TV/TX 035 SERIES TCXO: 5x3.2 mm Stratum 3 TCXO with frequency Range 10.0 MHz to 52.0 MHz

FEATURES

- **±0.2 ppm Stability over Temperature**
- **±0.5 ppm Stability vs. Aging**
- **Ultra compact 5x3.2 mm SMD Low Current consumption**

APPLICATIONS

- **Mobile Phones**
- **Base Stations**
- **Mobile Radios**
- **GPS Devices**
- **Broadband Equipment**
- **Utility Metering**

RoHS Compliant

ELECTRICAL SPECIFICATION

PARAMETER	SYMBOL	CONDITIONS	VALUE	UNIT
Frequency range	fo		10 ~ 52	MHz
Supply voltage	V_{CC}		2.7 to 5.0	V
Supply current	I_S	Typical (depending on Vcc and output)	2 ~ 10	mA
Clipped sine wave – Output Voltage Swing (peak-to-peak)	Vp-p	Load = 10KΩ // 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	ts	Typical	3	ms
Enable / Disable	E/D	Min / Max	0.8 (Vcc) / 0.2 Vcc)	Vdc
Control Voltage[1]	Vc	Optional	0.5 ~ 2.5	Vdc
Pull Range[1]	f_T	Vc=1.5 ±1.0 V	±3 ~ ±10	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 ±5%	±0.05	ppm
Stability vs. Load change	f_L	Load ±10%	±0.05	ppm
Stability over operating temperature[2]	Δf/fo(T)	Referenced at 25°C	±0.2	ppm
Overall frequency stability, max	Δf/fc	Including 20 years of aging	±4.6	ppm
Stability vs. Aging, max	f_{age}	1 year @ 25°C	±0.5	ppm
Phase noise @ freq. offset, typical. 10 MHz	£ (Δf) £ (Δf) £ (Δf)	Δf=100Hz Δf=1kHz Δf=10kHz	-110 -135 -145	dBc/Hz dBc/Hz dBc/Hz
Integrated Phase Jitter RMS, max	J	BW= 12kHz to 20MHz, Vcc±5%, 15pF load	1.0	psec
Operating temperature[3]	Ta		-20 ~ +70 -40 ~ +85	°C
Storage temperature	T(stg)	Absolute max	-55°C~ +125°C	°C

NOTES
[1] Available with TV series only
[2] Not available at all frequencies, Contact Factory
[3] Check part numbering table below. For others contact factory.

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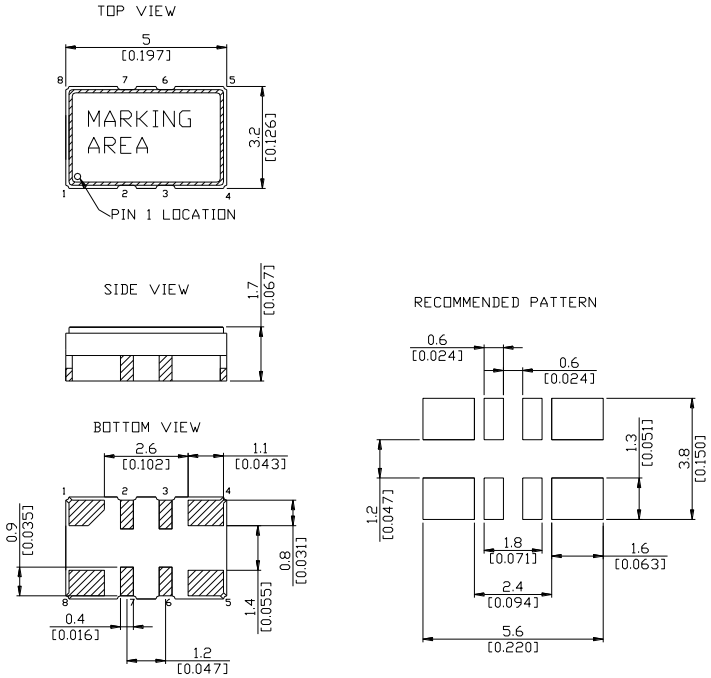
MECHANICAL SPECIFICATION

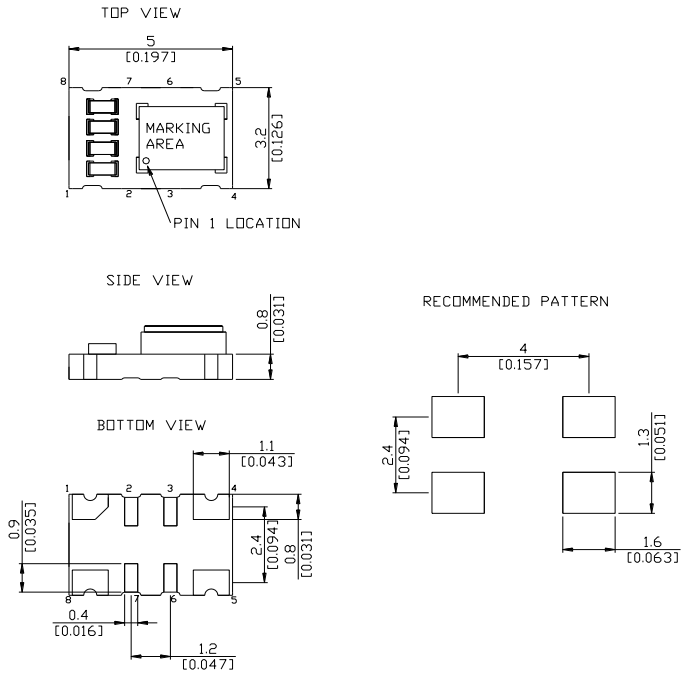
OPTION A.



OUTLINE TOLERANCE
IF NOT SPECIFIED:
±0.015" / 0.4mm

PIN FUNCTIONS OPTION A:
[1] NC or Control Voltage
[2] NC
[3] NC
[4] GND
[5] OUTPUT [4]
[6] ENABLE/DISABLE
[7] NC
[8] VCC

OPTION B.



PIN FUNCTIONS OPTION B:
[1] VC
[2] NC
[3] NC
[4] GND
[5] OUTPUT [4]
[6] NC
[7] NC
[8] VCC

NOTE [4] Add DC block capacitor at oscillator output (1000pF)

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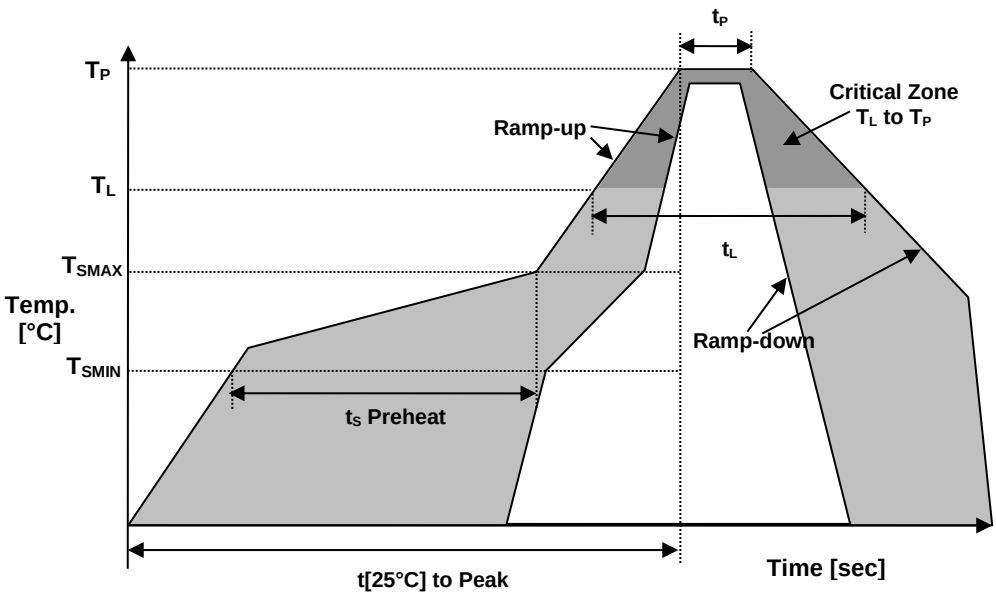
PART NUMBERING SYSTEM

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	**35**	**A**	-	**LZ:** 0~70 **HZ:** -20~+70 **D3:** -40~+85	-	**0.28:** ±0.028 **0.2**: ±0.020	-	10 ~ 52	-	**5:** Vcc=5.0 **3:** Vcc=3.3 **2**: Vcc=2.7	-	TR
TX **TV**[5]	**2**	**35**	**A**	-	**HZ**	-	**0.28**	-	**12.8**	-	**3**	-	**TR**

Notes
[5] Available with Control Voltage option.

EXAMPLE: TV035A-D3-0.2-12.800-3-TR
Surface Mount TCXO, Control voltage option, 5x3.2 mm, Stratum 3, from -40°C to +85°C, 3.3 VDC supply voltage, Control Voltage range ±5 ppm to ±10 ppm, Clipped Sine wave output, Tape and reel packaging.

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°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t_L	60-150 sec.

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ENVIRONMENTAL

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
REACH SVHC	COMPLIANT
RoHS	6/6 LEAD FREE
TERMINATION FINISH	Au

October 2013