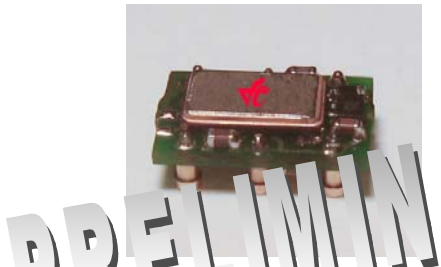
VFTX94 Series SMD VCXO

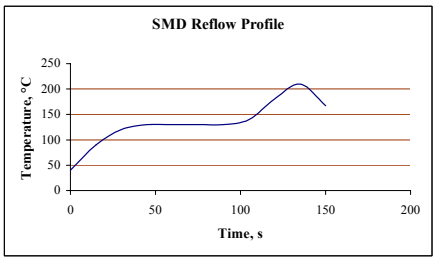
VF Technologies
COOL…TO THE TOUCH

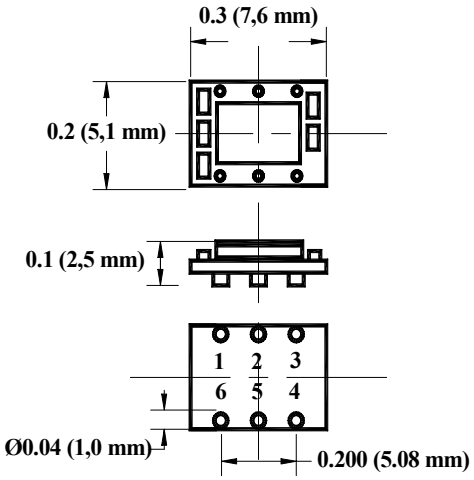
Product Data Sheet

Features

- **Small, 7.5mm x 5 mm SMD Package**
- **Very Low Phase Jitter and Phase Noise**
- **Excellent Frequency Stability**
- **Low Aging Crystal**
- **SONET/SDH stability available**
- **High Frequency, no multiplication**







Creating a Part Number

VFT	X	94				-APR, ppm	FREQUENCY, MHz

Tristate Control

Code	Specification
1	Pin #5
2	Pin #2

Supply Voltage

Code	Specification
5	5V ±5%
3	3.3V ±5%

Temperature Range

Code	Specification
A	-10°C to 60°C
B	0°C to 70°C
C	-40°C to 85°C

Frequency Stability

Code	Specification
N	±50 ppm
S	±20 ppm

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Specifications

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note

Absolute Maximum Ratings

Input Break Down Voltage	Vcc		-0.5		7.0	V	
Storage temp.	Ts		-40		125	° C	
Contr. Voltage	Vc		-1		9	V	

Electrical

Frequency Range	F		40		250	MHz	
Input Voltage	Vcc		3.135 4.75	3.30 5.0	3.465 5.25	V	Code 3 Code 5
Input Current	Icc	No Load			50	mA	@ 155 MHz
Frequency Stab.	ΔF/F	Overall			±50		@Vc = 1.65 V
Frequency Stability for SONET	ΔF/F	vs. Temperature vs. Vcc aging Overall		±10 ±1 ±1	 ±20	ppm ppm/V ppm/year ppm	 First Year @Vc = 1.65 V
Load	50 pF max						
Duty cycle		@50%	45	50	55	%	
Rise/Fall time	Tr/Tf	20 to 80 %		2		ns	
Logic "1" level	Voh		0.9Vcc			V	
Logic "0" level	Vol				0.1Vcc	V	
Start up time	Ts			2	10	ms	
Phase jitter		1σ		0.4	1	ps	fj>100 Hz
SSB Phase Noise		@10 Hz @100 Hz @1 KHz @10 KHz @100 KHz		-70 -100 -130 -150 -160		dBc/Hz	@155 MHz
Modulation BW	fm	@Vc=1.65V	>10KHz				@-3db
Input Impedance		fm < 10KHz	> 10KOhm				
Control voltage	Vc		0 0		3.3 5.0	V	L S
Deviation		Vc=0V to 5V,25°C Vc=0V to 3.3V,25°C		±75		ppm	
Absolute usable pull range		Over all		±20 ±32 ±50		ppm	 5V only
Deviation slope		Monotonic, positive		30		ppm/V	
Linearity			-10		+10	%	
Setability (Vc for center freq.)	Vc0	@25°C, Fnom.	1.25 2.0	1.65 2.5	2.05 3.0	V	L S
Tristate Function	Input HIGH (>2.5V),or floating: ACTIVE Input LOW (<0.5V) : INFINITE IMPEDANCE						
Enable/disable Time	Te/Td				100	ns	

Environmental and Mechanical

Operating temp. range	0°C to 70°C , -40°C to 85°C
Mechanical Shock	Per MIL-STD-202, Method 213, Cond. E
Thermal Shock	Per MIL-STD-883, Method 1011, Cond. A
Vibration	Per MIL-STD-883, Method 2007, Cond. A
Soldering Conditions	230°C for 90s Max
Hermetic Seal	Leak rate less than $5x10^{-8}$ atm.cc/s of helium (crystal only)

Electrical Connections

Pin Out	Pin #1- Voltage Control Pin #2 – Tristate control (code "2"), or N/C, (code "1") Pin #3 - Case, Gnd Pin #4 - Output Pin #5 – N/C (code "2"), or Tristate control (code "1") Pin #6 - Vcc

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