



MX555ABG300M000

Ultra-Low Jitter 300MHz LVDS XO

ClockWorks® FUSION

General Description

The MX555ABG300M000 is an ultra-low phase jitter XO with LVDS output optimized for high line rate applications.

Features

- 300MHz LVDS
- Typical phase noise:
 - 100fs (Integration range: 1.875MHz-20MHz)
- ±50ppm total frequency stability
- -40°C to +85°C temperature range
- Industry standard 6-Pin 5mm x 3.2mm LGA package

Absolute Maximum Ratings

| | |
|--|-------|
| Supply Voltage (VIN)..... | +4.6V |
| Lead Temperature (soldering, 10s)..... | 260°C |
| Storage Temperature (T _s)..... | 125°C |
| ESD Rating (HBM)..... | 2kV |

Operating Ratings

| | |
|-------------------------------|-------------------|
| Supply Voltage (VIN)..... | +2.375V to +3.63V |
| Ambient Temperature (TA)..... | -40°C to +85°C |

Electrical Characteristics

VDD = 2.375 - 3.63V, TA = -40°C to +85°C, outputs terminated with 100 Ohms between Q and /Q.¹

| Symbol | Parameter | Condition | Min. | Typ. | Max. | Units |
|--------|--|---|-------|------------|-------|-------|
| IDD | Supply Current | | | | 90 | mA |
| F0 | Center Frequency | | | 300 | | MHz |
| | Frequency Stability | Note 2 | | | ±50 | ppm |
| ∅j | Phase Noise | Integration Range (12kHz to 20MHz) Integration Range (1.875MHz to 20MHz) | | 220 100 | | fsRMS |
| Tstart | Start-Up Time | | | | 20 | ms |
| TR/TF | Rise/Fall time | | 100 | | 400 | ps |
| | Duty Cycle | | 45 | | 55 | % |
| VOH | Output High Voltage VOH max = VCM max + 1/2 VOD max | LVDS output levels | 1.248 | 1.375 | 1.602 | V |
| VOL | Output Low Voltage VOL min = VCM min - 1/2 VOD max | LVDS output levels | 0.898 | 1.025 | 1.252 | V |
| VOD | Output Differential Voltage | | 247 | 350 | 454 | mV |
| VCM | Common Mode Output Voltage | | 1.125 | 1.2 | 1.375 | V |

Notes:

1. Guaranteed after thermal equilibrium.
2. Inclusive of initial accuracy, temperature drift, aging, shock, vibration.

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January 30, 2017
MX555AB1-4792

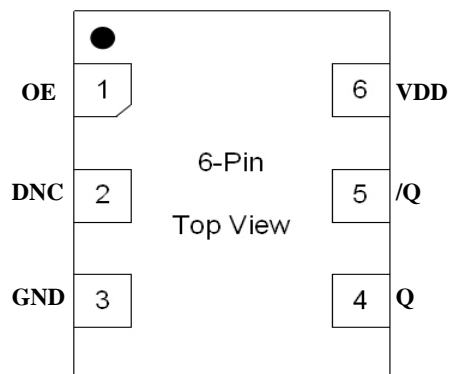
Revision 1.0
tcghelp@microchip.com

Ordering Information

| Ordering Part Number | Marking Line 1 | Marking Line 3 | Shipping | Package |
|----------------------|----------------|----------------|---------------|-----------------------|
| MX555ABG300M000 | MX555A | BG3000 | Tube | 6-Pin 5mm x 3.2mm LGA |
| MX555ABG300M000 TR | MX555A | BG3000 | Tape and Reel | 6-Pin 5mm x 3.2mm LGA |

Devices are Green and RoHS compliant. Sample material may have only a partial top mark.

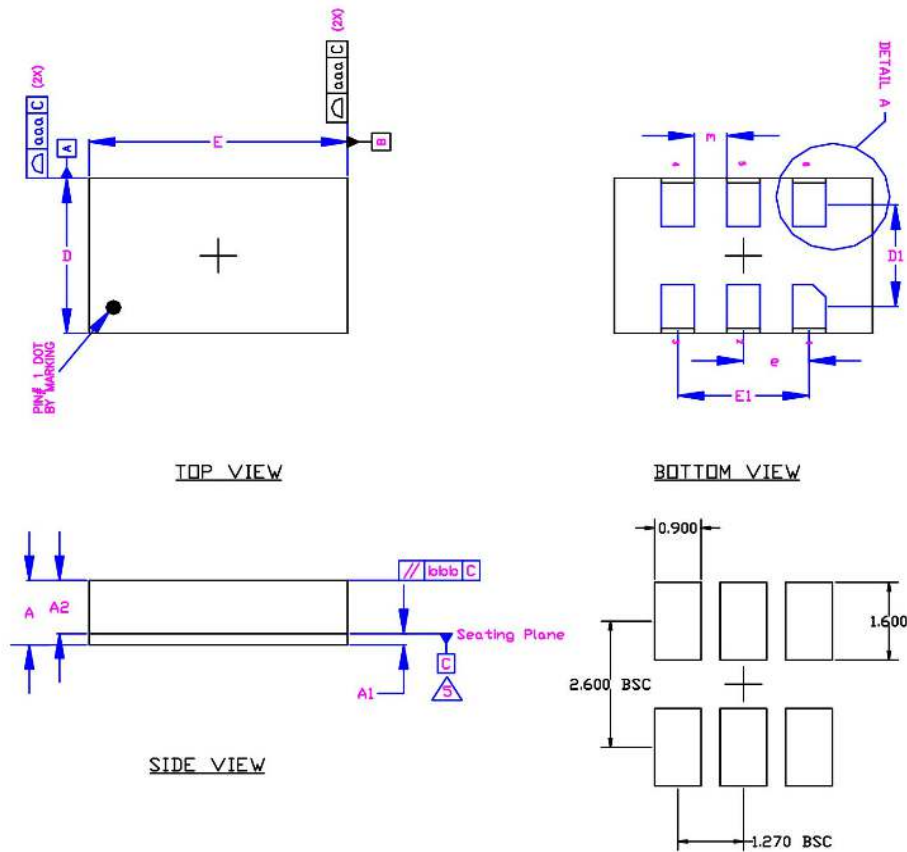
Pin Configuration



Pin Description

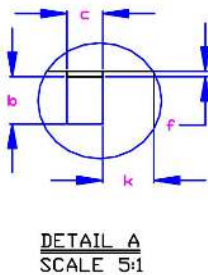
| Pin Number | Pin Name | Pin Type | Pin Level | Pin Function |
|------------|----------|----------|-----------|--|
| 1 | OE | I, SE | LVC MOS | Output Enable, disables output to tri-state, 1 = Disabled, 0 = Enabled, 50k Ohms Pull-Down |
| 2 | DNC | | | Make no connection, leave floating. |
| 3 | GND | PWR | | Power Supply Ground |
| 4, 5 | Q, /Q | O, Diff | LVDS | Clock Output Frequency = 300MHz |
| 6 | VDD | PWR | | Power Supply |

Package Information and Recommended Land Pattern for 6-Pin LGA³

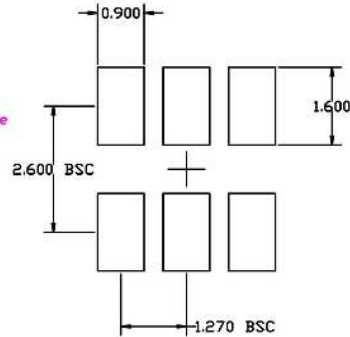


| Dimensional Tol. | |
|------------------|-------|
| aaa | 0.100 |
| bbb | 0.170 |

| Dimensional Ref. | | | |
|------------------|-----------|-------|-------|
| REF. | Min. | Nom. | Max. |
| A | 1.260 | 1.330 | 1.400 |
| A1 | 0.190 | 0.230 | 0.270 |
| A2 | 1.070 | 1.100 | 1.130 |
| D | 3.100 | 3.200 | 3.300 |
| D1 | 2.100 BSC | | |
| E | 4.900 | 5.100 | 5.100 |
| E1 | 2.540 BSC | | |
| b | 0.850 | 0.900 | 0.950 |
| c | 0.850 | 0.900 | 0.950 |
| e | 1.270 BSC | | |
| f | 0.850 | 0.100 | 0.150 |
| k | 0.860 | 0.910 | 0.960 |
| m | 0.580 | 0.630 | 0.680 |
| n | 6 | | |



RECOMMENDED LAND PATTERN



- Notes**
1. Dimensioning and Tolerancing per ASME Y14.5M-1994.
 2. Dimensions are in millimeters.
 3. 'e' represents the basic LGA pitch
 4. 'n' is the maximum no. of Land for a specified Package.
 5. Package warp shall be 0.050 max.
 6. Substrate base is BT Resin
 7. The Pin#1 corner must be identified on top side only.
 8. Reference Jeduc Spec M0-220

6-Pin LGA (5x3.2mm)

Note:

3. Package information is correct as of the publication date. For updates and most current information, go to www.microchip.com.

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