

VCO & PLL Synthesizer

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Feature

Excellent phase noise&spurious
 Frequency range from 20MHz to 6GHz
 Low cost&custom design
 All harmonics are below -20dBc

Application

Cellular, PCS, IMT-2000
 UP/Down Converter
 Clock&Data retiming circuit



Specification

Function	RF/Local Frequency	IF/Local Frequency	Structure	Package Type
PLL Modules	20 to 6000MHz	-	VCO+PLL IC	PA3,PA7,PS3,PD1,PM1
PLL Modules (Internal Ref.)	20 to 6000MHz	-	VCO+PLL+TCXO	PA9,PD6
Dual PLL Modules	20 to 1000MHz	20 to 1000MHz	2VCO+Dual PLL IC	PD3
Fixed PLL Modules	20 to 2500MHz	-	VCO+PLL IC+ROM	PA6,PD4,PD7, (Optional EPROM)
Fixed PLL Modules (Internal Ref.)	20 to 2500MHz	-	VCO+PLL IC +ROM+TCXO	PA8,PD5

Voltage Controlled Oscillator

Specification

Part Number	Frequency Range (MHz)	Supply Voltage (Vdc)	Tuning Voltage (Vdc)	Output Power (dBm)	Current Consump. (mA, max)	Phase Noise @25KHz (dBc/Hz) (max)	Audio Modulation Sensitivity (mV,rms)(s=1KHz)	Dimension (WxXxZ) (mm)
R0061AX	61	3.0	0~2.7	3	4.4	-112@10KHz	-	12.4 x 10.4 x 3.5
R0065BZ	65.05	12.0	1.0 – 4.0	9±3	20	-117	-	15.0 x 10.0 x 4.0
R0070BY	65~75	5.0	0.5~4.5	5	8	-116@10 KHz	-	15.0 x 10.4 x 4.0
R0070BZ	70.0	12.0	1.0 – 4.0	9±3	20	-117	-	15.0 x 10.0 x 4.0
R0110BZ	110.0	12.0	1.0 – 4.0	9±3	20	-117	-	15.0 x 10.0 x 4.0
R0128BY	115~140	5.0	1~4	3	16	-113@10 KHz	-	15.0 x 10.4 x 4.0
R0120BY	110~130	5.0	0.5~4.5	3±2	20	-110	-	15.0x 10.4x 4.0
RTV5Y139	124 ~ 154	5.0	0.5 – 4.5	3.0	20	-105	-	12.4 x 10.0 x 4.0
R0130AY	125~135	5.0	1~4	4	6	-113@10 KHz	-	12.4 x 10.4 x 3.5
R0145BZ	145.0	12.0	1.0 – 4.0	9±3	20	-117	-	15.0 x 10.0 x 4.0
R0155BZ	155.1	12.0	1.0 – 4.0	9±3	20	-117	-	15.0 x 10.0 x 4.0
R0240AY	210~270	5.0	0.5~4.5	1.5	13	-106@10 KHz	-	12.7x 12.7 x 4.0
R0265BY	245~285	5.0	0.5~4.5	3±2	20	-110	-	15.0x 10.4x 4.0
R0250AX	249.5	5.0	1~4	0	5	-113@10 KHz	-	12.4 x 10.4 x 3.5
R0310BY	280~340	5.0	0.5~4.5	3±2	20	-105	-	15.0 x10.4x 4.0
R0350BY	330~370	5.0	0.5~4.5	3±2	20	-110	-	15.0 x10.4x 4.0
R0428BYE	355 ~ 500	5.0±0.25	0.2 – 5.0	4±3	15	-110	-	15.0 x 10.0 x 4.0
R0386BY	373.5~398.5	5.0	1.0 – 4.0	5±3	15	-113	186±20%(*±3 KHz)	15.0 x 10.0 x 4.0
R0390BY	385 ~ 395	5.0	1.0 – 4.0	2	15	-115	-	15.0 x 10.0 x 4.0
R0410BY	398 ~ 422	5.0	1.0 – 4.0	2±2	10	-113	200±20%(*±6 KHz)	15.0 x 10.0 x 4.0
RV-5Z410	418~422	5.0	12±2	0	15	-105	-	15.0x 10.4x 4.0
RTV5Y435	400 ~ 700	5.0	0.5 – 4.5	3.0	20	-105	-	12.4 x 10.0 x 4.0
R0432BX	419.5~444.5	3.0	0.5 – 2.5	0	15	-105	186±20%(*±3 KHz)	15.0 x 10.0 x 4.0
RO433BY	420~445	5.0±0.25	+1.0~+4.0	2±2	10	-114	186±20%	15.0 x 10.0 x 4.0
R0490BYE	420 ~ 560	5.0±0.25	0.5 – 4.5	6±3	10	-110	-	15.0 x 10.0 x 4.0
R0491BY-B	428~498	5.0±0.25	+1.0~+4.0	4±2	30	-113	-	15.0x10.4x4.0
R0450BY	437.5~462.5	5.0	1.0 – 4.0	4±2	15	-113	-	15.0 x 10.0 x 4.0
R0458BY	445.5~470.5	5.0	1.0 – 4.0	5±3	15	-113	-	15.0 x 10.0 x 4.0
R0454AX	450.2~458.2	3.0±0.1	0.4 – 2.6	-8	5	-110	200±50%(*±3 KHz)	12.4 x 10.0 x 3.5
R0470BY	457.5~482.5	5.0	1.0 – 4.0	4±2	15	-115	-	15.0 x 10.0 x 4.0
R0491BY	478.5~503.5	5.0	1.0 – 4.0	0	15	-113	186±20%(*±3 KHz)	15.0 x 10.0 x 4.0
R0509AX	504.2~513.2	3.0±0.1	0.4 – 2.6	-8	5	-110	-	12.4 x 10.0 x 3.5
R0650CZ	600 ~ 700	10.0	3.0 – 10.0	3±2	20	-115	-	20.0 x 12.0 x 6.5
R0620BX	615~625	3.0	0.5~2.5	0	6	-107@10 KHz	-	15.0 x 10.4 x 4.0
R0755CY	750 ~ 800	5.0	1.0 – 4.0	0±2	20	-115	-	20.0 x 12.0x 6.5
R0766CZ	754 ~ 779	12.0	1.0 – 4.0	10±3	20	-117	-	20.0 x 12.0 x 6.5
R0802CY	795 ~ 810	5.0	1.0 – 4.0	0±2	20	-115	-	20.0 x 12.0 x 6.5
R0811CZ	799 ~ 824	12.0	1.0 – 4.0	10±3	20	-117	-	20.0 x 12.0 x 6.5
R0813AY	801.5~825.5	5.0±0.25	1.0 – 4.0	0	15	-110	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0837XYE	805 ~ 869	5.0±4.5	0.5 – 4.5	0±2	10	-110	-	12.4 x 10.0 x 3.5
R0831CY	818.5~843.5	5.0	0.5 – 4.5	5±3	25	-115	-	20.0 x 12.0 x 6.5
R0824AX	823 ~ 825	3.0	0.4 – 2.6	-8	5	-110	200±50%(*±8 KHz)	12.4 x 10.0 x 3.5
R0837AX	824 ~ 849	3.0	0.4 – 2.6	-8	5	-110	-	-
R0837AY	824 ~ 849	5.0	1.0 – 4.0	0	8	-114	200±20%(*±8 KHz)	12.4 x 10.0 x 3.5

Voltage Controlled Oscillator

Specification

Part Number	Frequency Range (MHz)	Supply Voltage (Vdc)	Tuning Voltage (Vdc)	Output Power (dBm)	Current Consump. (Ma, max)	Phase Noise @25KHz (dBc/Hz) (max)	Audio Modulation Sensitivity (Mv,rms)(s=1KHz)	Dimension (WxXxZ) (mm)
R0849AY	834 ~ 864	5.0±0.25	1.0 – 4.0	0±2	10	-110	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0857DY	837.2~877.2	5.0	0~5	5	13	-106@10 KHz	-	12.7 x 12.7 x 4
R0845AY	844 ~ 846	5.0	1.0 – 4.0	0	15	-114	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0864AX	855 ~ 872	3.0±0.15	0.3 – 2.7	-6	7	-108	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0870AY	855 ~ 885	5.0	1.0 ~ 4.0	0±2	10	-110	186±20%(*±8 KHz)	12.4x10.0x3.5
R0882AY	869 ~ 895	5.0	1.0 ~ 4.0	2±2	10	-113	200±20%(*±8 KHz)	12.4x10.0x3.5
R0894AY	873~914	5	2~7	0	5.9	-113@10 KHz	-	12.4 x 10.4 x 3.5
R0888DY	875~901	5.0±0.25	1.0~4.0	2±2	30	-106@10 KHz	-	12.7x12.7x4.0
R0890AY	875 ~ 905	5.0±0.25	1.0 ~ 4.0	0±2	10	-110	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0902AYB	887 ~ 917	5.0±0.25	1.0 ~ 4.0	0±2	10	-110	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0898AY	880 ~ 915	5.0	1.0 ~ 4.0	0±2	10	-114	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0902AY	890 ~ 915	4.2±0.2	1.0 ~ 4.0	-3	10	-113	258±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0910AY	895 ~ 925	5.0±0.25	1.0 ~ 4.0	0±2	10	-110	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0900AX	899 ~ 901	3.0	0.3 ~ 2.7	-6	7	-114	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0921AY	920 ~ 922	5.0	1.0 ~ 4.0	0	10	-110	186±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0945BY	933~967	5.0	1~3.6	3	11	-108@10 KHz	-	15.0 x 10.4 x 4.0
R0965AY	952 ~ 977	5.0	1.0 ~ 4.0	2	10	-113	200±20%(*±8 KHz)	12.4 x 10.0 x 3.5
R0968AY	955.5~980.5	4.2	1~4	-1	5.4	-110@10 KHz	-	12.4 x 10.4 x 3.5
R1018CY	1005~1030	5.0	0.5 ~ 4.5	5±3	25	-115	-	20.0 x 12.0 x 6.5
R1018AY	1006~1031	4.2	1.0 ~ 4.0	-6	10	-110	-	12.4 x 10.0 x 3.5
R1030DY	1030~1115	5.0	1~10	0	11	-105@10 KHz	-	12.7 x 12.7 X 4
R1080BY	1055~1105	5.0±0.25	+1.0~+4.0	4±2	20	-110	-	15.0 x 10.0 x 4.0
R1080CY	1060~1100	10.0±0.5	+0.5~+4.5	2±2	30	-109@10 KHz	-	20.0 x 12.0 x 6.5
R1163AY	1150~1185	5.0	1.0 ~ 4.0	0±2	10	-110	-	12.4 x 10.0 x 3.5
R1340BZ	1335~1345	10.0±0.5	+1.0~+4.0	2±2	20	-106	-	15.0 x 10.4 x 4.0
R1388BY	1382.5~1392.5	5.0±0.25	+1.0~+4.0	2±2	20	-100	-	15.0 x 10.0 x 4.0
R1395CY	1390~1399	5.0	1.0 ~ 4.0	0	25	-114	-	20.0 x 12.0 x 6.5
R1395BZ	1390~1400	10.0±0.5	+1.0 ~+4.0	2±2	20	-106@10 KHz	-	15.0 x 10.4 x 4.0
R1577CZ	1539~1615	10.0	2.0 ~ 10.0	2±2	25	-115	-	20.0 x 12.0 x 6.5
R1611BY	1606~1616	5.0±0.25	+1.0~+4.0	2±2	20	-95@10 KHz	-	15.0 x 10.0 x 4.0
RTV-5Y1665	1630~1700	5.0	0.5~4.5	2	25	-105	-	12.4x10.0x4.0
R1650CY	1645~1655	5.0	1~4	5	18	-107@10 KHz	-	20.2 x 12.2 x 6.5
R1685BY	1672~1679	5.0	1.0 ~ 4.0	3±2	15	-110	-	15.0 x 10.0 x 4.0
R1695BZ	1680~1720	12	1~4	4	15	-104@10 KHz	-	15.0 x 10.4 x 4.0
R1750AY	1720~1780	4.2	1.0 ~ 4.0	-3	10	-110	-	12.4 x 10.0 x 3.5
R1793CZ	1763~1823	10.0	3.0 ~ 10.0	3±2	25	-110	-	20.0 x 12.0 x 6.5
R1778AY	1766~1788	5.0	1.0 ~ 4.0	0	10	-110	-	12.4 x 10.0 x 3.5
R1820BM	1770~1870	5.0	0.0~5.0	0±2	30	-95@10 KHz	-	15.0 x 10.4 x 4.0
RTV-5Y1860	1825~1895	5.0	0.5~4.5	2	25	-105	-	12.4x10.0x4.0
R1885AY	1880~1890	5.0	1.0 ~ 4.0	0	10	-110	-	12.4 x 10.0 x 3.5
R1910CY	1890~1930	5.0	0.5 ~ 4.5	0	25	-105	-	20.0 x 12.0 x 6.5
R1933CY	1910~1955	5.0	0.5 ~ 4.5	0	25	-105	-	20.0 x 12.0 x 6.5
R1950BY	1920~1980	5.0	1~4	0	11	-102@10 KHz	-	15.0 x 10.4 x 4.0
R1963CY	1920~2005	5.0	0.5 ~ 4.5	2±3	25	-105	-	20.0 x 12.0 x 6.5

Voltage Controlled Oscillator

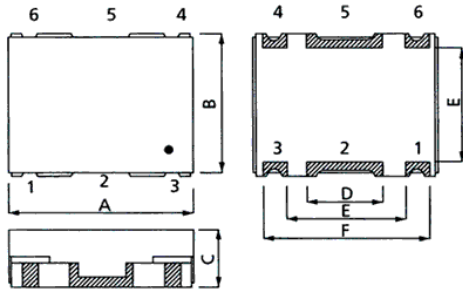
Specification

Part Number	Frequency Range (MHz)	Supply Voltage (Vdc)	Tuning Voltage (Vdc)	Output Power (dBm)	Current Consump. (Ma, max)	Phase Noise @25KHz (dBc/Hz) (max)	Audio Modulation Sensitivity (Mv,rms)(s=1KHz)	Dimension (WxXxZ) (mm)
R1960AY	1930~1990	4.2	1.25~4.25	-2	12	-105@10 KHz	-	12.4 x 10.4 x 3.5
R1955BY	1942~1967	5.0	1.0 ~ 4.0	3±2	15	-110	-	15.0 x 10.0 x 4.0
R1976CY	1949~2003	5.0	0.5~4.5	1	15	-104@10 KHz	-	20.2 x 12.2 x 6.5
R20504Y	1950~2150	5.0	0.5~4.5	+5±2	30	-96	-	12.70x12.70x4.0
R2010BM	1960~2060	5.0	0.0~5.0	0±2	30	-92@10 KHz	-	15.0 x 10.4 x 4.0
R2047CY	2017~2077	10.0	3.0 ~10.0	3±2	25	-105	-	20.0 x 12.0 x 6.5
R2070CY	2040~2100	5.0	1.0 ~ 4.0	3	15	-95@10 KHz	-	20.0 x 12.0 x 6.5
R2310CY	2260~2360	5.0	0.5~4.5	2	13	-100@10 KHz	-	20.2 x 12.2 x 6.5
R2367AY	2359~2375	4.2	1.0 ~ 4.0	-6	10	-110	-	12.4 x 10.0 x 3.5
R2420CZ	2410~2430	12	1~10	5	17	-98@10 KHz	-	20.2 x 12.2 x 6.5
R2450CY	2440~2460	8.0	1.0 ~ 8.0	5±3	30	-110	-	20.0 x 12.0 x 6.5
R2624BY	2596~2652	5.0	0.5~4.5	3±3	30	-90@10 KHz	-	15.0 x 10.4 x 4.0
R2670AM	2620~2720	5.0±0.25	0.0~5.0	0±3	30	-86@10 KHz	-	12.7x12.7x4.0
R2856DY	2756~2956	5.0	0.5~4.5	3±3	30	-93@10 KHz	-	12.7x12.7x2.8
R2810AM	2760~2860	5.0±0.25	0.0~5.0	0±3	30	-85@10 KHz	-	12.7x12.7x4.0
R2900CY	2800~3000	5.0	0.0 ~ 5.0	0	30	-105	-	20.0 x 12.0 x 6.5
R2995DY	2840~3150	5.0±0.25	0.2~6.0	3±2	30	-93@10 KHz	-	12.7x12.7x2.8
R2910AM	2860~2960	5.0±0.25	0.0~5.0	0±3	30	-85@10 KHz	-	12.7x12.7x4.0
R3000BY	2995~3005	5.0	1.0~4.0	0	18	-100@10 KHz	-	15.0 x 10.0 x 4.0
R3200BY	3180~3220	5.0	1~4	0	11	-98@10 KHz	-	15.0 x 10.4 x 4.0
R4538AM	2230~2307.5 4460~4615	5.0	0.5~4.5	0±3	40	-87@10 KHz -105@100 KHz	-	12.7 x 12.7 x 4.0
R4054BY	3963~4145	8.0	1~11	1	28	-97@10 KHz	-	15.0 x 10.4 x 4.0
R4750BY	4500~5000	5.0	0.15~12	2	30	-106@100KHz	-	15.0 x 10.4 x 4.0
R4785DY	4785	5.0±0.25	0.5~4.5	0±3	30	-75@10 KHz	-	12.7 x 12.7 x 4.0
R5070DY	5000~5600	5.0	0.45~12	2	30	-105@100KHz	-	12.7 x 12.7 x 4.0
R5300DY	5000~5600	5.0	0.45~12	2	40	-105	-	12.70x12.7x4.0
R5070DX	5070	3.0	0.5~2.5	0	15	-11@100 KHz	-	12.7 x 12.7 x 4.0



Mechanical dimension & Pin configuration

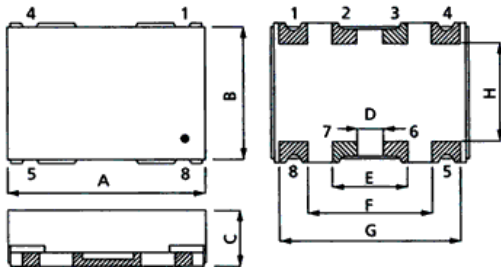
■ A-package (12.4 x 10.4 x 3.5)



Dimension (mm)			
A	12.4	E	7.6
B	10.4	F	10.4
C	3.5	G	8.0
D	5.0	tolerance : ± 0.2	

Pin No.	Connection	Pin No.	Connection
1	Vcon	3	Vcc
4	RF Out		
All other pins are GROUND			

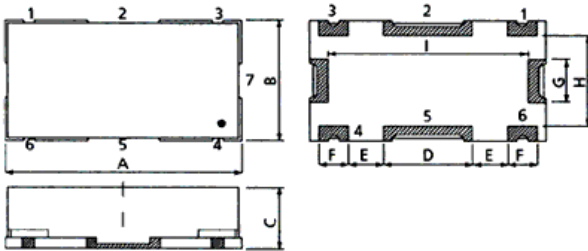
■ B-package (15.0 x 10.4 x 4.0)



Dimension (mm)			
A	15.0	E	5.4
B	10.4	F	9.0
C	4.0	G	13.0
D	1.8	H	7.0
tolerance : ± 0.2			

Pin No.	Connection	Pin No.	Connection
1	RF Out	8	Vcc
5	Vcon		
All other pins are GROUND			

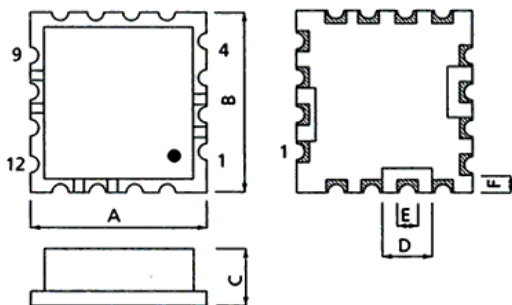
■ C-package (20.2 x 12.2 x 6.5)



Dimension (mm)			
A	20.2	F	2.4
B	12.2	G	4.3
C	6.5	H	9.1
D	7.6	I	17.0
E	3.0	tolerance : ± 0.2	

Pin No.	Connection	Pin No.	Connection
3	Vcc	4	RF Out
6	Vcon		
All other pins are GROUND			

■ D-package (12.7 x 12.7 x 4)



Dimension (mm)			
A	12.7	D	3.56
B	12.7	E	1.52
C	4	F	1.38
tolerance : ± 0.2			

Pin No.	Connection	Pin No.	Connection
2	Vcon	10	RF Out
14	Vcc		
All other pins are GROUND			