

FEATURES

- As good as 0.01 ppb/g per axis
- Within pull range in 0.1 seconds
- As low as ± 0.25 ppb over temp.
- Up to ± 1000 ppm pull range
- Aging as low as ± 50 ppb over 10 years

APPLICATIONS

- GPS/GNSS
- Naval Vessels
- Commercial and Military Aircraft
- Smart Munitions
- Ground Vehicles
- Industrial Construction Equipment
- Autonomous Agricultural Vehicles



Functional Description

The LGH300 Ultra-Low-G product family, incorporates Esterline Research and Design's patented MSAC compensation architecture within an ovenized oscillator temperature control system. This compensation achieves frequency stability performance of less than ± 0.25 ppb over the temperature range of -40°C to $+105^{\circ}\text{C}$. The LGH300 design platform can deliver acceleration sensitivity performance of less than 0.01 ppb/g, translating into minimal phase noise degradation under vibration.

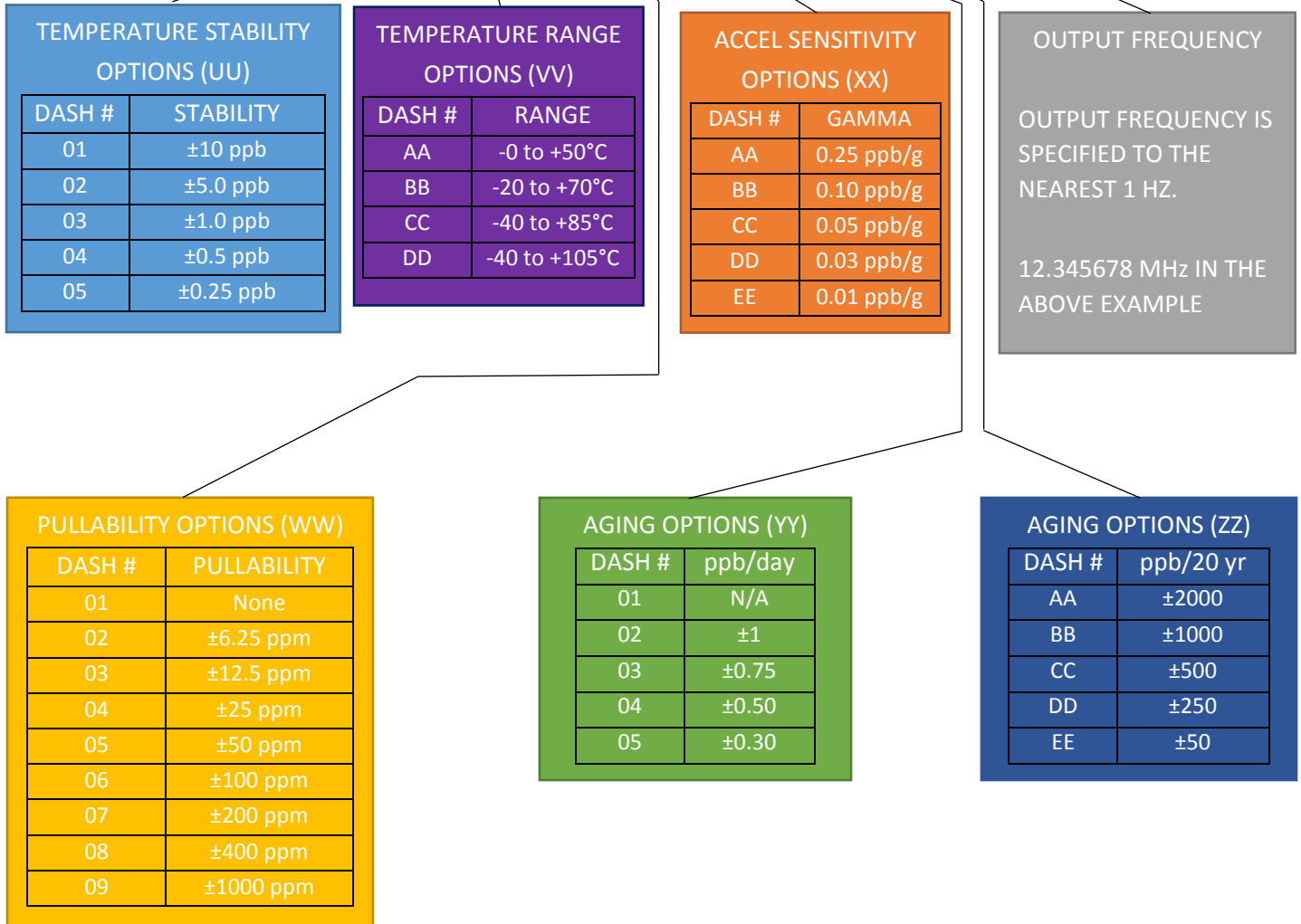
The LGH300 also offers other unique and performance enhancing features. Vastly superior turn-on characteristics as compared to traditional OCXO product offerings, with turn-on stability within ± 100 ppb of final frequency after 1 second of operation are achieved. Wide pull ranges up to ± 1000 ppm, and superior aging options as low as ± 50 ppb over 10 years life are also ordering options.

Standard Specifications:

Parameter	Minimum	Typical	Maximum	Units	Notes
Frequency Range	1		60	MHz	
Operational Temperature Range					See Ordering Options
Frequency vs Temperature					As Measured from Hot to Cold @ 1 Degree/Minute (See Ordering Options)
Calibration Tolerance			±5.0	ppb	At Time of Shipment
Frequency vs Supply			±0.1	ppb	5% change
Frequency vs Load			±0.25	ppb	5% change
Start-Up Time			100	mS	To reach 90 % of Final Amplitude and ±150 ppb of 30-Minute Frequency.
Warm-Up Time			5	Minutes	±10 ppb of 30-Minute frequency @ 25°C
Aging					See Ordering Options
Supply Voltage	4.75	5.00	5.25	VDC	
Input Power			5.25	W	During Warm-up
			2.00	W	Steady State at +25°C
Output Characteristics					Load = LVCMOS (15 pF)
Output High (VOH)		3.3		V	
Output Low (VOL)		0.1		V	
Duty Cycle	45	50	55	%	
Rise/Fall Time			6	nS	Measured between 10% and 90%
Oven Ready (Pin 6)					Open Collector – 10K ext pull-up to +5V
Oven not stabilized	2.4			V	
Oven stabilized			0.5	V	
Voltage Control Characteristics					
Voltage Range	0.00		3.3	V	
Pullability					See Ordering Options
Input Z		50		kΩ	
Linearity			1	%	
Phase Noise Characteristics					Performance at 10 MHz Output
1 Hz		-80	-74	dBc / Hz	
10 Hz Offset		-108	-102	dBc / Hz	
100 Hz Offset		-127	-123	dBc / Hz	
1 KHz Offset		-148	-145	dBc / Hz	
10 KHz Offset		-154	-150	dBc / Hz	
100 KHz Offset		-154	-150	dBc / Hz	
Environmental Specifications					
Shock per MIL-STD-202			Survive		Method 213, Condition C
Vibration per MIL-STD-202			Survive		Method 204, Condition A

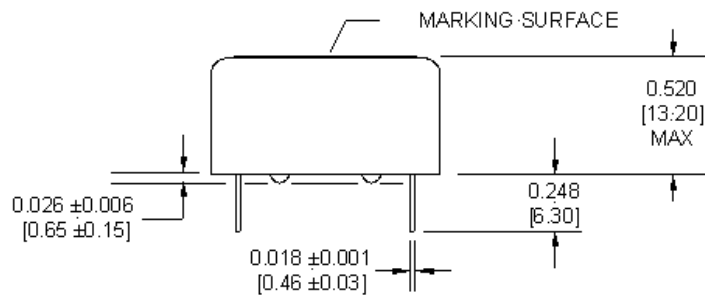
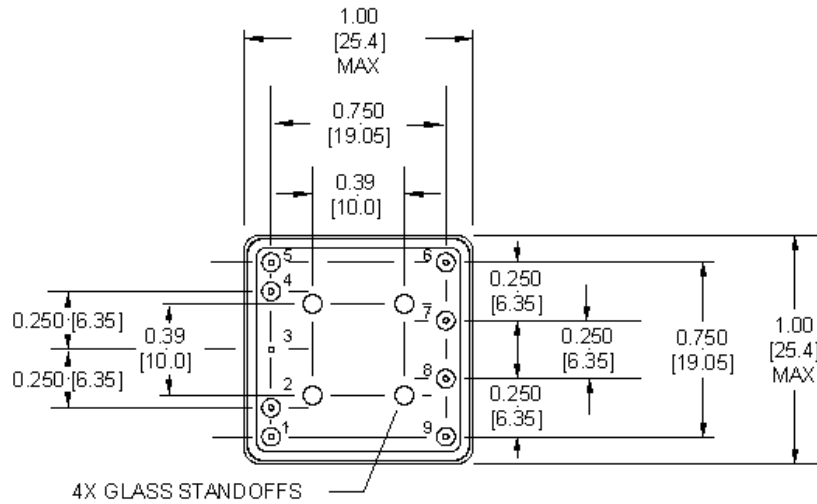
Ordering Information and Part Number Formatting:

LGH300-UU-VV-WW-XX-YY-ZZ-12M345678



*Note: Need an option not shown? Call or email Esterline Research and Design for help with your unique needs.

Mechanical Dimensions:



- NOTES:
- 1 - DIMENSIONAL UNITS: in [mm]
 - 2 - TOLERANCE: ±0.004 [±0.1 mm]
 - 3 - PIN MARKINGS DO NOT APPEAR ON THE DEVICE
 - 4 - PINS LABELED "N/C" SHOULD BE LEFT FLOATING

PIN FUNCTIONS	
PIN #	FUNCTION
1	RF OUTPUT
2	NC
3	GROUND
4	NC
5	NC
6	NC
7	NC
8	NC
9	SUPPLY VOLTAGE