

FEATURES

- As good as 0.005 ppb/g per axis
- Within pull range in 0.1 seconds
- As low as ± 5 ppb over temp.
- Up to ± 1000 ppm pull range
- Aging as low as ± 100 ppb over 20 years

APPLICATIONS

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



Functional Description

The LGT100 Ultra-Low-G product family, incorporates Esterline Research and Design's patented MSAC compensation architecture over the customer specified operating temperature range. This compensation achieves frequency stability as low as ± 5 ppb over the temperature range of -40°C to $+105^{\circ}\text{C}$. The LGT100 design platform can deliver acceleration sensitivity performance of less than 0.005 ppb/g, translating into minimal phase noise degradation under vibration.

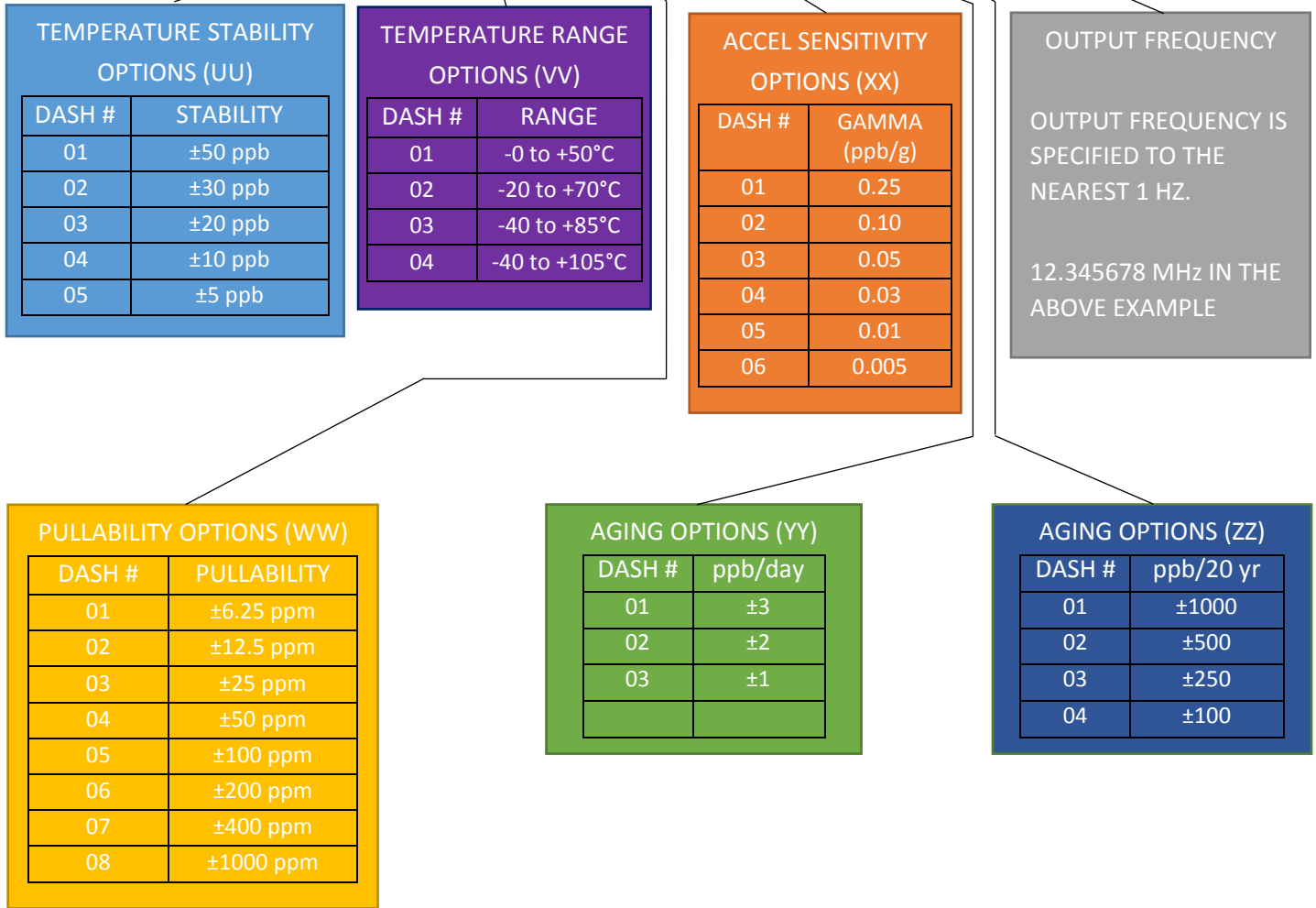
The LGT100 also offers other unique and performance enhancing features. Vastly superior turn-on characteristics as compared to OCXO product offerings, with turn-on stability within ± 100 ppb of final frequency after 1 second of operation. Wide pull ranges are also available up to ± 1000 ppm, and superior aging options as low as ± 100 ppb over 20 years life also available with the LGT100.

Standard Specifications:

| Parameter | Minimum | Typical | Maximum | Units | Notes |
|---------------------------------|---------|---------|---------|----------|---|
| Frequency Range | 1 | | 60 | MHz | |
| Operational Temperature Range | | | | | See Ordering Options |
| Frequency vs Temperature | | | | | See Ordering Options (Measured from Hot to Cold) |
| 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 Current | | | 80 | mA | @ 60 MHz output frequency |
| 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% |
| 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 |

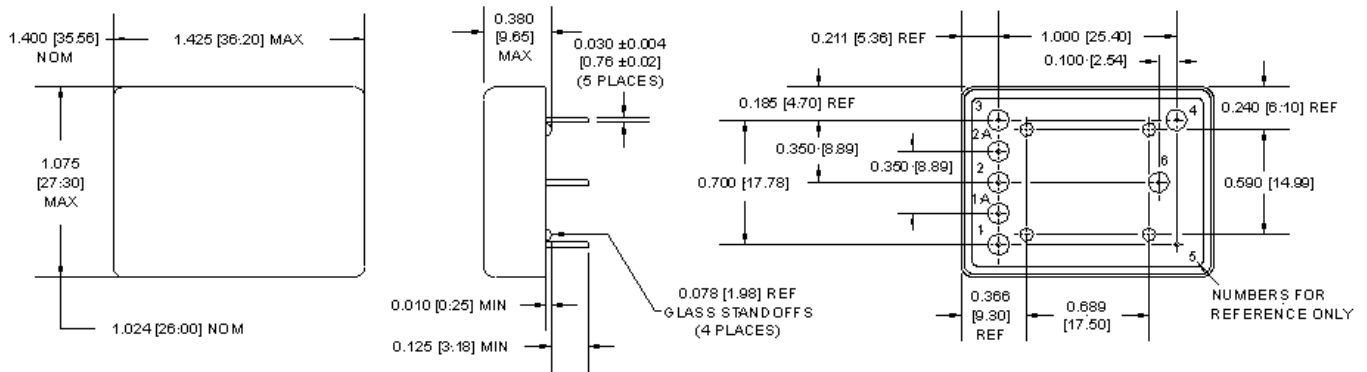
Ordering Information and Part Number Formatting:

LGT100-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:



TOLERANCES:
 INCHES: XXX = ±0.015
 [MILLIMETERS]: XX = ±0.8

| PIN # | FUNCTION |
|-------|------------|
| 1 | VC INPUT |
| 1A | N/C |
| 2 | VREF OR NC |
| 2A | N/C |
| 3 | +VDC |
| 4 | OUTPUT |
| 5 | GND |
| 6 | N/C |

NUMBERS FOR REFERENCE ONLY