

GXO-E51L

3.3V LV-PECL Oscillator for High **Speed Data Transfer**

- Complementary LV-PECL output
- RMS phase jitter 0.3ps
- Multiplier-free design
- Designed for high speed data transfer
- Enable / disable tristate function



CONFIGURABLE OPTIONS	
Parameter	Option Code
Frequency	
Frequency stability	
* see note below	
Any	
±100ppm	
±50ppm	В
±25ppm (<160MHz)	А
Operating temperature range	
Any	
-10 to +70°C	
-40 to +85°C	I

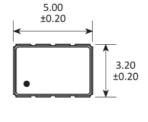
^{*} Frequency stability is inclusive of calibration @ 25°C, operating temperature range, supply voltage change and load change.



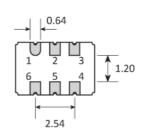
SPECIFICATIONS

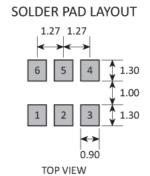
Frequency range $50.0 \sim 60.0 \text{MHz} \text{ (fundamental)} $ $60.0 \sim 160 \text{MHz} \text{ (3rd OT)} $ $160.0 \sim 250 \text{MHz} \text{ (inverted mesa)} $ Dimensions $5.0 \times 3.2 \times 1.4 \text{mm}$ Storage $-40 \text{ to} +85^{\circ}\text{C}$ temperature range V_{DD} Supply voltage V_{DD} Supply current V_{DD} Supply current V_{DD} Complementary V_{DD} Test load $V_{TT} = V_{DD}$ $V_{TT} = V_{DD}$ $V_{TT} = V_{DD}$ Logic levels V_{DD} V_{DD} Waveform V_{DD} V_{DD} Supply current V_{DD} V_{DD} The symmetry V_{DD} Enable / disable V_{DD} Tristate (control via pad 1) Function V_{DD} The symmax V_{DD} Tristate (control via pad 1)		
$160.0 \sim 250 \text{MHz (inverted mesa)}$ $Dimensions \qquad 5.0 \times 3.2 \times 1.4 \text{mm}$ $5 \text{torage} \qquad -40 \text{ to } +85 ^{\circ}\text{C}$ $temperature range$ $Supply voltage \qquad +3.3 \text{V } (\pm 5\%)$ (V_{DD}) $Supply current \qquad 88 \text{mA max } (50.0 \sim 250 \text{MHz})$ $Output \qquad \text{Complementary LV-PECL}$ $Test load \qquad R_T = 50 \Omega \qquad \qquad V_{TT} = V_{DD} - 2.0 \text{V}$ $Logic levels \qquad '0' level = 1.7 \text{V max} \qquad '1' level = 2.2 \text{V min}$ $Waveform \qquad 40:60 \text{ max } \textcircled{0} 50\% \text{V}_{P-P}$ $symmetry$ $Rise / fall time (20 \qquad 1.0 \text{ns max}$ $\sim 80\% \text{V}_{P-P})$ $Enable / \text{disable} \qquad \text{Tristate (control via pad 1)}$ $function$	Frequency range	50.0 ~ 60.0MHz (fundamental)
$\begin{array}{llllllllllllllllllllllllllllllllllll$		60.0 ~ 160MHz (3rd OT)
Storage $-40 \text{ to } +85 ^{\circ}\text{C}$ temperature range Supply voltage (V_{DD}) $+3.3 \text{V } (\pm 5\%)$ (V_{DD}) Supply current $88\text{mA max } (50.0 \sim 250\text{MHz})$ Output Complementary LV-PECL Test load $R_T = 50\Omega$ $V_{TT} = V_{DD} - 2.0 \text{V}$ Logic levels '0' level = 1.7V max '1' level = 2.2V min Waveform $40.60 \text{ max } \text{@ } 50\%\text{V}_{P-P}$ symmetry Rise / fall time (20 $\times 80\%\text{V}_{P-P}$) 1.0ns max $\times 80\%\text{V}_{P-P}$) Enable / disable function Tristate (control via pad 1)		160.0 ~ 250MHz (inverted mesa)
temperature range $ \begin{array}{lll} & & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ $	Dimensions	5.0 x 3.2 x 1.4mm
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	Storage	-40 to +85°C
$(V_{DD}) \label{eq:control} Supply current 88mA max (50.0~250MHz) \label{eq:control} Output Complementary LV-PECL \label{eq:control} Test load R_T = 50\Omega V_{TT} = V_{DD} - 2.0V $	temperature range	
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Supply voltage	+3.3V (±5%)
$\begin{array}{lll} \text{Output} & \text{Complementary LV-PECL} \\ \text{Test load} & R_T = 50\Omega \\ & V_{TT} = V_{DD}2.0V \\ \text{Logic levels} & \text{'0' level} = 1.7V \text{ max} \\ & \text{'1' level} = 2.2V \text{ min} \\ \text{Waveform} & 40:60 \text{ max} \textcircled{0} 50\% V_{P-P} \\ \text{symmetry} \\ \text{Rise / fall time (20} & 1.0 \text{ns max} \\ & \sim 80\% V_{P-P}) \\ \text{Enable / disable} & \text{Tristate (control via pad 1)} \\ \text{function} \end{array}$	(V _{DD})	
$\begin{array}{lll} \text{Test load} & R_T = 50\Omega \\ & V_{TT} = V_{DD} - 2.0V \end{array}$ $\begin{array}{lll} \text{Logic levels} & \text{'0' level} = 1.7V \text{ max} \\ & \text{'1' level} = 2.2V \text{ min} \end{array}$ $\begin{array}{lll} \text{Waveform} & \text{40:60 max @ 50\%V}_{P-P} \\ \text{symmetry} \end{array}$ $\begin{array}{lll} \text{Rise / fall time (20} & \text{1.0ns max} \\ & \sim 80\%V_{P-P} \end{array}$ $\begin{array}{lll} \text{Enable / disable} & \text{Tristate (control via pad 1)} \\ \text{function} \end{array}$	Supply current	88mA max (50.0~250MHz)
$V_{TT} = V_{DD} - 2.0V$ $Logic levels \qquad '0' level = 1.7V max$ $'1' level = 2.2V min$ $Waveform \qquad 40:60 max @ 50%V_{P-P}$ $symmetry$ $Rise / fall time (20 \qquad 1.0ns max$ $\sim 80%V_{P-P})$ $Enable / disable \qquad Tristate (control via pad 1)$ $function$	Output	Complementary LV-PECL
Logic levels '0' level = 1.7V max '1' level = 2.2V min Waveform 40:60 max @ 50%V _{P-P} symmetry Rise / fall time (20 ~80%V _{P-P}) Enable / disable function Tristate (control via pad 1)	Test load	$R_T = 50\Omega$
'1' level = 2.2V min Waveform 40:60 max @ $50\%V_{P-P}$ symmetry Rise / fall time (20 1.0ns max $\sim 80\%V_{P-P}$) Enable / disable Tristate (control via pad 1) function		$V_{TT} = V_{DD}$ -2.0V
Waveform 40:60 max @ 50%V _{P-P} symmetry Rise / fall time (20 1.0ns max ~ 80%V _{P-P}) Enable / disable Tristate (control via pad 1) function	Logic levels	'0' level = 1.7V max
symmetry Rise / fall time (20 1.0ns max ~ 80%V _{P-P}) Enable / disable Tristate (control via pad 1) function		'1' level = 2.2V min
Rise / fall time (20 1.0ns max ~ 80%V _{P-P}) Enable / disable Tristate (control via pad 1) function	Waveform	40:60 max @ 50%V _{P-P}
$\sim 80\% V_{P-P}$) Enable / disable Tristate (control via pad 1) function	symmetry	
Enable / disable Tristate (control via pad 1) function	Rise / fall time (20	1.0ns max
function	~ 80%V _{P-P})	
	Enable / disable	Tristate (control via pad 1)
Phase jitter RMS 1ps max (0.3ps typ), 12kHz~20MHz	function	
	Phase jitter RMS	1ps max (0.3ps typ), 12kHz~20MHz

PACKAGE DRAWING









PAD	CONNECTION
1	Enable / disable
2	Not connected
3	Ground
4	Output 1 (Q)
5	Output 2 (Q)
6	Supply

Dimensions in mm



ORDERING INFORMATION

To request a quotation for the GXO-E51L please use the configurable options form to choose the options you require and then submit your configured product to our team. Our expert advisers are always happy to help with your requirements and can be contacted on +44 1460 256 100 or at sales@golledge.com.

Following product selection you will be issued with a seven character Golledge part number. Your Golledge part number is the internationally accepted Golledge manufacturing part number (MPN) that should be used for all project documentation, including bills of materials (BoMs) and purchase orders.

If you have any queries regarding any of our documentation our dedicated sales team will be happy to help.

ENABLE / DISABLE FUNCTION

Input (pad 1*)	Output 1 (pad 4)	Output 2 (pad 5)			
Open	Enabled	Enabled			
'1' level (≥0.7 V _{DD})	Enabled	Enabled			
'0' level (≤0.3 V _{DD})	High Impedanceive	High Impedance			

^{*}Enable / Disable function can be on pad 2 on request.

MARKING

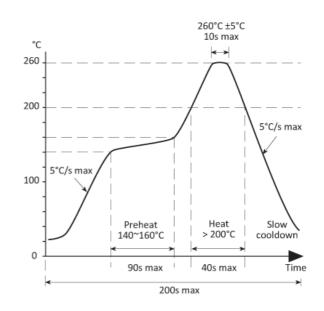


 Pin 1 Marking type: Laser

DC = Date Code in YM, eg. "GF" = Jun 2017

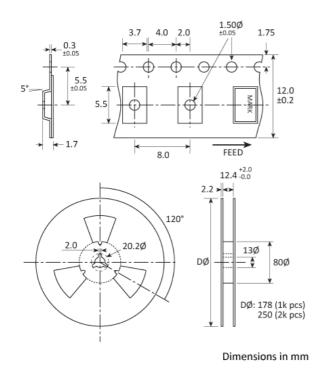
	Α	В	С	D	Ε	F	G	Н	J	K	L	М
Υ	1	2	3	4	5	6	7	8	9	0		
М	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

SOLDERING PROFILE





TAPE & REEL SPECIFICATION



HANDLING & STORAGE



Human Body Model (HBM) 1A (250V to <500V)



Moisture Sensitivity Level (MSL): 1 (or not applicable)

CONSTRUCTION

Ceramic body with gold-plated pads Metal lid, seam sealed

COMPLIANCE



Lead-free (< 0.1% by weight)



RoHS compliant with no exemptions. See our

declaration



REACH compliant. See our statement



Free of conflict minerals. See our declaration



Free of Halogens. See our declaration



Free of Ozone-depleting substances. See our

declaration