

TV/TX 57 SERIES TCXO: 5x7 mm Stratum 3 TCXO

■ FEATURES

- ± 0.28 ppm Holdover Stability
- ± 4.6 ppm accuracy over all conditions including 20 years aging
- Miniature 5x7 mm SMD Package
- Low Current Consumption

■ APPLICATIONS

- Mobile Phones
- Base Stations
- Mobile Radios
- GPS Devices
- Broadband
- Equipment



■ ELECTRICAL SPECIFICATION

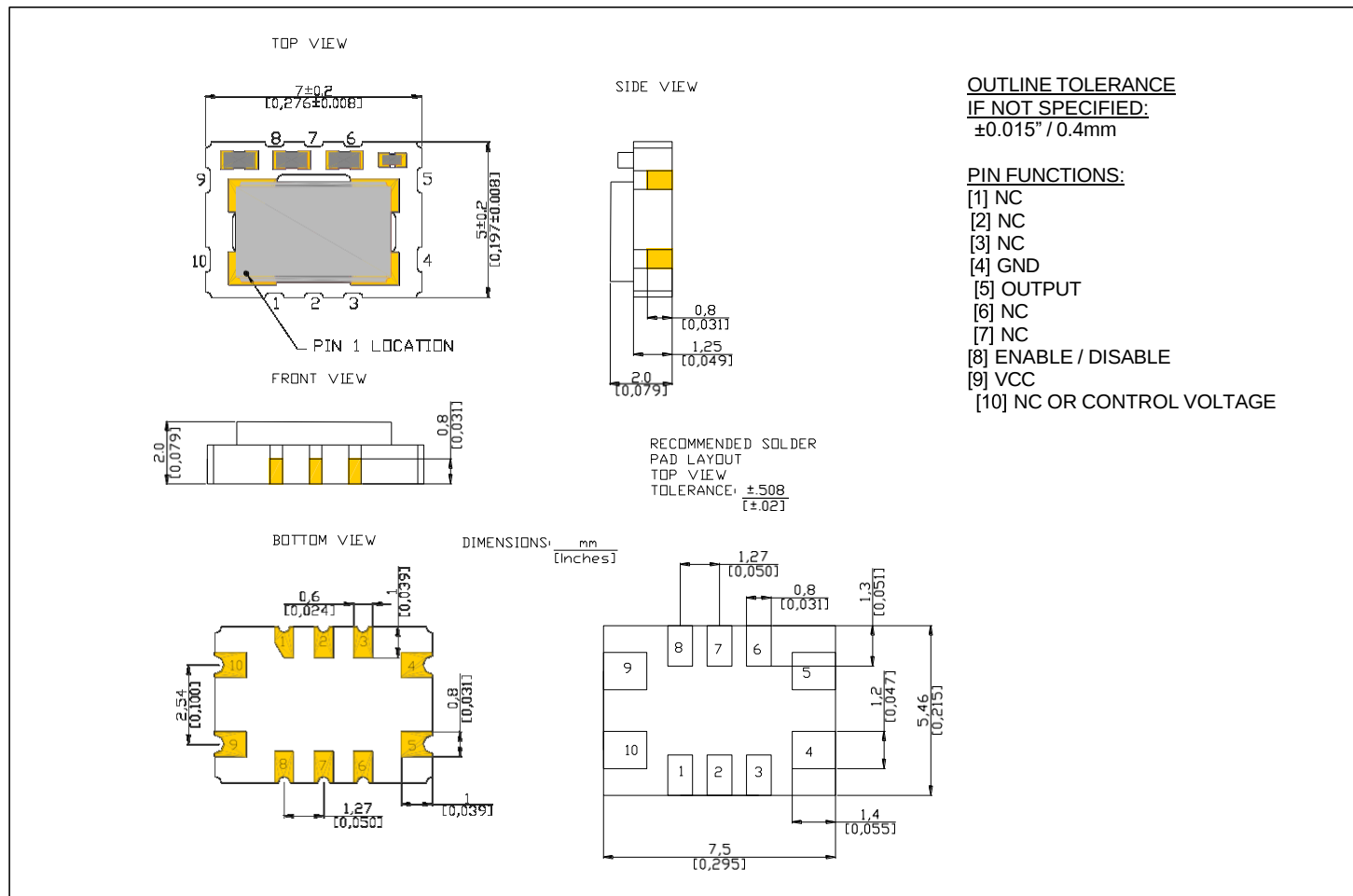
PARAMETER	SYMBOL	CONDITIONS	VALUE	UNIT
Frequency Range	f_o		10 ~ 52	MHz
Supply Voltage	V_{CC}		3.3 or 5.0	V
Supply Current	I_s	Typical (depending on Vcc and output)	4 ~ 10	mA
Clipped Sine Wave – Output Voltage Swing (peak-to-peak)	V_{p-p}	Load = 10K Ω // 10pF	0.6 ~ 1.0	V
HCMOS – Output Levels	V_{OH} / V_{OL}	Min/Max, 15pF Load	0.9 Vcc / 0.1 Vcc	V
Duty Cycle	DC	HCMOS - Load = 15pF (2 TTL)	40/60 or 45/55	%
Rise Time / Fall Time	t_r / t_f	10% ~ 90%	5	ns
Start Up Time	t_s	Typical	3	ms
Enable / Disable	E/D	Min / Max	0.8 (Vcc) / 0.2 Vcc	Vdc
Control Voltage ¹	V_c	Optional	0 ~ Vcc	Vdc
Pull Range ¹	f_r		$\pm 5 \sim \pm 12$	ppm
Linearity, max	L	Positive tuning slope	10	%
Initial Frequency Calibration	f_c	Measures at 25°C	± 1.0	ppm
Stability vs. Supply Voltage Change	f_v	Vcc $\pm 5\%$	± 0.20	ppm
Stability vs. Load Change	f_L	Load $\pm 10\%$	± 0.20	ppm
Stability over Operating Temperature	$\Delta f / f_o(T)$	Referenced at 25°C	± 0.28	ppm
Overall Frequency Stability, max	$\Delta f / f_c$	Including 20 years of aging	± 4.60	ppm
Phase Noise @ Freq. Offset, typ	$E(\Delta f)$	$\Delta f = 100\text{Hz}$	-110	dBc/Hz
	$E(\Delta f)$	$\Delta f = 1\text{kHz}$	-135	dBc/Hz
	$E(\Delta f)$	$\Delta f = 10\text{kHz}$	-145	dBc/Hz
Integrated Phase Jitter RMS, max	J	BW= 12kHz to 20MHz, Vcc $\pm 5\%$, 15pF load	0.8	ps
Operating Temperature Range	T_a		-20 ~ +70 -40 ~ +85	°C
Storage Temperature Range	$T(\text{stg})$	Absolute max	-55°C ~ +125°C	°C

NOTE

¹ Available with TV series only

TV/TX 57 SERIES TCXO: 5x7 mm Stratum 3 TCXO

MECHANICAL SPECIFICATION (10 pin ceramic package)



PART NUMBERING SYSTEM

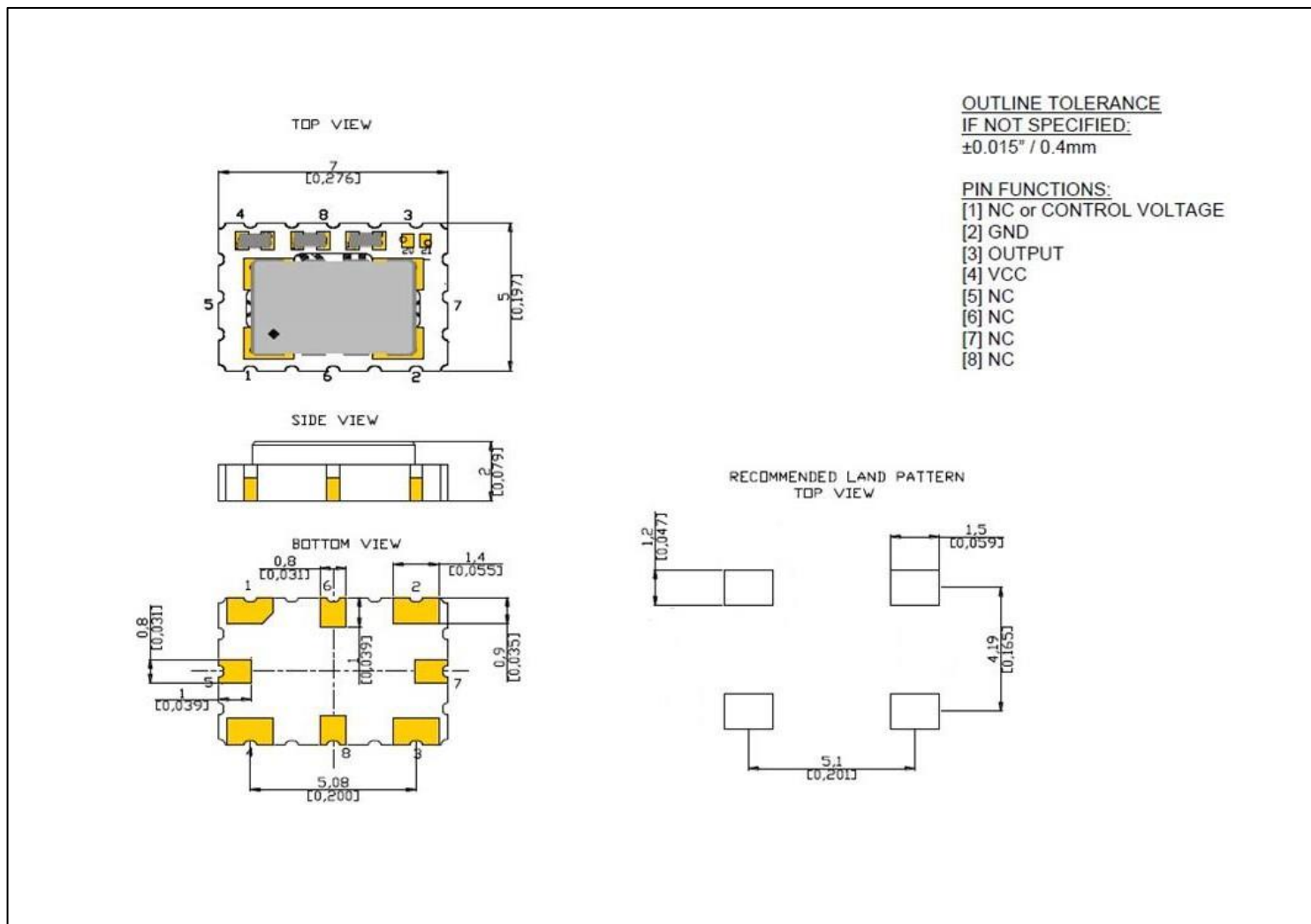
TYPE	OUTPUT TYPE	SERIES	REV	-	OPERATING TEMP RANGE (°C)	-	STABILITY (PPM)	-	FREQUENCY (MHz)	-	SUPPLY VOLTAGE (V)	-	Ceramic Package
TX (TCXO) TV (VCTCXO)	0: Clipped Sine 2: HCMOS	57	A	-	LZ: 0~+70 HZ: -20~+70 D3: -40~+85	-	0.28: ±0.28	-	10 ~ 52	-	5: Vcc=5.0 3.3: Vcc=3.3	-	Blank-10 pin 8 - 8 pin 6 - 6 pin 4 - 4 pin

EXAMPLE: TV057A-D3-0.28-12.800-3.3

Surface Mount TCXO, Control voltage option, 5x7 mm with standard 10 pin ceramic base, Stratum 3, from -40°C to +85°C, 3.3 VDC supply voltage, Control Voltage range ±5 ppm to ±12 ppm, Clipped Sine wave output, Tape and Reel packaging.

TV/TX 57 SERIES TCXO: 5x7 mm Stratum 3 TCXO

MECHANICAL SPECIFICATION (8 pin ceramic package)



PART NUMBERING SYSTEM

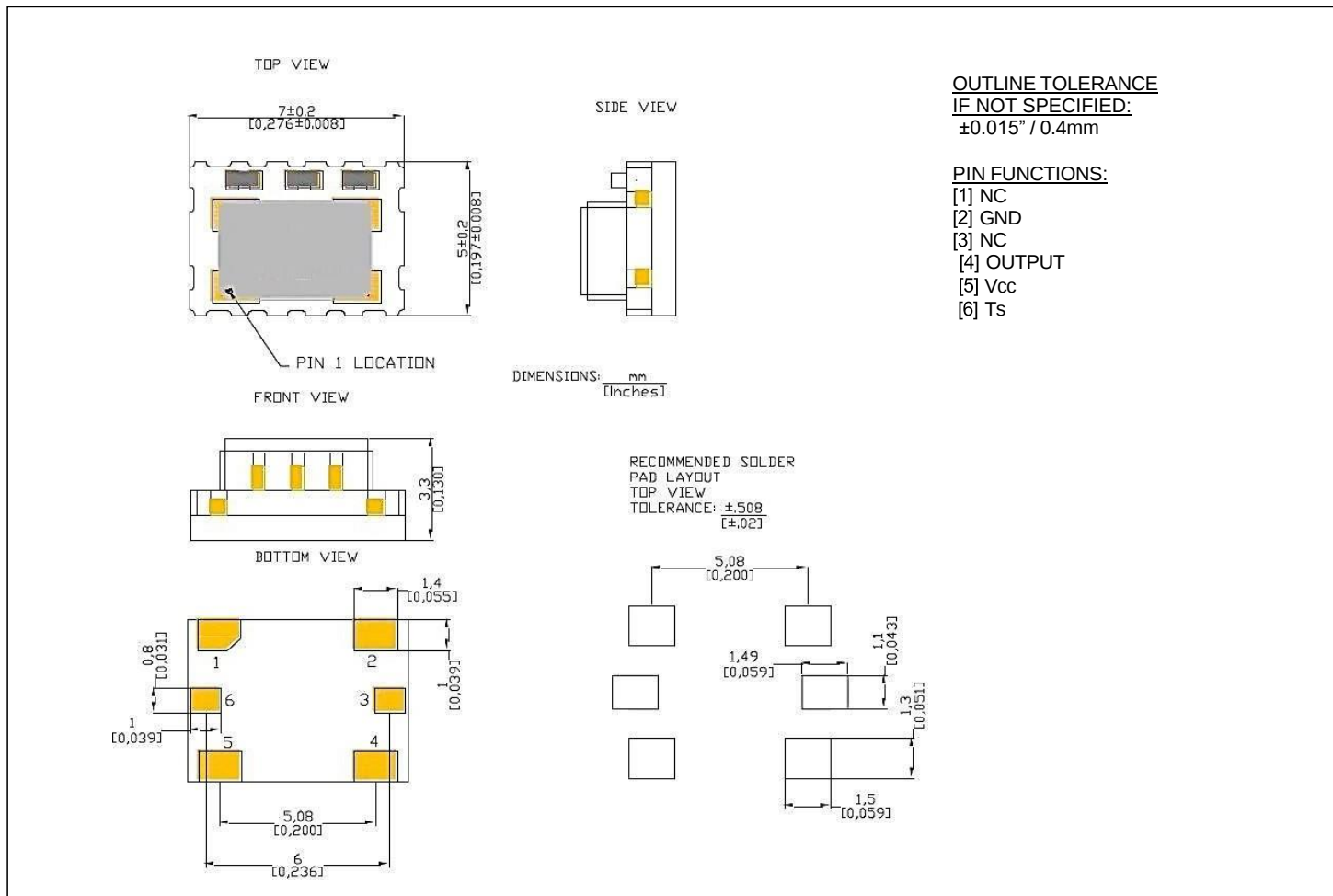
TYPE	OUTPUT TYPE	SERIES	REV	-	OPERATING TEMP RANGE (°C)	-	STABILITY (PPM)	-	FREQUENCY (MHz)	-	SUPPLY VOLTAGE (V)	-	Ceramic Package
TX (TCXO) TV (VCTCXO)	0: Clipped Sine 2: HCMOS	57	A	-	LZ: 0~+70 HZ: -20~+70 D3: -40~+85	-	0.28: ±0.28	-	10 ~ 52	-	5: Vcc=5.0 3.3: Vcc=3.3	-	Blank-10 pin 8 - 8 pin 6 - 6 pin 4 - 4 pin

EXAMPLE: TX057A-LZ-0.28-40.000-5-8

Surface Mount TCXO, 5x7 mm with 8 pin ceramic base option, Stratum 3, from 0°C to +70°C, 5.0 VDC supply voltage, Clipped Sine wave output, Tape and Reel packaging.

TV/TX 57 SERIES TCXO: 5x7 mm Stratum 3 TCXO

MECHANICAL SPECIFICATION (6 pin ceramic package)



PART NUMBERING SYSTEM

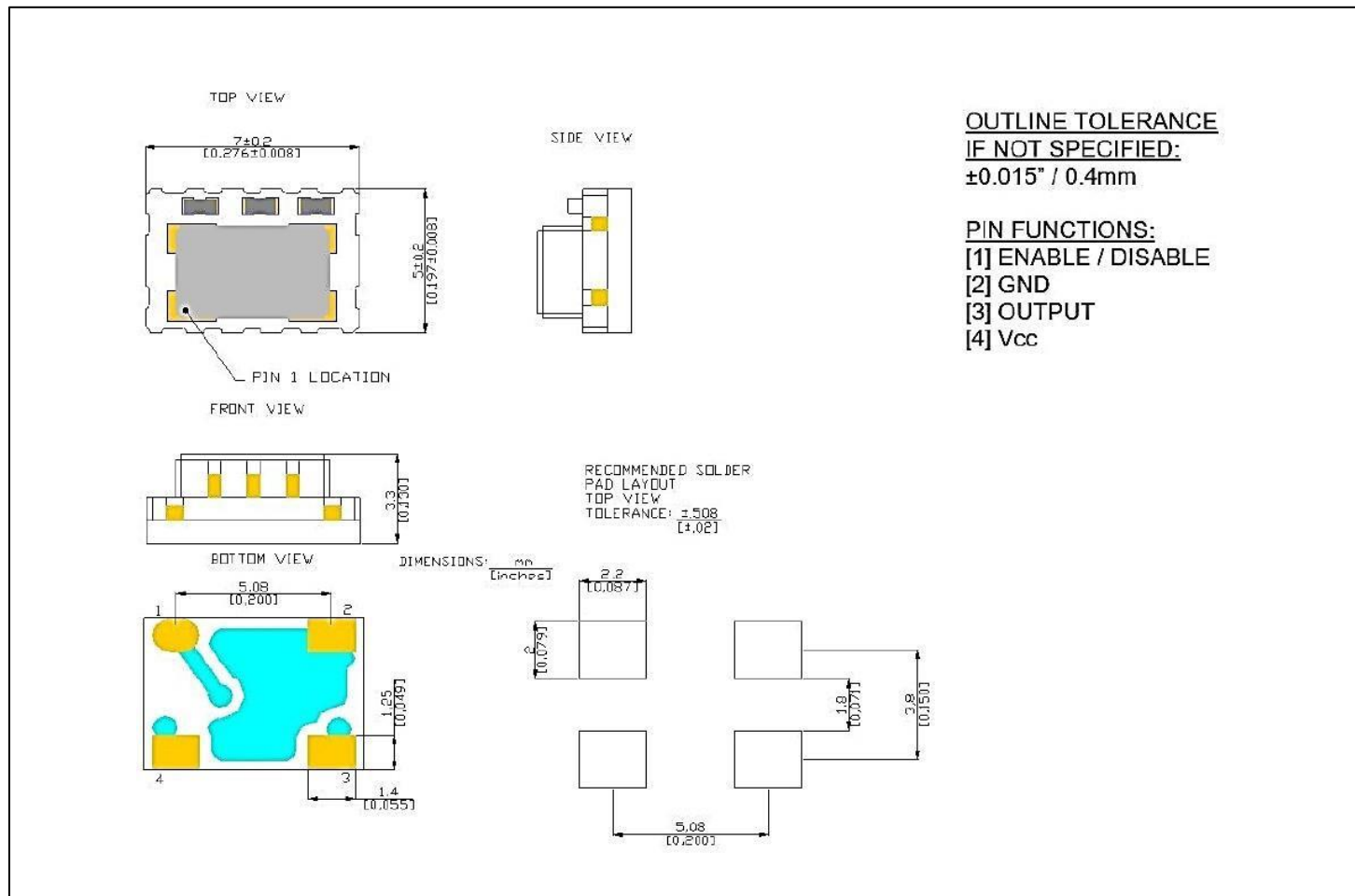
TYPE	OUTPUT TYPE	SERIES	REV	-	OPERATING TEMP RANGE (°C)	-	STABILITY (PPM)	-	FREQUENCY (MHz)	-	SUPPLY VOLTAGE (V)	-	Ceramic Package
TX (TCXO) TV (VCTCXO)	0: Clipped Sine 2: HCMOS	57	A	-	LZ: 0~+70 HZ: -20~+70 D3: -40~+85	-	0.28: ±0.28	-	10 ~ 52	-	5: Vcc=5.0 3.3: Vcc=3.3	-	Blank-10 pin 8 - 8 pin 6 - 6 pin 4 - 4 pin

EXAMPLE: TX057A-LZ-0.28-40.000-3.3-6

Surface Mount TCXO, 5x7 mm with 6 pin ceramic base option, Stratum 3, from 0°C to +70°C, 3.3 VDC supply voltage, Clipped Sine wave output, Tape and Reel packaging.

TV/TX 57 SERIES TCXO: 5x7 mm Stratum 3 TCXO

MECHANICAL SPECIFICATION (4 pin ceramic package)



PART NUMBERING SYSTEM

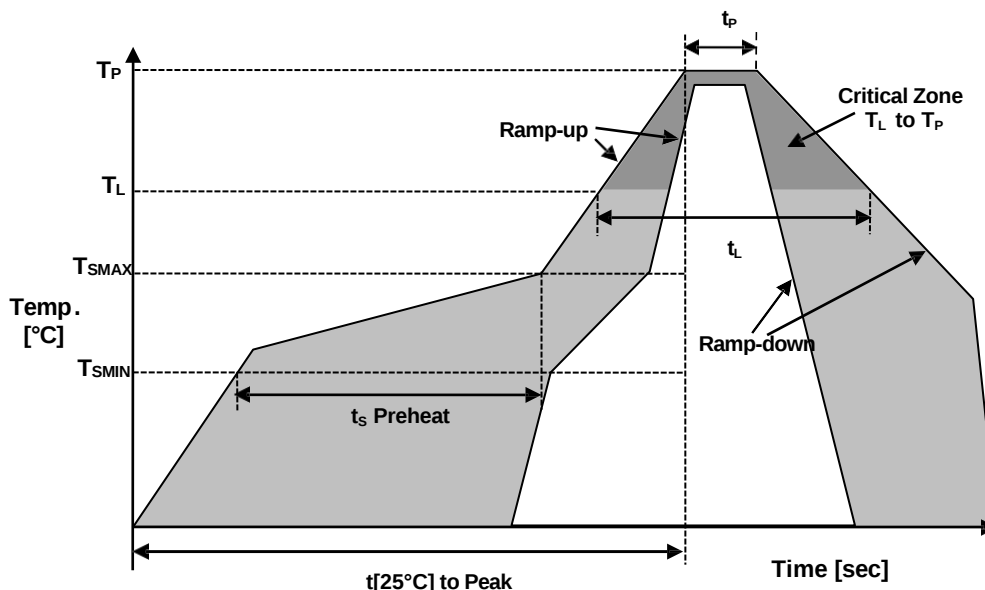
TYPE	OUTPUT TYPE	SERIES	REV	-	OPERATING TEMP RANGE (°C)	-	STABILITY (PPM)	-	FREQUENCY (MHz)	-	SUPPLY VOLTAGE (V)	-	Ceramic Package
TX (TCXO) TV (VCTCXO)	0: Clipped Sine 2: HCMOS	57	A	-	LZ: 0~+70 HZ: -20~+70 D3: -40~+85	-	0.28: ±0.28	-	10 ~ 52	-	5: Vcc=5.0 3.3: Vcc=3.3	-	Blank-10 pin 8 - 8 pin 6 - 6 pin 4 - 4 pin

EXAMPLE: TX057A-LZ-0.28-32.000-5-4

Surface Mount TCXO, 5x7 mm with 4 pin ceramic base option, Stratum 3, from 0°C to +70°C, 5.0 VDC supply voltage, Clipped Sine wave output, Tape and Reel packaging.

TV/TX 57 SERIES TCXO: 5x7 mm Stratum 3 TCXO

REFLOW PROFILE



Reflow profile		
Temperature Min Preheat	T_{SMIN}	150°C
Temperature Max Preheat	T_{SMAX}	200°C
Time (T_{SMIN} to T_{SMAX})	t_s	60-180 sec.
Temperature	T_L	217°C
Peak Temperature	T_P	260°C
Ramp-up rate	R_{UP}	3°C/sec max.
Ramp-down rate	R_{DOWN}	6°C/sec max.
Time within 5°C of Peak Temperature	t_p	10 sec.
Time $t_{[25^\circ\text{C}]}$ to Peak Temperature	$t_{[25^\circ\text{C}]}$ to Peak	480 sec.
Time	t_L	60-150 sec.

ENVIRONMENTAL

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
REACH SVHC	COMPLIANT
RoHS	COMPLIANT
TERMINATION FINISH	Au



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