

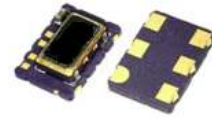
(V)TPL75 Series

TCXO/VC-TCXO, 7.0 x 5.0mm, LVPECL output

From ± 2.0 ppm stability over -30°C to 85°C

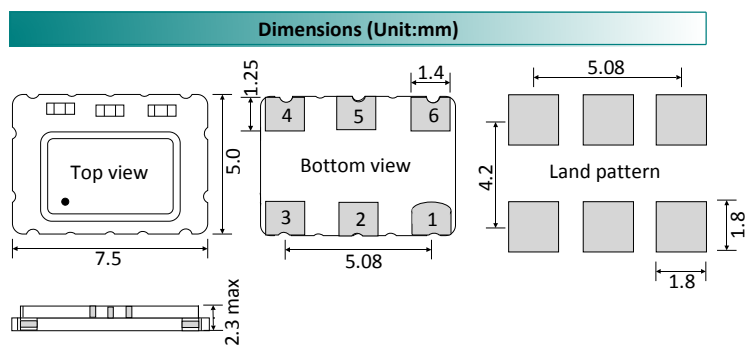
Low jitter specification

ESD sensitive device, Moisture sensitive level - 1



Parameters		Specification	Remarks
Frequency range	F _{nom}	12.0MHz ~ 800.0MHz	
Supply voltage	V _{cc}	3.3V	
Initial frequency tolerance	F _{tol}	± 2.0 ppm	at $+25^{\circ}\text{C} \pm 2^{\circ}\text{C}$
Frequency stability	vs Temperature	F _{stb} ± 1.0 ppm ~ ± 5.0 ppm	Table 1
	vs Load	F _{load} ± 0.3 ppm max.	$\pm 10\%$ load condition change
	vs Voltage	F _{Vcc} ± 0.3 ppm max.	$\pm 5\%$ input voltage change
	vs Aging	F _{age} ± 1.0 ppm/year max.	at $+25^{\circ}\text{C}$
	vs Reflow	± 1.0 ppm/year max.	1 reflow and measured after 24hrs
Operating temperature range ($^{\circ}\text{C}$)	T _{opr}	$0^{\circ}\text{C} \sim +50^{\circ}\text{C}$ to $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	Table 1
Storage temperature ($^{\circ}\text{C}$)	T _{stg}	$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$	
Output Wave Form / Output load		LVPECL	
Output voltage high	V _{oh}	V _{cc} - 1.025V (min)	Output load condition: 50Ω to V _{cc} - 2V
Output voltage low	V _{ol}	V _{cc} - 1.620V (max)	Output load condition: 50Ω to V _{cc} - 2V
Output load	V _{od}	50Ω to V _{cc} - 2V	
Current Consumption	I _{cc}	10~25MHz : 65mA max ; 25~100MHz : 85mA 100~800MHz : 115mA	Max ; measured with PECL thevenin equivalent load
Rise and fall time	T _r , T _f	1.5ns max.	20% to 80% of wave form.
Duty cycle	SYM	45%/55%	Measured at V _{cc} - 1.3V
Start-up time	T _{str}	5.0m sec (typ.), 10.0m sec. (Max.)	Reach 90% amplitude at $+25^{\circ}\text{C} \pm 2^{\circ}\text{C}$
Phase jitter (RMS) (12kHz to 20MHz)		2.6ps (typical) , 4.0ps (max)	For frequency 155.520MHz
Tristate		Yes, Pin 2	
VC-TCXO Option Only			
Control voltage	V _c	1.5V $\pm$ 1.0V	
Frequency tuning (ppm)		± 5.0 ppm min.	
Linearity/Slope polarity		6.0% typical; 10% max/Positive slope	Positive voltage for positive frequency shift

Table 1 Frequency Stability vs Temperature						
Temp. ($^{\circ}\text{C}$)	Stability in ppm					
	± 1.0	± 2.0	± 2.5	± 3.0	± 4.0	± 5.0
0°C to 50°C	✓	✓	✓	✓	✓	✓
-10°C to 60°C	Enq.	✓	✓	✓	✓	✓
-20°C to 70°C	X	✓	✓	✓	✓	✓
-30°C to 75°C	X	✓	✓	✓	✓	✓
-30°C to 85°C	X	✓	✓	✓	✓	✓
-40°C to 85°C	X	X	X	Enq.	Enq.	✓



Phase noise at 25°C (dBc/Hz)	155.52MHz	622.08MHz
10Hz	-65	-55
100Hz	-95	-85
1kHz	-120	-109
10kHz	-125	-115
100kHz	-121	-110

Pad 1: Control voltage for VCTCXO
No connection for TCXO

Pad 2: Tristate

Pad 3: GND

Pad 4: LVPECL output

Pad 5: Complimentary output

Pad 6: Supply voltage

Pad 2 (Tristate)	Pad 4/Pad 5 (Output)
No connection	Active
Enable ($>V_{cc} \times 0.45$)	Active
Disable ($<V_{cc} \times 0.45$)	High impedance

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TCXO part number generation											
TPL75	2600	M	B	X	N	M	X	X	H	L	-PF
ACT series Code	Frequency (MHz) Eg. 26.00MHz	Temp. stability (±ppm)	Supply voltage (V)	Operating temp. range (°C)	Frequency tuning (±ppm)	Output waveform	Mechanical tuning (±ppm)	Polarity	Duty cycle (%/%)	Tape & Reel	RoHS
TPL75	< 100MHz First 4 digit of frequency > 100MHz First 5 digit of frequency	1.0 = P 2.0 = N 2.5 = M 3.0 = L 4.0 = J 5.0 = F	3.3V = B	0 ~ +50 = D -10 ~ +60 = F -20 ~ +70 = B -30 ~ +75 = W -30 ~ +85 = X -40 ~ +85 = K	None = N	LVPECL = M	None = X	None = X	45/55 = H	Loose = L 1000 = C 2000 = E	-PF

Note: 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 : [TPL752600MBXNMXXHL-PF \[26MHz\]](#), [TPL751474MBXNMXXHL-PF \[14.7456MHz\]](#)

VC-TCXO part number generation													
VTP75	1474	M	B	X	E	M	X	D	P	E	H	L	-PF
ACT series Code	Frequency (MHz) Eg. 14.7456MHz	Temp. stability (±ppm)	Supply voltage (V)	Operating temp. range (°C)	Frequency tuning (±ppm)	Output waveForm	Mechanical tuning (±ppm)	Electrical tuning (±ppm)	Polarity	Linearity	Duty cycle	Tape & Reel	RoHS code
VTP75	< 100MHz First 4 digit of frequency > 100MHz First 5 digit of frequency	1.0 = P 2.0 = N 2.5 = M 3.0 = L 4.0 = J 5.0 = F	3.3V = B	0 ~ 50 = D -10 ~ +60 = F -20 ~ +70 = B -30 ~ +75 = W -30 ~ +85 = X -40 ~ +85 = K	Voltage Control Only = E	LVPECL = M	None = X	±5.0 = D	Positive = P	±10% = E	45/55 = H	Loose = L 1000 = C 2000 = D	-PF

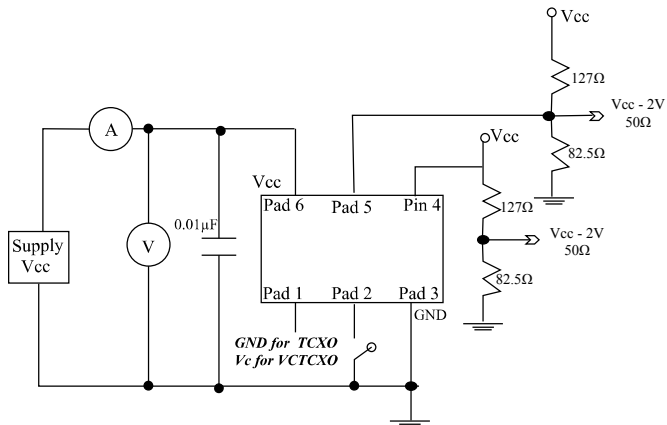
Note: It is important to suffix the above part number with full frequency required to give a completed part number as illustrated below.
Full Example Part Number : [VTP751474MBXEMXDPEHL-PF \(14.7456MHz\)](#)

(V)TPL75 Series

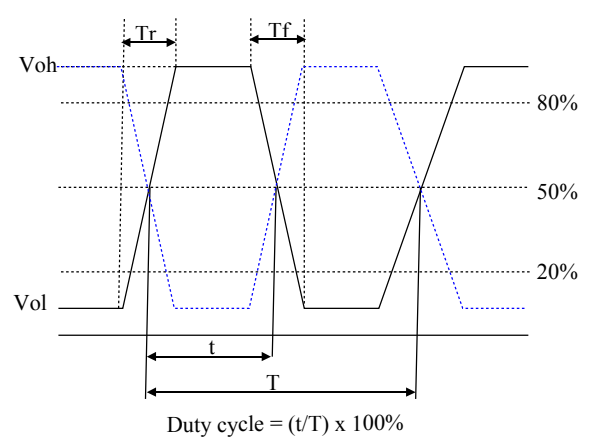
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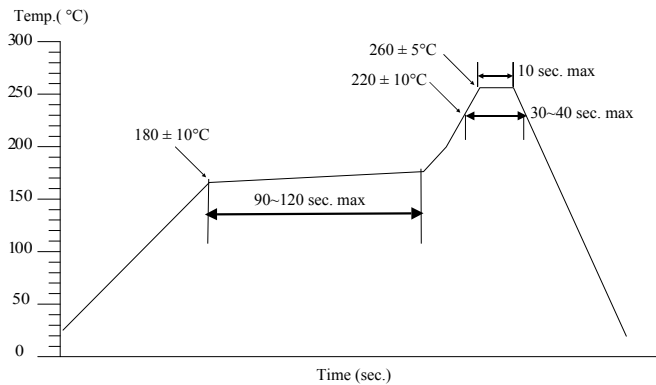
Test circuit



Test waveform



Solder reflow profile



Drawing control: (Internal use only)
Commodity code: 854370 90 99
Issue number : 1
Date : 25042016
Internal reference : M6

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