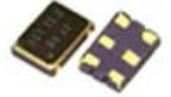


FTV53 Series

VCXO, 5.0 x 3.2mm, HCMOS/TTL



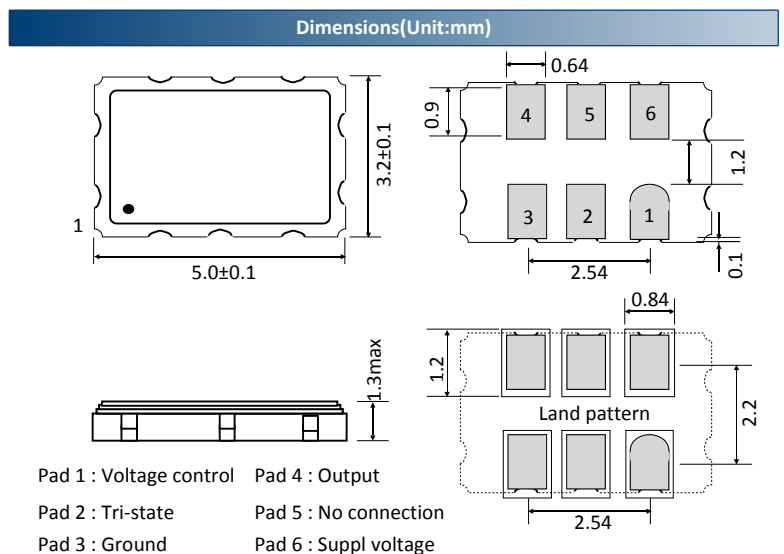
REACH and RoHS compliant
 Factory programmable device
 Fast lead time
 Typical phase jitter 1.0ps



Parameters	Specification		Remarks
Frequency range	F_nom	10.0MHz ~ 245.0MHz	
Supply voltage	Vcc	2.5V±5%, 3.3V±5%	
Frequency stability	F_stb	±25.0ppm, ±50.0ppm, ±100.0ppm	Includes initial tolerance, stability over temperature, load, Vcc
Aging	F_age	±2.0ppm max first year at 25°C	±10.0ppm max over 10 years
Operating temperature range (°C)	Topr	-10°C ~ +70°C, -40°C ~ +85°C	
Storage temperature (°C)	Tstg	-55°C ~ +125°C	
Output waveform		HCMOS/TTL	
Output load		15pF	
Output voltage high	Voh	HCMOS: 90% of Vcc min	
Output voltage low	Vol	HCMOS: 10% of Vcc max	
Rise time	Tr	3.0nsec max, 1.5nsec typical	Measured over 10% to 90% of waveform
Fall time	Tf	3.0nsec max, 1.5nsec typical	
Duty cycle		45%/55%	Measured at 50% of waveform
Current consumption	Icc	Table 1	
Start-up time	T_str	10.0msec max	
Phase jitter (RMS)		1.0psec typical (12kHz to 20MHz)	<100fsec for 1.875kHz to 20MHz
Phase noise		Table 2	
Frequency pulling	F_pull	2.5V : ±90.0ppm min, 3.3V : ±100.0ppm min	Up to ±200.0ppm min is available
Control voltage	Vc	2.5V : 1.25V ± 1.05V, 3.3V : 1.65V ± 1.35V	
Slope / Linearity		Positive / ±10% max, ±5% typical	
Modulation bandwidth		10kHz min	Measured at -3dB
Input impedance		1MΩ typical	
Moisture sensitive level / ESD sensitive device	MSL	1 / Yes	
Tri-state		Enable high, No connection or 0.7% of Vcc min is applied to Tri-state pin to Enable output	
		0.3% of Vcc max to disable output (high impedance)	
Output enable time / Disable time		200nsec max / 50 nsec max	

Frequency	2.5V	3.3V
10MHz	15mA	17mA
50MHz	18mA	20mA
100MHz	22mA	24mA
150MHz	24mA	28mA
200MHz	28mA	33mA
250MHz	31mA	37mA

Note: All values are typical over operating temperature range. Current without output is 16mA typical.



FTV53 Series

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Table 2. SSB Phase noise [dBc/Hz (typical)]

Offset	77.76MHz	122.88MHz	125MHz	156.25MHz	212.5MHz
10 Hz	-57	-68	-63	-55	-62
100 Hz	-94	-99	-94	-85	-93
1 kHz	-114	-113	-113	-109	-105
10 kHz	-123	-119	-118	-116	-113
100 kHz	-124	-120	-119	-118	-115
1 MHz	-144	-140	-137	-139	-135
10 MHz	-152	-148	-146	-146	-143
Phase jitter 12kHz to 20MHz, RMS	0.9ps	0.8ps	1.1ps	0.9ps	1.0ps

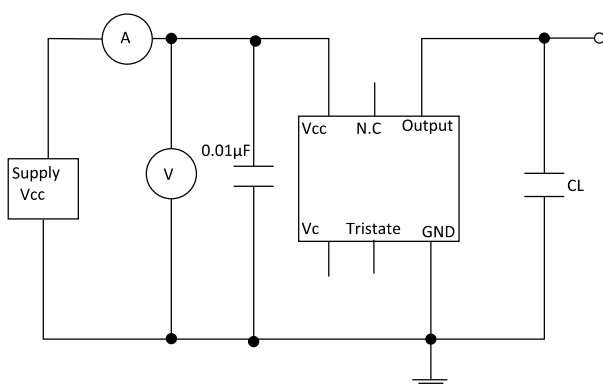
Part number generation

TV53	2600	B	B	I	E	E	J	P	H	N	L	-PF
ACT series Code	Frequency (MHz)	Frequency Stability all causes (\pm ppm)	Supply voltage (Vcc)	Operating temp. range ($^{\circ}$ C)	Linearity (\pm %)	Output wave	Minimum pulling (\pm ppm)	Polarity	Duty cycle (%/%)	Tristate	Tape & Reel	RoHS Code
TV53	26MHz = 2600 (Note 1)	25 = C 50 = B 100 = A	2.5 = C 3.3 = B	-10 \sim +70 = C -20 \sim +70 = B -40 \sim +85 = I	10 = E	HCMOS = E TTL = H	\pm 90 = K \pm 100 = B \pm 150 = C \pm 200 = D	Positive = P	45/55 = H	Yes = P No = N	Loose = L 1000 = C	-PF

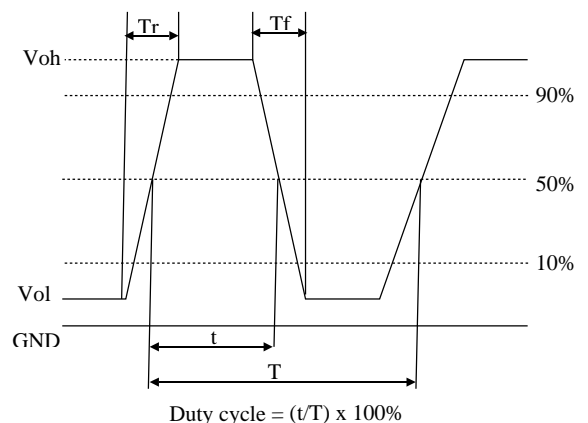
Note 1 : Frequency < 100MHz use first 4 digit of frequency in part numbering, Frequency > 100MHz use first 5 digit of frequency. Example: 26.00MHz = 2600, 8.00MHz = 0800, 14.7456MHz = 1474, 100MHz = 10000 .It is important to suffix the above part number with full frequency required to give a completed part number as illustrated below.

Full Example part number : TV53-2600BBIEEKPHNL-PF [26MHz], TV53-1474BBIEEKPHNL-PF [14.7456MHz]

HCMOS test circuit



Waveform

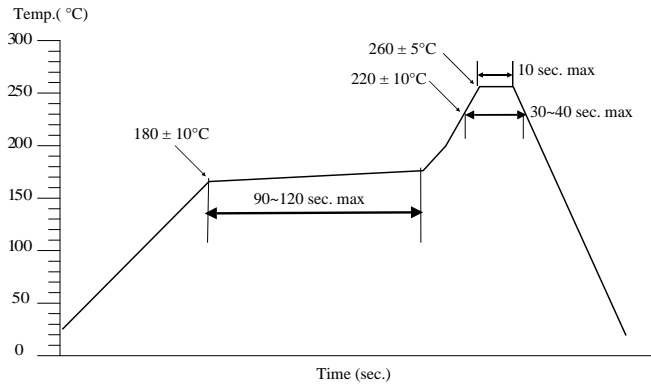


FTV53 Series

VCXO, 5.0 x 3.2mm, HCMOS/TTL



Solder reflow profile



Drawing control: (Internal use only)
Commodity code: 844370 90 99
Issue number : N1
Date : 01/02/2017
Internal reference : M6