



# 3.2x2.5mm HCMOS TCXO

## T3HD (former FOX351 Series) DATASHEET

- Analog Temperature Compensation
- Enable/Disable - Standby

### ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range (MHz)	4.0 ~ 54.000
Temperature Range	
Operating ( $T_{OPR}$ )	See table below
Storage ( $T_{STG}$ )	-40°C ~ +125°C
Supply Voltage ( $V_{DD}$ ) ( $\pm 5\%$ )	2.5V; 2.8V; 3.3V
Input Current ( $I_{DD}$ )	See table below
Initial Frequency Tolerance @ 25°C (1hr after reflow)	$\pm 2.0$ PPM
Frequency Stability	
Over Temperature Range	See table below
Over Supply Voltage Change ( $V_{DD} \pm 5\%$ )	$\pm 0.3$ PPM
Over Load Change 15pF $\pm 10\%$	$\pm 0.3$ PPM
Output Voltage Level ( $V_{OH}$ ) ( $V_{OL}$ )	0.9V <sub>DD</sub> min 0.1V <sub>DD</sub>
Output Load	15pF $\pm 10\%$
Aging per year	$\pm 1.0$ PPM
Startup Time ( $T_S$ )	10mS
Enable Time	10mS
Disable Time	250nS
Phase Noise @ 10kHz offset	-145 dBc/Hz Typical
Reflow Soldering Temp	260°C / 10 Seconds x 2
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au over Ni
Lead-Free	Yes
RoHS/REACH Compliant	Yes

Operating Temperature	$\pm 2.5$ PPM
-30 ~ +75°C	0
-30 ~ +85°C	0
-40 ~ +85°C	0

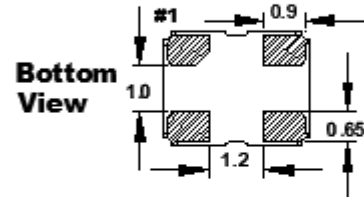
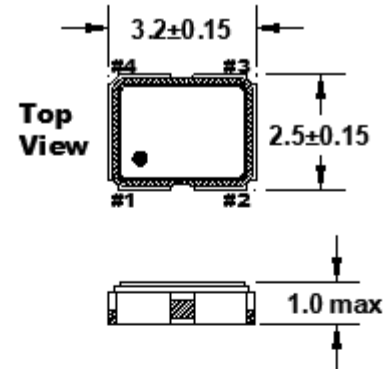
### ENABLE / DISABLE FUNCTION

Pin1	Output (pin 3)
OPEN <sup>1</sup>	Active
'1' Level $V_{IH} \geq 70\%V_{DD}$	Active
'0' Level $V_{IL} \leq 30\%V_{DD}$	High Z

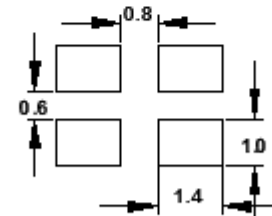
### INPUT CURRENT ( $I_{DD}$ ) (mA Max)

	4 ~ 10MHz	10+ ~ 20MHz	20+ ~ 30MHz	30+ ~ 40MHz	40+ ~ 54MHz
2.5V	3.1	3.7	4.2	4.6	5.5
2.8V	3.4	4.1	4.7	5.2	6.0
3.3V	4.0	4.8	5.5	6.0	7.0

\*Dimensional drawing is for reference to critical specifications defined by size measurements.  
Certain non-critical visual attributes, such as side castellations, reference pin shape, etc. may vary  
All specifications subject to change without notice.



### Recommended Solder Pad Layout



Dimensions are in millimeters

### Pin Connections

#1 E/D    #3 Output  
#2 GND    #4 V<sub>DD</sub>

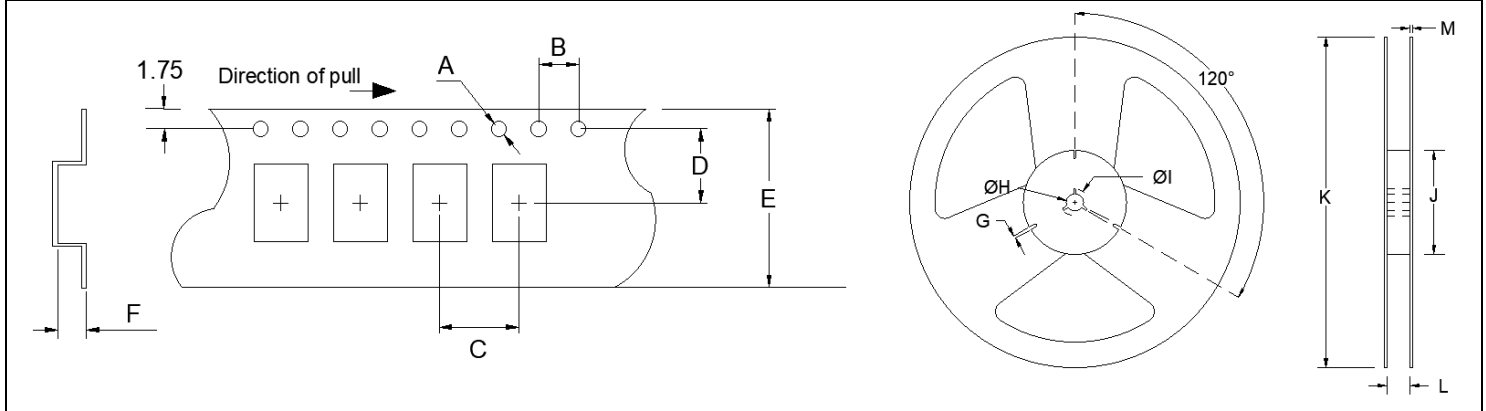




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Tape Specifications (millimeters)							Reel Specifications (millimeters)						
A	B	C	D	E	F	Reel Qty	G	H	I	J	K	L	M
Ø1.5	4.0	4.0	3.5	8.0	1.4	-T3 = 3,000 -T1 = 1,000	2.0	Ø13	Ø21	Ø60	Ø180	9.0	2.0



### Available Options & Part Identification for TCXO Model T3HD<sup>1</sup> F T3HD B P H 25.0

F	T3HD	B	P	H	25.0
<b>FOX</b>	<b>Model Number</b> T3HD = TCXO	<b>Voltage</b> B = +3.3V±5% Q = +2.8V±5% H = +2.5V±5%	<b>Stability</b> P = ±2.5 PPM	<b>Operating Temperature</b> H = -30 to +75°C K = -30 to +85°C M = -40 to +85°C	<b>Frequency (MHz)</b>

<sup>1</sup> Not all frequencies in the frequency range available.



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	Title / Description: <b>T3HD SERIES STANDARD SPECIFICATIONS</b>	
	Drawing Number: T3HD-DOC-1	Size: A
	Part Number:	Cage: 61429
	Draftsperson: BEC	Approved: MAJ
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