

**G534** (5x3.2x1.2 mm) is Mercury smallest footprint and lowest profile SMD VCXO. Its applications include phase lock loop, SONET/ATM, set-top boxes, MPEG, audio video modulations, video game consoles and HDTV sets. Output is TTL/CMOS compatible and voltage control on pad 1.



**General Specifications**

$T_A = +25^\circ\text{C}$ ,  $V_{DD}$  at specified voltage,  $C_L = 15\text{ pF}$

<b>Input Voltage (<math>V_{DD}</math>)</b>		$V_{DD} = +3.3\text{ V D.C. } \pm 10\%$	$V_{DD} = +5.0\text{ V D.C. } \pm 10\%$
<b>Mercury Model</b>		<b>3G534</b>	<b>5G534</b>
<b>Frequency Range</b>		1.5 MHz ~ 50.0 MHz	
<b>Initial Frequency Accuracy (at <math>+25^\circ\text{C}</math>)</b>		To tune to the nominal frequency with $V_C = +1.65\text{ V } \pm 0.2\text{V}$	To tune to the nominal frequency with $V_C = +2.5\text{ V } \pm 0.2\text{V}$
<b>Output Logic</b>		HCMOS	
<b>Output Voltage HIGH "1"</b>		2.97 V min.	4.5 V min.
<b>Output Voltage LOW "0"</b>		0.33 V max.	0.5 V max.
<b>Rise Time / Fall Time (<math>0.1V_{DD} \leftrightarrow 0.9V_{DD}</math>)</b>		5 n sec. max.	7 n sec. max.
<b>Output Load</b>		15 pF	
<b>Current Consumption</b>		1.5 ~ 19.9 MHz: 8 mA max. 20.0 ~ 40.0 MHz: 15 mA max. 40.1 ~ 50.0 MHz: 22 mA max.	1.5 ~ 19.9 MHz: 15 mA max. 20.0 ~ 40.0 MHz: 25 mA max. 40.1 ~ 50.0 MHz: 40 mA max.
<b>Frequency Stability<sup>(1)</sup></b>	<b>Commercial (<math>0^\circ\text{C}</math> to <math>+70^\circ\text{C}</math>) Temperature code is 'C'</b>	Stability code "A": $\pm 25$ ppm over $0^\circ\text{C}$ to $+70^\circ\text{C}$ Stability code "B": $\pm 50$ ppm over $0^\circ\text{C}$ to $+70^\circ\text{C}$ Stability code "C": $\pm 100$ ppm over $0^\circ\text{C}$ to $+70^\circ\text{C}$ If non-standard please enter the desired stability after the "C". For example "C20" represents $\pm 20$ ppm over 0 to $+70^\circ\text{C}$	
	<b>Industrial (<math>-40^\circ\text{C}</math> to <math>+85^\circ\text{C}</math>) Temperature code is 'I'</b>	Stability code "D": $\pm 25$ ppm over $-40^\circ\text{C}$ to $+85^\circ\text{C}$ Stability code "E": $\pm 50$ ppm over $-40^\circ\text{C}$ to $+85^\circ\text{C}$ Stability code "F": $\pm 100$ ppm over $-40^\circ\text{C}$ to $+85^\circ\text{C}$ If non-standard please enter the desired stability after the "I". For example "I20" represents $\pm 20$ ppm over -40 to $+85^\circ\text{C}$	
<b>Duty Cycle (symmetry)</b>		Standard: $50\% \pm 10\%$ . Option: $50\% \pm 5\%$ . Please add "S" at the end of the part number for this option.	
<b>Frequency Pulling Range</b>		From $\pm 50$ ppm to $\pm 150$ ppm Control Voltage Range: 0.3 to 3.0 V > $\pm 150$ ppm available upon request	From $\pm 60$ ppm to $\pm 150$ ppm Control Voltage Range: 0.5 to 4.5 V > $\pm 150$ ppm available upon request
<b>Start-up Time (<math>T_s</math>)</b>		1.5 ~ 32 MHz: 5 m sec. max.; 32+ MHz: 10 m sec. max.	
<b>Linearity</b>		< $\pm 150$ ppm frequency deviation: 10% max.; 6% typical. > $\pm 150$ ppm frequency deviation: 20% max.; 15% typical.	
<b>Slope Polarity</b>		Positive: Increasing control voltage increases output frequency	
<b>Phase Jitter RMS</b>		10 p sec. typical	
<b>Storage Temperature</b>		$-50^\circ\text{C}$ to $+100^\circ\text{C}$	
<b>Aging</b>		$\pm 5$ ppm per year max.	

<sup>(1)</sup>Inclusive of  $25^\circ\text{C}$  tolerance, operating temperature range,  $\pm 10\%$  input voltage variation, load change, aging, shock and vibration.

**MERCURY**    [www.mercury-crystal.com](http://www.mercury-crystal.com)

Taiwan: TEL (886)-2-2406-2779, FAX (886)-2-2496-0769, e-mail: sales-tw@mercury-crystal.com  
U.S.A.: TEL (1)-909-466-0427, FAX (1)-909-466-0762, e-mail: sales-us@mercury-crystal.com

**Environmental Specifications**

Green Requirement	RoHS Compliant; Pb (lead) free
Storage temp. range	-55 to +125°C
Humidity	85% RH, 85°C, 48 hours
Hermetic seal	Leak rate $2 \times 10^{-8}$ ATM-cm <sup>3</sup> /sec max.
Solderability	MIL-STD-202F method 208E
Reflow	260°C for 10 sec.
Vibration	MIL-STD-202F method 204, 35G, 50 to 2000 Hz
Shock	MIL-STD-202F method 213B, test condi. E, 1000GG 1/2 sine wave

**Part Number Format and Example**

= Please specify

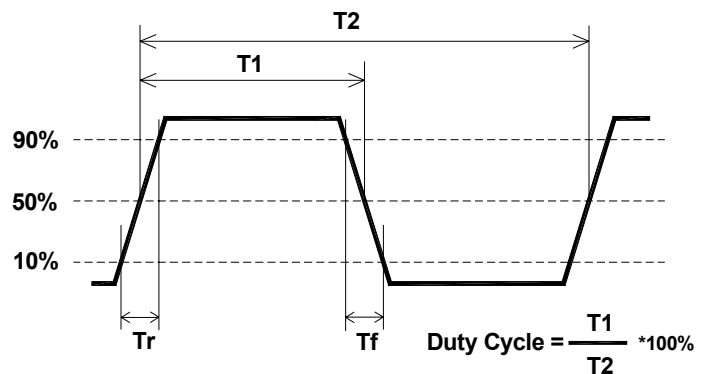
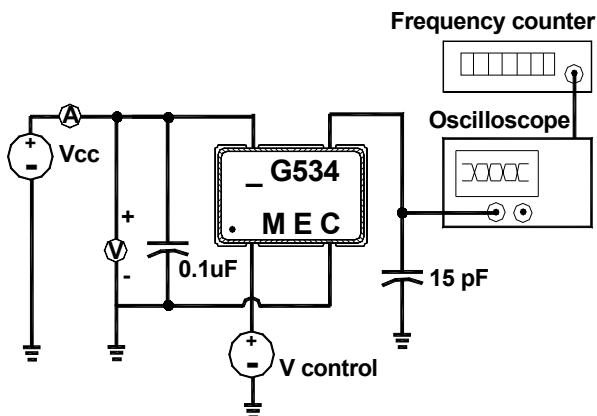
**Example:** 3G534B-100N-27.000S

**Explanation:** G534 series HCMOS VCXO, +3.3 V supply voltage, ±50 ppm frequency stability over 0 to +70°C, ±100 pm tminimum pulling range, 27.000 MHz, duty cycle is 45%/55%

3	G534	B	—	100	N	—	27.000	S
❶	❷	❸		❹	❺		❻	❼

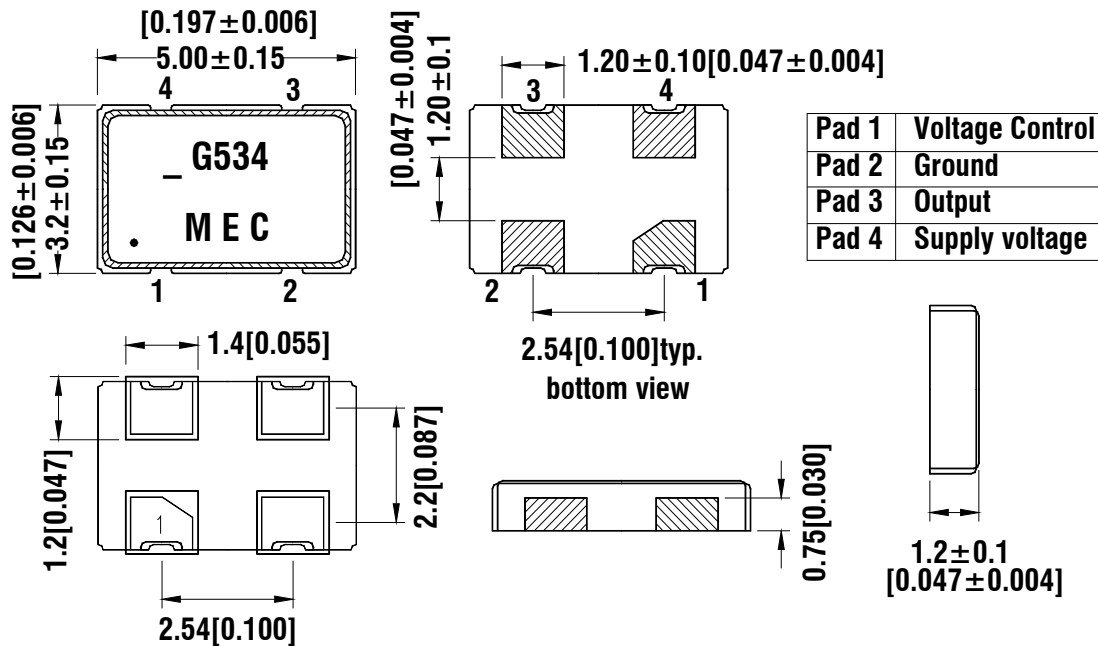
- ❶: Voltage code: "3" for +3.3 V; "5" for +5.0 V
- ❷: Product series    ❸: Frequency stability code: "A" ~ "F" or custom. See table above.
- ❹: Frequency deviation range in ppm.
- ❺: Frequency deviation tolerance: "N" for minimum; "M" for maximum; "T" for typical (±20%).
- ❻: Frequency in MHz    ❼: Leave blank if duty cycle is 46%/60%; enter "S" if duty cycle is 45%/55%

**G534 Test Circuit and Output Wave Form:**



**G534 Package Dimensions and Recommended Pad Layout:**

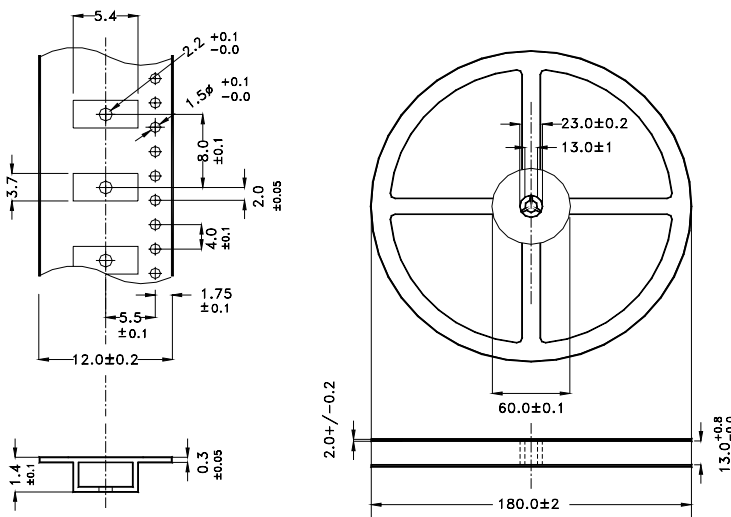
unit mm[inches]



Chamfered pad is pad No. 1. Count counter-clockwise when looking at top view.  
 Count clockwise when looking at bottom view.

**G534 Tape and Reel Dimensions**

unit: mm



**Reflow Soldering Condition**

