

TV/TX 057 SERIES TCXO: 5X7mm Stratum 3 TCXO with frequency Range of 10 MHz to 52 MHz
■ FEATURES

- ± 0.28 ppm Holdover Stability
- ± 4.6 ppm accuracy over all conditions including 20 yrs aging.
- Miniature 5x7mm 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, nom.	V_{CC}		5.0 or 3.3	V
Supply current	I_s	Typical (depending on V_{CC} , and output)	4 ~ 20	mA
Clipped sine wave Output Voltage swing (peak - peak)	V_{p-p}	Load = 10K Ω // 10pF	0.6 ~ 1.0	V
HCMOS Output Levels	V_{OH} / V_{OL}	min/max , 15pF load	0.9V $_{CC}$ / 0.1V $_{CC}$	V
Duty cycle	DC	Load = 15pF(HCMOS) / 2 TTL	40/60 or 45/55	%
Rise / fall time, max.	t_r / t_f	10% - 90%	5	ns
Start up time	t_s	Typical	3	ms
Enable / Disable ¹	E/D	Min / Max	0.8 (V $_{CC}$) / 0.2(V $_{CC}$)	Vdc
Control Voltage ²	V_C	Optional	0 ~ V $_{CC}$	Vdc
Pull Range ²	f_T		$\pm 5 \sim \pm 12$	ppm
Linearity, max	L	Positive tuning slope	10	%
Initial Frequency Calibration	f_C	Measures at 25°C	± 1.00	ppm
Stability vs. Supply Voltage change	f_V	V $_{CC} \pm 5\%$	± 0.20	ppm
Stability vs. Load change	f_L	V $_{CC} \pm 10\%$	± 0.20	ppm
Stability over operating temperature ³	$\Delta f/f_C(T)$	Referenced at 25°C	± 0.28	ppm
Overall freq. stability, max.	$\Delta f/f_C$	Including 20 years of aging	± 4.60	ppm
Operating temperature ⁴	Ta		-20 ~ +70 -40 ~ +85	°C
Storage temperature	T(stg)	Absolute max	-55°C ~ +125°C	°C
Phase noise @ freq. offset, typical.	$\mathcal{L}(\Delta f)$	$\Delta f=100\text{Hz}$	-110	dBc/Hz
	$\mathcal{L}(\Delta f)$	$\Delta f=1\text{kHz}$	-135	dBc/Hz
	$\mathcal{L}(\Delta f)$	$\Delta f=10\text{kHz}$	-145	dBc/Hz

Notes

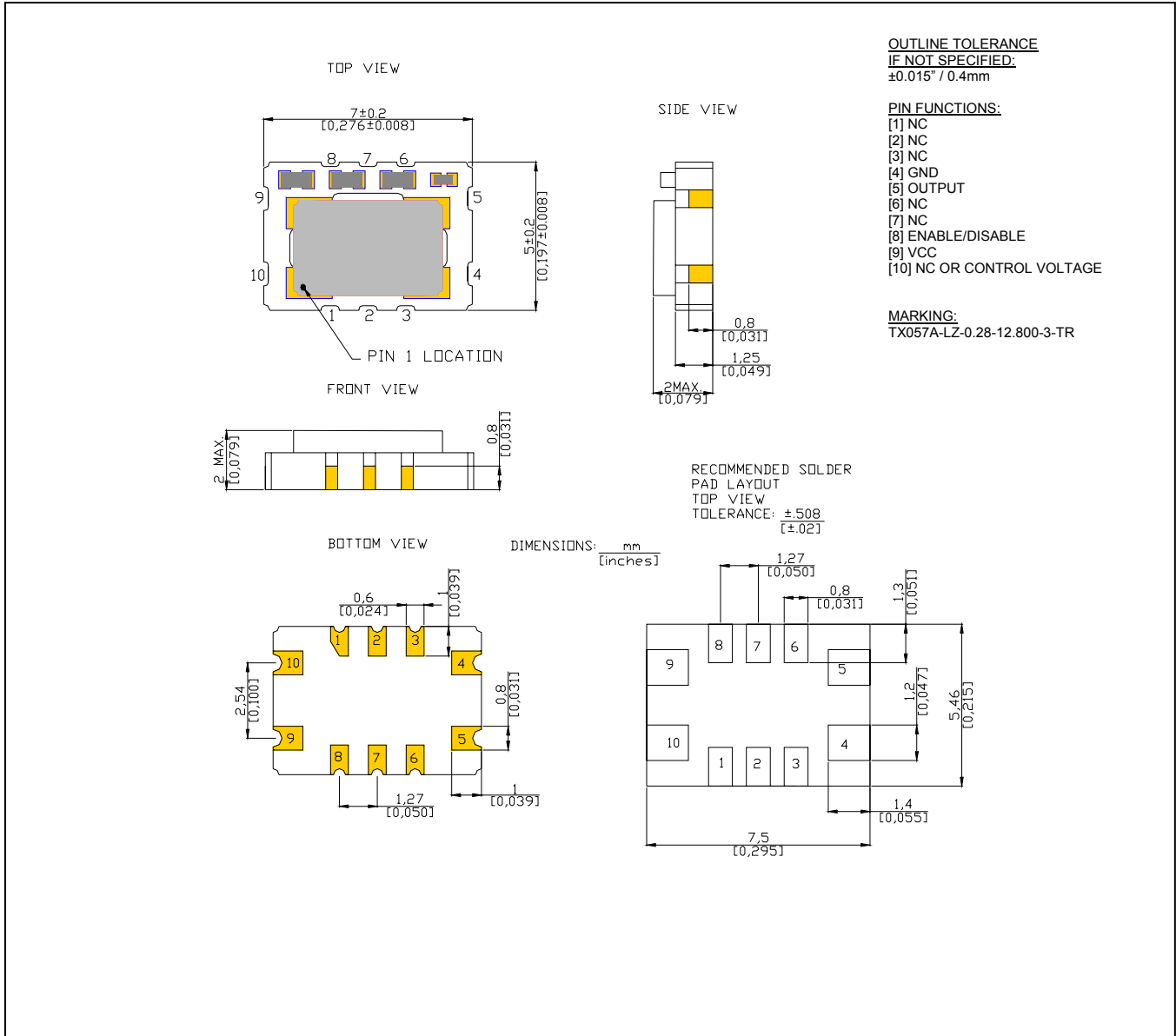
¹ Not available with TV series.

² Available with TV series only

³ Not available at all frequencies. Contact factory

⁴ Check part numbering table below. For others contact factory

■ **MECHANICAL SPECIFICATION**



■ **PART NUMBERING SYSTEM:**

TYPE	OUTPUT TYPE	SERIES	REV		OPERATING TEMP RANGE [°C]		STABILITY [PPM]		FREQUENCY (MHZ)		SUPPLY VOLTAGE [V]		TAPE & REEL
Surface Mount TCXO	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: Vcc =3.3		TR
TX⁵TV	2	57	A	-	HZ	-	0.28	-	12.8	-	3	-	TR

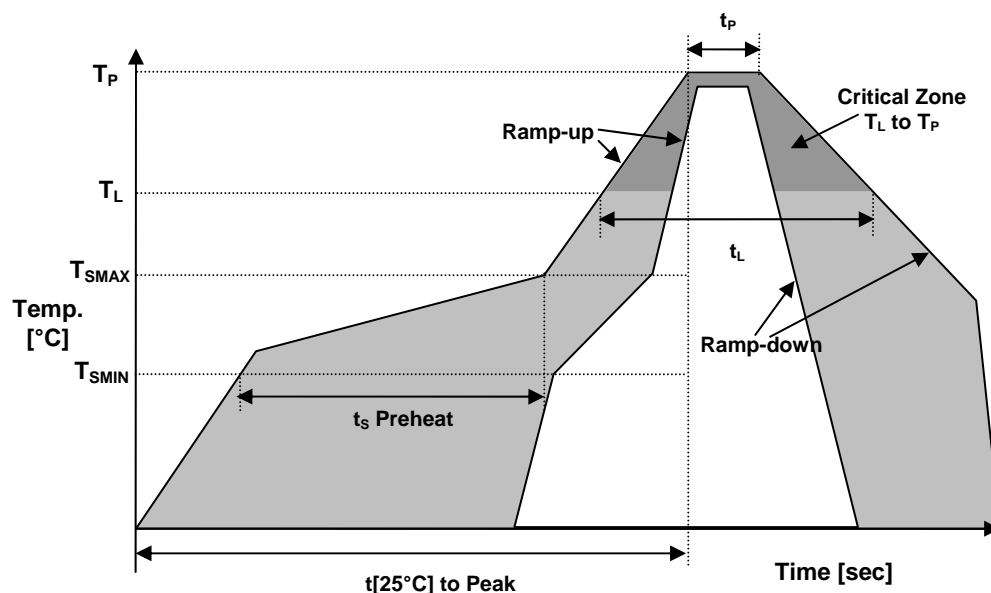
Notes

⁵ Available with Control Voltage option.

EXAMPLE: TV057A-D3-0.28-12.800-3-TR

Surface Mount TCXO, Control voltage option, 5x7mm, Stratum 3, from -40°C to +85°C, 3.3VDC supply, Control Voltage range ±5 ppm to ±12 ppm, Clipped Sine wave output. Tape and reel packaging.

■ **REFLOW PROFILE:**



Reflow profile IPC/JEDEC J-STD-020 REV. C		
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	20-40 sec.
Time t[25°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t _L	60-150 sec.