~+70 | 36×16×12.5 |
| PCF3616C-124.8M | 124.8 | $BW_3$≥70 | ≤3 | ≤1 | $BW_{40}/BW_3$≤4.5 | ≥80 | -40~+70 | 36×16×12.5 |
| PCF3616D-124.8M | 124.8 | $BW_3$≥60 | ≤3 | ≤2 | $BW_{40}/BW_3$≤4.5 | ≥75 | -40~+70 | 36×16×12.5 |
| PCF2515-124.8M | 124.8 | $BW_3$≥60 | ≤3 | ≤1 | $BW_{40}/BW_3$≤4.5 | ≥60 | -40~+70 | 25×15×10 |
| PCF3020-200M | 200 | $BW_1$≥15 | ≤4 | / | / | ≥60 | -55~+85 | 30×20×12 SMA |

# STOPBAND CRYSTAL FILTER SERIES

| Freq. (MHz) | Model | Suppressed Freq.Points (pcs) | Stopband BW (kHz) | Passband BW1 (dB/MHz) | I.L. (dB) | Described Freq. Range Loss (dB) | Woking Temp. (℃) | Package ($mm^3$) |
|---|---|---|---|---|---|---|---|---|
| 10 | SCF4028-10M | 4 | / | ≥-0.037<br>+0.068 | ≤2.5 | $f_0$+(101～103)kHz≥30<br>$f_0$+(91.6～93.6)kHz≥40<br>$f_0$+(85.2～87.2)kHz≥50<br>$f_0$+(78.3～80.3)kHz≥60 | -20～+60 | 40×28×13 |
| 20.1 | SCF2515-20.1M | 1 | $BW_{40}$≥2 | ≥±5 | ≤2.5 | $f_0$±1kHz≥40 | -10～+60 | 25×15×12.5 |
| 70 | SCF4012-70M | 1 | $BW_{40}$≥10 | ≥±10 | ≤2.5 | $f_0$±5kHz≥40 | -40～+70 | 40.6×12.7×9.6 |
| 100 | SCF4012-100M | 1 | $BW_{40}$≥20 | ≥±10 | ≤2.5 | $f_0$±10kHz≥40 | -40～+70 | 40.6×12.7×9.6 |
| 150 | SCF4012-150M | 1 | $BW_{35}$≥50 | ≥±18 | ≤2.5 | $f_0$±25kHz≥35 | 0～+60 | 40.6×12.7×9.6 |
| 220 | SCF2515-220M | 1 | $BW_{15}$≥10 | ≥±10 | ≤2.5 | $f_0$±5kHz≥15 | -55～+85 | 25×15×10 |
| 250 | SCF2515-250M | 1 | $BW_{15}$≥10 | ≥±10 | ≤2.5 | $f_0$±5kHz≥15 | -55～+85 | 25×15×10 |

Note:Passband Bandwidth with "-"and"+" means low-end and high-end of deviating centre frequency bandwidth.

# SAW FILTER

| P/N | Center Frequency (MHz) | Pass Band (MHz) | Insertion Loss (dB Max) | Package (mm) | Application |
|---|---|---|---|---|---|
| CB33SB | 33.9 | 5 | 16 | 17.2x8.9 | |
| CB33SD | 33.9 | 5 | 15.5 | 13.7x4.9 | Digital TV |
| CB35S | 35.46 | 8.82 | 20 | 13.3x6.5x1.6 | |
| CB36SA | 36.125 | 7.8 | 31 | 16.3x4x3.5 | Cable Modem |
| CB36SB | 36.125 | 7.8 | 31 | 16.3x6.3x4.0 | Cable Modem |
| CB36SF | 36.17 | 7.9 | 23 | 13.7x4.8 | |
| CB36SG | 36.17 | 7.2 | 22.5 | 13.8x4.9 | |
| CB70SA | 70 | 3.0 | 8.2 | 13.3x6.5x1.8 | |
| CB70SG | 70 | 1.4 | 22 | 19x6.5x1.8 | |
| CB70SH | 70 | 1.1 | 20 | 19.0x6.5x1.8 | |
| CB140SE | 140 | 0.4 | 8 | 19x6.5x1.93 | |
| CB140SF | 140 | 6 | 12.5 | 13.3x6.5x1.8 | |
| CB145SB | 145 | 0.05 | 3.5 | 13.3x6.5x1.8 | |
| CB159SB | 159.6 | 4 | 28 | 35x12.8x9.2 | |
| CB168SB | 168 | 1 | 14 | 7.0x5.0x1.82 | WLL |
| CB190SD | 190 | 4.6 | 7 | 3.0x3.0x1.4 | |
| CB210SA | 210.38 | 1.0 | 10 | 5.0x5.0x1.65 | Cellular phones |
| CB256SA | 255 | 90 | 16 | 5.0x5.0x1.7 | |
| CB280SB | 280 | 18.50 | 10 | 5.0x5.0x1.15 | WLAN |
| CB300SB | 300 | 0.1 | 7 | 7.0x5.0x1.8 | |
| CB374SA | 374 | 17 | 10 | 3.8x3.8x1.4 | WLAN |
| CB400SD | 400 | 0.15 | 7.5 | 3.0x3.0x1.1 | Cellular phones |
| CB480SB | 480 | 3.9 | 10.3 | TO-39 | Satellite TV |
| CB533S | 533.33 | 4.5 | 9 | 3.8x3.8x1.1 | |
| CB600S | 600 | 4.5 | 10 | 3.0x3.0x1.1 | |
| CB829S | 829.5 | 14.6 | 26 | 13.3x6.5x1.65 | |
| CB950SB | 950 | 7.7 | 23.7 | 14.8x5.8 | |

| P/N | Center Frequency (MHz) | Pass Band (MHz) | Insertion Loss (dB Max) | Package (mm) | Application |
|---|---|---|---|---|---|
| CA139SA | 139 | 8.0 | 6.5 | 5.0x5.0x1.7 | Pager |
| CA155SB | 155 | 8.0 | 6.5 | 5.0x5.0x1.65 | Pager |
| CA163SA | 163 | 8.0 | 6.5 | 5.0x5.0x1.7 | Pager |
| CA220S | 220 | 4 | 4.2 | 5.0x5.0x1.7 | |
| CA315SE | 315 | 0.6 | 2.5 | 3.0x3.0x1.3 | |
| CA390S | 390 | 1.1 | 4.0 | 5.0x5.0x1.7 | Remote control |
| CA402SB | 402 | 4 | 4.5 | 3.8x3.8x1.4 | |
| CA416SA | 416 | 20 | 4.2 | 3.8x3.8x1.4 | |
| CA500SA | 500 | 6 | 4.7 | 3.0x3.0x1.3 | |
| CA611SB | 611 | 7 | 5.0 | 7.0x5.0x2.0 | |
| CA702S | 702 | 20 | 2.2 | 3.0x3.0x1.3 | |
| CA793SB | 793 | 10 | 2.5 | 3.0x3.0x1.3 | Cellular Phones |
| CA810SA | 810 | 5 | 5 | 3.0x3.0x1.3 | |
| CA960S | 960 | 36 | 4 | 3.0x3.0x1.4 | |
| CA1150SA | 1150 | 16 | 5.0 | 3.0x3.0x1.1 | WLAN |
| CA1220SD | 1220 | 8.0 | 6.0 | 3.0x3.0x1.2 | Cable Modem |
| CA1300SB | 1300 | 8 | 4.5 | 3.0x3.0x1.4 | |
| CA1484S | 1484.3 | 40 | 5 | 3.0x3.0x1.4 | |
| CA1575SV | 1575.42 | 2 | 1.5 | 1.4x1.1x0.7 | GPS |
| CA1642SA | 1642.5 | 35 | 3.5 | 2.5x2.0x1.0 | |
| CA1880SA | 1880 | 60 | 4.0 | 3.0x3.0x1.4 | Cellular Phones |
| CA2040SA | 2040 | 60 | 5 | 3.0x3.0x1.1 | |
| CA2245S | 2245 | 60 | 6 | 3.0x3.0x1.4 | |
| CA2330S | 2330 | 60 | 3.2 | 3.0x3.0x1.4 | |
| CA2535S | 2535 | 70 | 3.6 | 3.0x3.0x1.4 | |
| CA2592S | 2592.5 | 27 | 4 | 3.0x3.0x1.4 | |
| CA2665S | 2665 | 70 | 3.6 | 3.0x3.0x1.4 | |

# DIELECTRIC FILTER

## 2.3GHz WIMAX(WIBRO)FILTERS

| Pass Band MHz | Insertion Loss | | Attenuation | | | W×L×H mm | Features |
|---|---|---|---|---|---|---|---|
| | dB typ | dB max | dB typ | dB Min | @MHz | | |
| 2300-2400 | 0.7 | TBD | 60<br>55 | 50<br>50 | 2170<br>2530 | 56×9.5×15 | Low Loss &<br>High Attenuation |
| 2300-2400 | 0.7 | 1.0 | 70<br>35 | 60<br>20 | 2166<br>2768 | 22×5.6×5.8 | Low Loss &<br>High LO Rejection |
| 2300-2400 | 1.0 | 1.5 | 40<br>30 | 35<br>25 | 2166<br>2768 | 9.0×5.6×3.2 | Compact &<br>High Attenuation |
| 2300-2400 | 0.9 | 1.5 | 25<br>15 | 20<br>10 | 2066<br>2768 | 7.7×4.9×2.6 | Compact & Low Cost |
| 2300-2700 | 0.7 | 1.0 | 35<br>40 | 40<br>TBD | 4600-5400<br>6900-8100 | 2.5×2.0×1.0 | Low Pass Filter |

## 2.6GHz WIMAX FILTERS

| Pass Band MHz | Insertion Loss | | Attenuation | | | W×L×H mm | Features |
|---|---|---|---|---|---|---|---|
| | dB typ | dB max | dB typ | dB Min | @MHz | | |
| 2495-2690 | 0.7 | TBD | 58<br>55 | 50<br>50 | 2370<br>2820 | 56×8.9×15 | Low Loss & High<br>Attenuation |
| 2495-2690 | 0.7 | 1.0 | 70<br>35 | 60<br>20 | 2222<br>2963 | 22×5.2×5.8 | Low Loss & High LO<br>Rejection |
| 2495-2690 | 1.0 | 1.5 | 52<br>33 | 40<br>25 | 2222<br>2963 | 9.0×5.2×3.2 | Compact & High<br>Attenuation |
| 2495-2690 | 0.9 | 1.5 | 30<br>15 | 20<br>10 | 2222<br>2963 | 7.7×4.5×2.6 | Compact & Low Cost |
| 2300-2700 | 0.7 | 1.0 | 35<br>40 | 40<br>TBD | 4600-5400<br>6900-8100 | 2.5×2.0×1.0 | Low Pass Filter |

## 3.5GHz WIMAX FILTERS

| Pass Band MHz | Insertion Loss | | Attenuation | | | W×L×H mm | Features |
|---|---|---|---|---|---|---|---|
| | dB typ | dB max | dB typ | dB Min | @MHz | | |
| 3400-3600 | 0.7 | 1.0 | 67<br>35 | 60<br>20 | 3000<br>3800 | 22×4.1×5.8 | Low Loss & High LO Rejection |
| 3400-3600 | 0.9 | 1.5 | 55<br>29 | 50<br>25 | 3127<br>3868 | 9.0×4.0×3.2 | Compact & High Attenuation |
| 3400-3600 | 1.8 | 2.3 | 52<br>50 | 45<br>45 | 3100<br>3868 | 7.7×4.2×2.3 | Compact & High Attenuation |
| 3400-3600 | 0.8 | 1.5 | 26<br>27 | 23<br>15 | 2700<br>3867 | 7.7×3.0×2.6 | Compact & Low Cost |
| 3400-3800 | 0.7 | 1.0 | 45<br>42 | 40<br>40 | 6800-7600<br>10200-11400 | 2.5×2.0×1.0 | Low Pass Filter |

## 5GHz FILTER FOR WIMAX & WIRELESS BROADBAND

| Pass Band MHz | Insertion Loss | | Attenuation | | | W×L×H mm | Features |
|---|---|---|---|---|---|---|---|
| | dB typ | dB max | dB typ | dB Min | @MHz | | |
| 4705-5005 | 1.0 | 2.0 | 45<br>42 | 30<br>35 | 4000<br>5610 | 9.0×4.0×3.5 | Compact & High Attenuation |
| 5160-5340 | 1.5 | 2.0 | 56<br>37 | 35<br>35 | 2483<br>5480 | 9.0×3.6×3.5 | Compact & High Attenuation |
| 5150-5350 | 1.6 | 2.0 | 25<br>40 | 20<br>20 | 4970<br>6050 | 4.2×3.0×1.8 | Compact & Low Cost |
| 5470-5725 | 1.8 | 2.3 | 52<br>50 | 45<br>40 | 4925<br>6270 | 7.3×3.7×2.3 | Compact & High Attenuation |
| 5480-5720 | 1.5 | 2.0 | 70<br>45 | 35<br>35 | 2483<br>5340 | 9.0×3.6×3.5 | Compact & High Attenuation |
| 5470-5725 | 1.2 | 1.5 | 25<br>19 | 20<br>15 | 4925<br>6270 | 7.7×2.6×2.6 | Compact & Low Cost |
| 5275-5850 | 1.8 | 2.0 | 52<br>50 | 45<br>40 | 5094<br>6481 | 7.3×3.7×2.3 | Compact & High Attenuation |
| 5275-5850 | 1.2 | 1.5 | 26<br>13 | 25<br>10 | 5094<br>6481 | 7.7×2.5×2.6 | Compact & Low Cost |
| 5275-5875 | 2.1 | 3.4 | 34<br>19 | 30<br>15 | 5425<br>6175 | 4.3×2.8×1.8 | Compact & Low Cost |
| 4900-6100 | 0.7 | 1.0 | 46<br>36 | 40<br>35 | 9800-12200<br>14700-18300 | 2.5×2.0×1.0 | Low Pass Filter |

# MECHANICAL FILTER TYPICAL PRODUCTS

| Model | Centre Freq | Passband Bandwidth | Passband Ripple | I.L. | Rectangular Fator | Stopband Loss |
|---|---|---|---|---|---|---|
| CSMF-06-B-1-0.04-45 | 1kHz | 0.04±0.01kHz | ≤1.0dB | ≤8dB | $k_{40/3}$≤6.0 | ≥45dB |
| CSMF-03-B-1.2-0.20-50 | 1.2kHz | 0.20±0.02kHz | ≤1.0dB | ≤8dB | $k_{40/3}$≤3.0 | ≥50dB |
| CSMF-03-B-5-1.00-60 | 5kHz | 1.00±0.01kHz | ≤1.0dB | ≤4dB | $k_{40/3}$≤3.0 | ≥60dB |
| CSMF-05-C-8.5-0.035-50 | 8.5kHz | 0.035±0.006kHz | ≤1.0dB | ≤4dB | $k_{40/3}$≤3.0 | ≥50dB |
| CSMF-03-B-10-0.10-60 | 10kHz | 0.10±0.01kHz | ≤1.5dB | ≤4dB | $k_{40/3}$≤3.0 | ≥60dB |
| CSMF-02-B-17-0.21-50 | 17kHz | 0.21±0.01kHz | ≤1.5dB | ≤2.5dB | $k_{40/3}$≤3.0 | ≥50dB |
| CSMF-04-C-21-0.20-50 | 21kHz | 0.20±0.01kHz | ≤1.5dB | ≤3.0dB | $k_{40/3}$≤3.0 | ≥50dB |
| CSMF-03-D-28-0.40-50 | 28kHz | 0.40±0.01kHz | ≤1.5dB | ≤2.5dB | $k_{40/3}$≤3.0 | ≥50dB |
| CSMF-04-D-32-4.00-50 | 32kHz | 4.00±0.021kHz | ≤1.0dB | ≤3.0dB | $k_{40/3}$≤6.0 | ≥50dB |
| CSMF-04-D-48-0.20-45 | 48kHz | 0.20±0.011kHz | ≤1.5dB | ≤5.0dB | $k_{40/3}$≤5.0 | ≥45dB |
| CSMF-06-B-85-1.5-60 | 85kHz | 1.50±0.01kHz | ≤1.5dB | ≤6.0dB | $k_{40/3}$≤4.0 | ≥60dB |
| CSMF-04-A-100-0.5-50 | 100kHz | 0.50±0.01kHz | ≤0.5dB | ≤3.0dB | $k_{40/3}$≤5.0 | ≥50dB |
| CSMF-06-A-128-3.0-50 | 128kHz | 3.00±0.01kHz | ≤1.5dB | ≤3.0dB | $k_{40/3}$≤2.0 | ≥50dB |
| CSMF-01-D-188-4.5-60 | 188kHz | 4.50±0.1kHz | ≤1.5dB | ≤3.0dB | $k_{40/3}$≤2.5 | ≥60dB |
| CSMF-01-D-208-4.5-60 | 208kHz | 4.50±0.1kHz | ≤1.5dB | ≤3.0dB | $k_{40/3}$≤2.5 | ≥60dB |
| CSMF-01-D-235-4.2-60 | 235kHz | 4.20±0.05kHz | ≤1.5dB | ≤3.0dB | $k_{40/3}$≤2.5 | ≥60dB |
| CSMF-04-D-300-0.45-50 | 300kHz | 0.45±0.05kHz | ≤1.0dB | ≤6.0dB | $k_{40/3}$≤5.0 | ≥50dB |
| CSMF-01-C-520-7.0-60 | 520kHz | 7.00±0.5kHz | ≤1.0dB | ≤3.0dB | $k_{40/3}$≤2.0 | ≥60dB |