

SiT3373

220 MHz to 725 MHz Ultra-low Jitter Differential VCXO



Description

The **SiT3373** is a 220.000001 MHz to 725 MHz differential MEMS VCXO engineered for low-jitter applications. Utilizing SiTime's unique DualMEMS[®] temperature sensing and TurboCompensation[®] technology, the SiT3373 delivers exceptional dynamic performance by providing resistance to airflow, thermal gradients, shock and vibration. This device also integrates multiple on-chip regulators to filter power supply noise, eliminating the need for a dedicated external LDO.

The SiT3373 can be factory programmed for any combination of frequency, stability, voltage, output signaling, and pull range. Programmability enables designers to optimize clock configurations while eliminating long lead times and customization costs associated with quartz devices where each frequency is custom built.

The wide frequency range and programmability makes this device ideal for telecom, networking, and industrial applications that require a variety of pullable frequencies and operate in noisy environments.

Refer to [Manufacturing Notes](#) for proper reflow profile, tape and reel dimension, and other manufacturing related information.

Features

- Any frequency between 220.000001 MHz and 725 MHz accurate to 6 decimal places (For frequencies 1 MHz to 220 MHz, refer to [SiT3372](#))
- Widest pull range options: ± 25 , ± 50 , ± 80 , ± 100 , ± 150 , ± 200 , ± 400 , ± 800 , ± 1600 , ± 3200 ppm
- 0.225 ps RMS phase jitter (typ) over 12 kHz to 20 MHz bandwidth
- Frequency stability as low as ± 15 ppm
- Wide temperature range support from -40°C to 105°C
- Industry-standard packages: 7.0 x 5.0 mm, 5.0 x 3.2 mm, 3.2 x 2.5 mm packages

Applications

- Cable Modem Termination System (CMTS), Video, Broadcasting System, Audio, Industrial Sensors, Remote Radio Head (RRH)
- SATA, SAS, 10/40/100/400 Gbps Ethernet, Fibre Channel, PCI-Express
- Optical Transport Network (OTN)

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Block Diagram

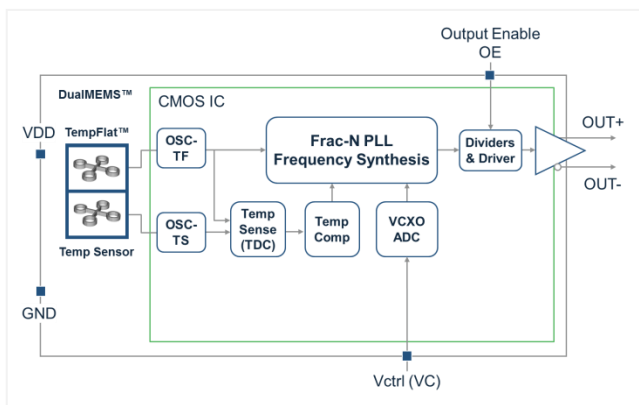


Figure 1. SiT3373 Block Diagram

3.2 x 2.5 mm Package Pinout

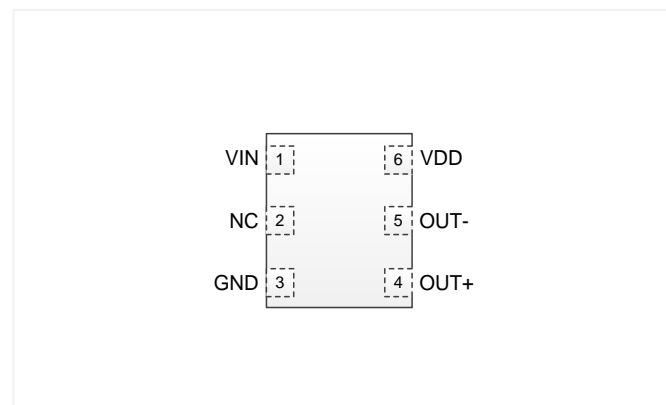


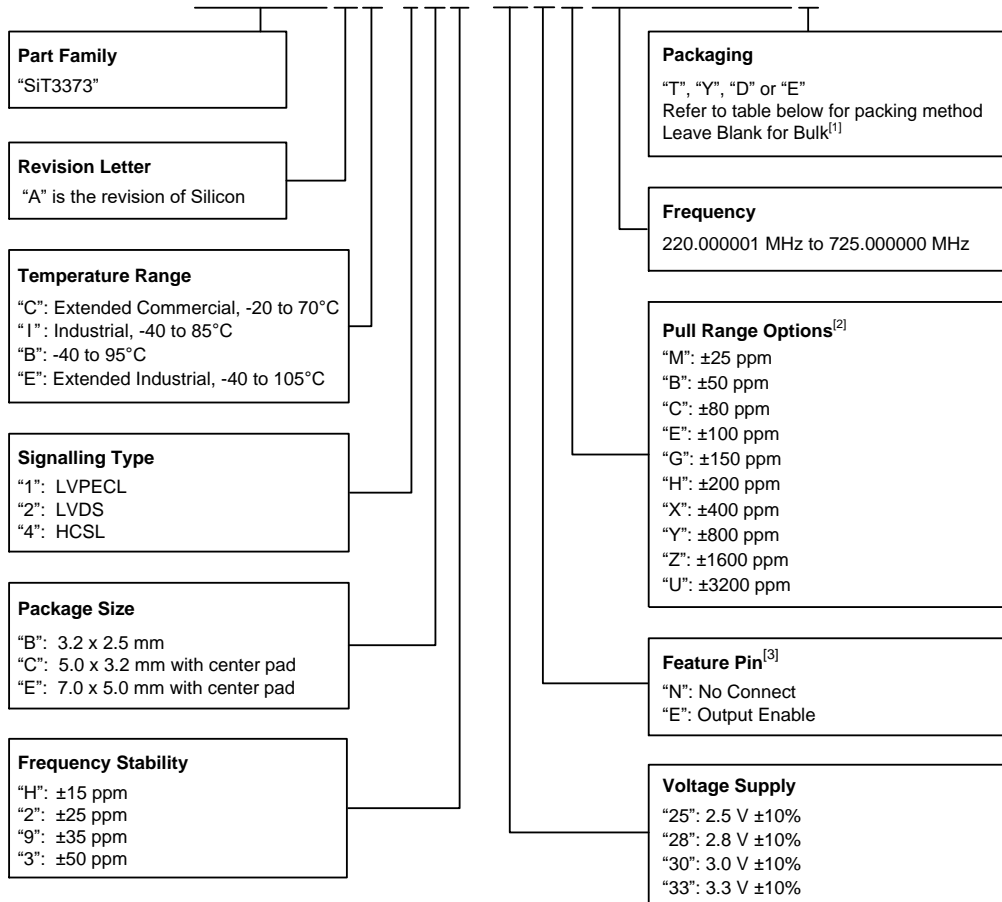
Figure 2. Pin Assignments (Top view)
(Refer to [Table 6](#) for Pin Descriptions)



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Ordering Information

SiT3373AC-1B2-33NH220.123456T



Notes:

1. Bulk is available for sampling only.
2. Contact SiTime for custom pull range options.
3. "E": Output Enable function is only available in 7.0 x 5.0 mm and 5.0 x 3.2 mm packages.

Table 1. Ordering Codes for Supported Tape & Reel Packing Method

| Device Size (mm x mm) | 8 mm T&R (3ku) | 8 mm T&R (1ku) | 12 mm T&R (3ku) | 12 mm T&R (1ku) | 16 mm T&R (3ku) | 16 mm T&R (1ku) |
|-----------------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| 7.0 x 5.0 | - | - | - | - | T | Y |
| 5.0 x 3.2 | - | - | T | Y | - | - |
| 3.2 x 2.5 | D | E | T | Y | - | - |



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Electrical Characteristics
Table 2. Electrical Characteristics – Common to LVPECL, LVDS and HCSL

All Min and Max limits in the Electrical Characteristics tables are specified over temperature and rated operating voltage with standard output termination shown in the termination diagrams. Typical values are at 25°C and nominal supply voltage.

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|--|---------|---|------|------|------|---|
| Frequency Range | | | | | | |
| Output Frequency Range | f | 220.000001 | – | 725 | MHz | Accurate to 6 decimal places |
| Frequency Stability | | | | | | |
| Frequency Stability | F_stab | -15 | – | +15 | ppm | Inclusive of initial tolerance, operating temperature, rated power supply voltage, load variations, and first year aging at 25°C, with VIN voltage at Vdd/2. ±15 ppm is only guaranteed for pull range up to ±100 ppm. |
| | | -25 | – | +25 | ppm | |
| | | -35 | – | +35 | ppm | |
| | | -50 | – | +50 | ppm | |
| Temperature Range | | | | | | |
| Operating Temperature Range | T_use | -20 | – | +70 | °C | Extended Commercial |
| | | -40 | – | +85 | °C | Industrial |
| | | -40 | – | +95 | °C | |
| | | -40 | – | +105 | °C | Extended Industrial |
| Supply Voltage | | | | | | |
| Supply Voltage | Vdd | 2.97 | 3.30 | 3.63 | V | |
| | | 2.70 | 3.00 | 3.30 | V | |
| | | 2.52 | 2.80 | 3.08 | V | |
| | | 2.25 | 2.50 | 2.75 | V | |
| Voltage Control Characteristics | | | | | | |
| Pull Range | PR | ±25, ±50, ±80, ±100, ±150, ±200, ±400, ±800, ±1600, ±3200 | | | ppm | See the APR (Absolute Pull Range) Table 11 . Contact SiTime for custom pull range options |
| Upper Control Voltage | VC_U | 90% | – | – | Vdd | Voltage at which maximum frequency deviation is guaranteed |
| Lower Control Voltage | VC_L | – | – | 10% | Vdd | Voltage at which minimum frequency deviation is guaranteed |
| Control Voltage Input Impedance | VC_z | – | 10 | – | MΩ | |
| Control Voltage Input Bandwidth | V_c | – | 10 | – | kHz | Contact SiTime for other input bandwidth options |
| Pull Range Linearity | Lin | – | – | 1.0 | % | |
| Frequency Change Polarity | – | Positive Slope | | | – | |
| Input Characteristics | | | | | | |
| Input Voltage High | VIH | 70% | – | – | Vdd | Pin 2, OE |
| Input Voltage Low | VIL | – | – | 30% | Vdd | Pin 2, OE |
| Input Pull-up Impedance | Z_in | – | 100 | – | kΩ | Pin 2, OE logic high or logic low |
| Output Characteristics | | | | | | |
| Duty Cycle | DC | 45 | – | 55 | % | |
| Startup and OE Timing | | | | | | |
| Start-up Time | T_start | – | – | 3.0 | ms | Measured from the time Vdd reaches its rated minimum value. |
| OE Enable/Disable Time | T_oe | – | – | 3.8 | μs | f = 322.265625 MHz. Measured from the time OE pin reaches rated VIH and VIL to the time clock pins reach 90% of swing and high-Z. See Figure 9 and Figure 10 |

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Table 3. Electrical Characteristics – LVPECL Specific

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|--|---------------------------------|-----------------------|-------|----------------------|------|--|
| Current Consumption | | | | | | |
| Current Consumption | I _{dd} | – | – | 97 | mA | Excluding Load Termination Current, V _{dd} = 3.3 V or 2.5 V |
| OE Disable Supply Current | I _{OE} | – | – | 63 | mA | OE = Low |
| Output Disable Leakage Current | I _{leak} | – | 0.15 | – | μA | OE = Low |
| Maximum Output Current | I _{driver} | – | – | 32 | mA | Maximum average current drawn from OUT+ or OUT- |
| Output Characteristics | | | | | | |
| Output High Voltage | VOH | V _{dd} -1.15 | – | V _{dd} -0.7 | V | See Figure 5 |
| Output Low Voltage | VOL | V _{dd} -1.9 | – | V _{dd} -1.5 | V | See Figure 5 |
| Output Differential Voltage Swing | V _{Swing} | 1.2 | 1.6 | 2.0 | V | See Figure 6 |
| Rise/Fall Time | T _r , T _f | – | 225 | 290 | ps | 20% to 80%, see Figure 6 |
| Jitter – 7.0 x 5.0 mm Package | | | | | | |
| RMS Period Jitter^[4] | T _{jitt} | – | 1.0 | 1.6 | ps | f = 322.265625 MHz, V _{dd} = 3.3 V or 2.5 V |
| RMS Phase Jitter (random) | T _{phj} | – | 0.220 | 0.270 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -20 to 70°C and -40 to 85°C |
| | | – | 0.220 | 0.300 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -40 to 95°C and -40 to 105°C |
| | | – | 0.1 | – | ps | f = 156.25 or 322.265625 MHz, IEEE802.3-2005 10 GbE jitter mask integration bandwidth = 1.875 MHz to 20 MHz, all V _{dd} levels |
| Jitter – 5.0 x 3.2 mm and 3.2 x 2.5 mm Packages | | | | | | |
| RMS Period Jitter^[4] | T _{jitt} | – | 1.0 | 1.6 | ps | f = 322.265625 MHz, V _{dd} = 3.3 V or 2.5 V |
| RMS Phase Jitter (random) | T _{phj} | – | 0.225 | 0.282 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -20 to 70°C and -40 to 85°C |
| | | – | 0.225 | 0.315 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -40 to 95°C and -40 to 105°C |
| | | – | 0.1 | – | ps | f = 322.265625 MHz, IEEE802.3-2005 10 GbE jitter mask integration bandwidth = 1.875 MHz to 20 MHz, all V _{dd} levels |

Notes:

4. Measured according to JESD65B.

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Table 4. Electrical Characteristics – LVDS Specific

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|--|---------------------------------|-------|-------|-------|------|--|
| Current Consumption | | | | | | |
| Current Consumption | I _{dd} | – | – | 89 | mA | Excluding Load Termination Current, V _{dd} = 3.3 V or 2.5 V |
| OE Disable Supply Current | I _{OE} | – | – | 67 | mA | OE = Low |
| Output Disable Leakage Current | I _{leak} | – | 0.15 | – | μA | OE = Low |
| Output Characteristics | | | | | | |
| Differential Output Voltage | V _{OD} | 250 | – | 450 | mV | See Figure 7 |
| Delta VOD | ΔV _{OD} | – | – | 50 | mV | See Figure 7 |
| Offset Voltage | V _{OS} | 1.125 | – | 1.375 | V | See Figure 7 |
| Delta VOS | ΔV _{OS} | – | – | 50 | mV | See Figure 7 |
| Rise/Fall Time | T _r , T _f | – | 370 | 470 | ps | Measured with 2 pF capacitive loading to GND, 20% to 80%, see Figure 8 |
| Jitter – 7.0 x 5.0 mm package | | | | | | |
| RMS Period Jitter^[5] | T _{jitt} | – | 0.92 | 1.6 | ps | f = 322.265625 MHz, V _{dd} = 3.3V or 2.5V |
| RMS Phase Jitter (random) | T _{phj} | – | 0.215 | 0.265 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -20 to 70°C and -40 to 85°C |
| | | – | 0.215 | 0.280 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -40 to 95°C and -40 to 105°C |
| | | – | 0.1 | – | ps | f = 322.265625 MHz, IEEE802.3-2005 10 GbE jitter mask integration bandwidth = 1.875 MHz to 20 MHz, includes spurs, all V _{dd} levels |
| Jitter – 5.0 x 3.2 mm and 3.2 x 2.5 mm packages | | | | | | |
| RMS Period Jitter^[5] | T _{jitt} | – | 0.92 | 1.6 | ps | f = 322.265625 MHz, V _{dd} = 3.3 V or 2.5 V |
| RMS Phase Jitter (random) | T _{phj} | – | 0.235 | 0.282 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -20 to 70°C and -40 to 85°C |
| | | – | 0.235 | 0.310 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -40 to 95°C and -40 to 105°C |
| | | – | 0.1 | – | ps | f = 322.265625 MHz, IEEE802.3-2005 10 GbE jitter mask integration bandwidth = 1.875 MHz to 20 MHz, includes spurs, all V _{dd} levels |

Notes:

5. Measured according to JESD65B.

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Table 5. Electrical Characteristics – HCSL Specific

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|--|--------------------|-------|-------|-------|-------|--|
| Current Consumption | | | | | | |
| Current Consumption | I _{dd} | – | – | 102 | mA | Excluding Load Termination Current, V _{dd} = 3.3 V or 2.5 V |
| OE Disable Supply Current | I _{OE} | – | – | 67 | mA | OE = Low |
| Output Disable Leakage Current | I _{leak} | – | 0.15 | – | μA | OE = Low |
| Output Characteristics | | | | | | |
| Output High Voltage | VOH | 0.6 | – | 0.90 | V | See Figure 5 |
| Output Low Voltage | VOL | -0.05 | – | 0.08 | V | See Figure 5 |
| Output Differential Voltage Swing | V _{Swing} | 1.2 | 1.4 | 1.8 | V | See Figure 6 |
| Rise/Fall Time | Tr, Tf | – | 360 | 470 | ps | Measured with 2 pF capacitive loading to GND, 20% to 80%, see Figure 6 |
| Jitter – 7.0 x 5.0 mm package | | | | | | |
| RMS Period Jitter^[6] | T _{jitt} | – | 1.0 | 1.6 | ps | f = 322.265625 MHz, V _{dd} = 3.3 V or 2.5 V |
| RMS Phase Jitter (random) | T _{phj} | – | 0.215 | 0.265 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, Pull Range = ±100 ppm |
| | | – | 0.215 | 0.282 | ps | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -20 to 70°C and -40 to 85°C |
| | | – | 0.1 | – | ps | f = 322.265625 MHz, IEEE802.3-2005 10 GbE jitter mask integration bandwidth = 1.875 MHz to 20 MHz, includes spurs, all V _{dd} levels |
| Jitter – 5.0 x 3.2 mm and 3.2 x 2.5 mm packages | | | | | | |
| RMS Period Jitter^[6] | T _{jitt} | – | 1.0 | 1.6 | ps | f = 322.265625 MHz, V _{dd} = 3.3 V or 2.5 V |
| RMS Phase Jitter (random) | T _{phj} | – | 0.235 | 0.282 | 0.215 | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -20 to 70°C and -40 to 85°C |
| | | – | 0.235 | 0.305 | 0.215 | f = 322.265625 MHz, Integration bandwidth = 12 kHz to 20 MHz, all V _{dd} levels, includes spurs, pull range = ±100 ppm. Temperature ranges -40 to 95°C and -40 to 105°C |
| | | – | 0.1 | – | 0.1 | f = 322.265625 MHz, IEEE802.3-2005 10 GbE jitter mask integration bandwidth = 1.875 MHz to 20 MHz, includes spurs, all V _{dd} levels |

Notes:

6. Measured according to JESD65B.



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Table 6. Pin Description

| Pin | Symbol | | Functionality |
|-----|--------|--------------------|---|
| 1 | VIN | Input | Control Voltage |
| 2 | NC/OE | No Connect (NC) | No Connect: Leave floating or connect to GND for better heat dissipation. NC for all 3.2 x 2.5 mm package options. |
| | | Output Enable (OE) | H ^[7,8] : specified frequency output L: output is high impedance. Only output driver is disabled. OE function only available on 7050 and 5032 packages. Pin 2 on 3225 package is NC. |
| 3 | GND | Power | Vdd Power Supply Ground |
| 4 | OUT+ | Output | Oscillator output |
| 5 | OUT- | Output | Complementary oscillator output |
| 6 | VDD | Power | Power supply voltage ^[9] |

Top View

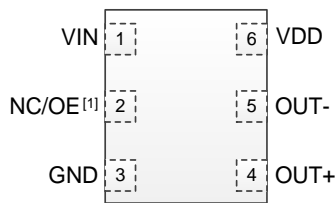


Figure 3. Pin Assignments (7.0 x 5.0 mm and 5.0 x 3.2 mm packages)

Top View

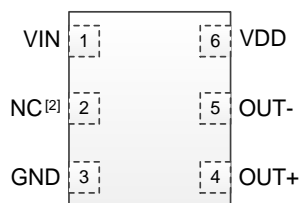


Figure 4. Pin Assignments (3.2 x 2.5 mm package)

Notes:

- 7. A pull-up resistor of 10 kΩ or less is recommended if pin 1 is not externally driven.
- 8. OE mode is only available in the 7050 and 5032 packages. 3225 package is NC.
- 9. A capacitor of value 0.1 μF or higher between VDD and GND is required. An additional 10 μF capacitor between VDD and GND is required for the best phase jitter performance.

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Table 7. Absolute Maximum Ratings

Attempted operation outside the absolute maximum ratings may cause permanent damage to the part. Actual performance of the IC is only guaranteed within the operational specifications, not at absolute maximum ratings.

| Parameter | Min. | Max. | Unit |
|--|------|------------|------|
| Continuous Power Supply Voltage Range (Vdd) | -0.5 | 4.0 | V |
| Input Voltage, Maximum (any input pin) | | Vdd + 0.3V | V |
| Input Voltage, Minimum (any input pin) | -0.3 | | V |
| Storage Temperature | -65 | 150 | °C |
| Maximum Junction Temperature | | 145 | °C |
| Soldering Temperature (follow standard Pb-free soldering guidelines) | | 260 | °C |

Table 8. Thermal Considerations^[10]

| Package | θ_{JA} , 4 Layer Board (°C/W) | θ_{JC} , Bottom (°C/W) |
|-------------|--------------------------------------|-------------------------------|
| 3225, 6-pin | 80 | 30 |
| 5032, 6-pin | 53 ^[11] | 20 |
| 7050, 6-pin | 52 ^[11] | 19 |

Notes:

10. Refer to JESD51 for θ_{JA} and θ_{JC} definitions, and reference layout used to determine the θ_{JA} and θ_{JC} values in the above table.
 11. Value for θ_{JA} assumes the center pad is soldered down.

Table 9. Maximum Operating Junction Temperature^[12]

| Max Operating Temperature (ambient) | Maximum Operating Junction Temperature: 3225 Package | Maximum Operating Junction Temperature: 5032, 7050 Packages |
|-------------------------------------|---|--|
| 70°C | 105°C | 95°C |
| 85°C | 130°C | 110°C |
| 95°C | 130°C | 120°C |
| 105°C | 145°C | 130°C |

Notes:

12. Datasheet specifications are not guaranteed if junction temperature exceeds the maximum operating junction temperature.

Table 10. Environmental Compliance

| Parameter | Test Conditions | Value | Unit |
|--|---------------------------|--------|------|
| Mechanical Shock Resistance | MIL-STD-883F, Method 2002 | 10,000 | g |
| Mechanical Vibration Resistance | MIL-STD-883F, Method 2007 | 70 | g |
| Soldering Temperature (follow standard Pb free soldering guidelines) | MIL-STD-883F, Method 2003 | 260 | °C |
| Moisture Sensitivity Level | MSL1 @ 260°C | | |
| Electrostatic Discharge (HBM) | HBM, JESD22-A114 | 2,000 | V |
| Charge-Device Model ESD Protection | JESD220C101 | 750 | V |
| Latch-up Tolerance | JESD78 Compliant | | |

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Waveform Diagrams

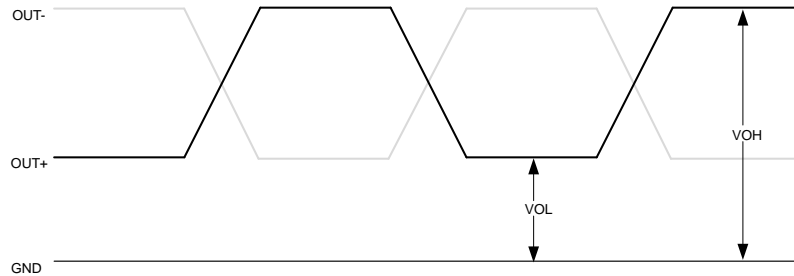


Figure 5. LVPECL, HCSL Voltage Levels per Differential Pin (i.e. OUT+, or OUT-)

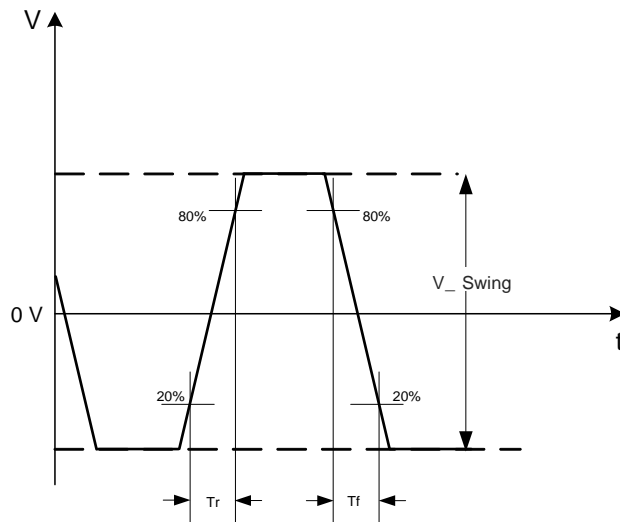


Figure 6. LVPECL, HCSL Voltage Levels across Differential Pair (i.e. OUT+ minus OUT-)

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Waveform Diagrams (continued)

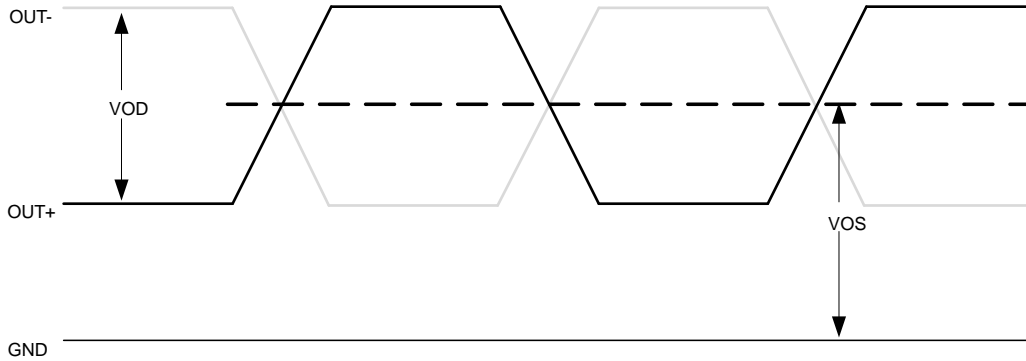


Figure 7. LVDS Voltage Levels per Differential Pin (i.e. OUT+, or OUT-)

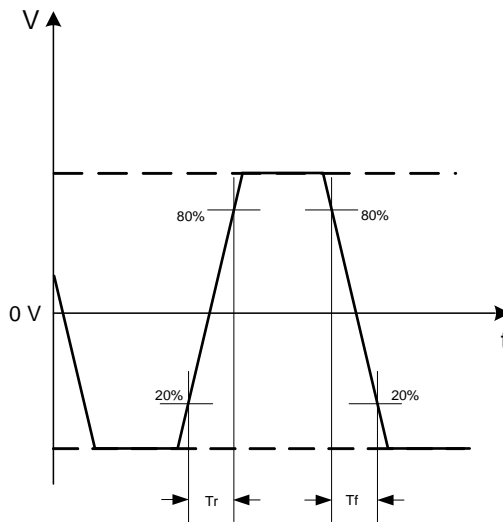


Figure 8. LVDS Differential Waveform (i.e. OUT+ minus OUT-)

Timing Diagrams

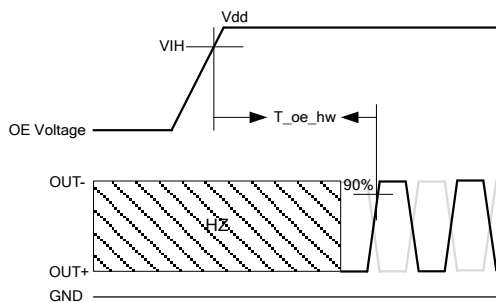


Figure 9. Hardware OE Enable Timing

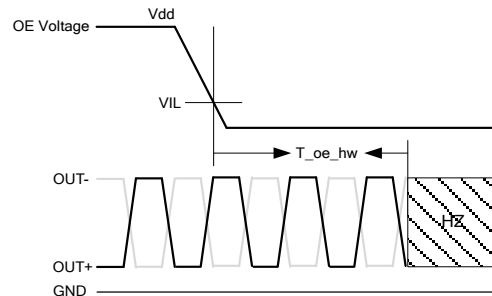


Figure 10. Hardware OE Disable Timing

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Termination Diagrams

LVPECL

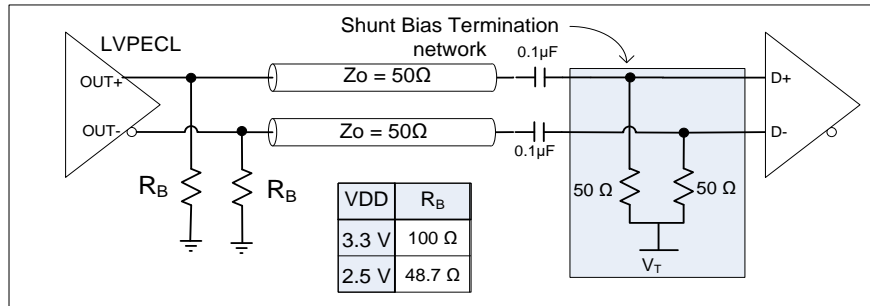


Figure 11. LVPECL with AC-coupled termination

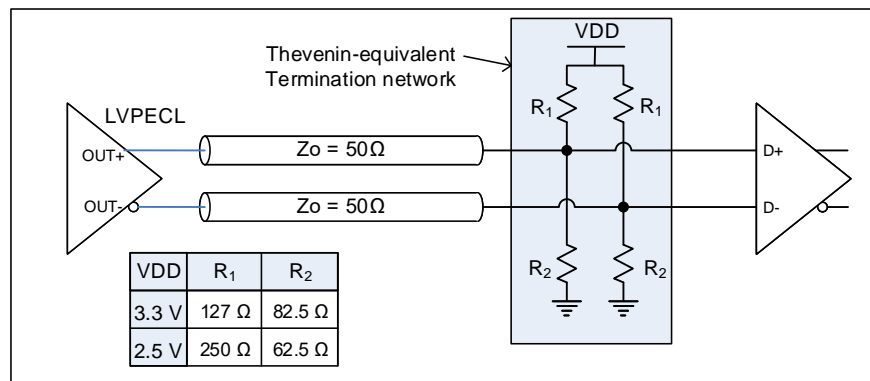


Figure 12. LVPECL DC-coupled load termination with Thevenin equivalent network

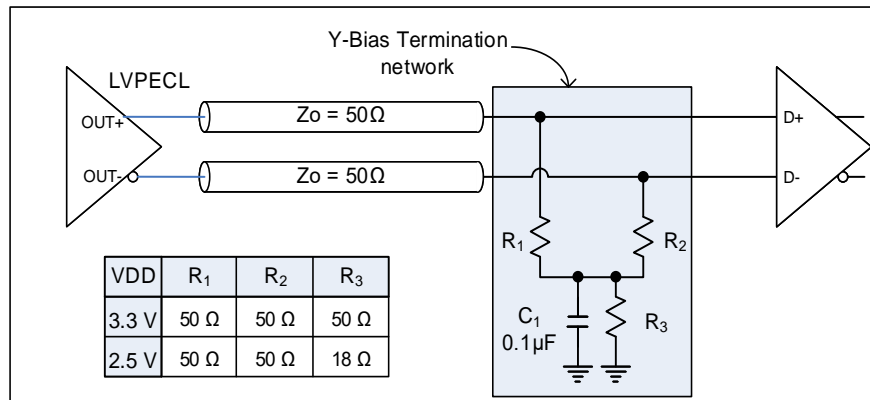


Figure 13. LVPECL with Y-Bias termination

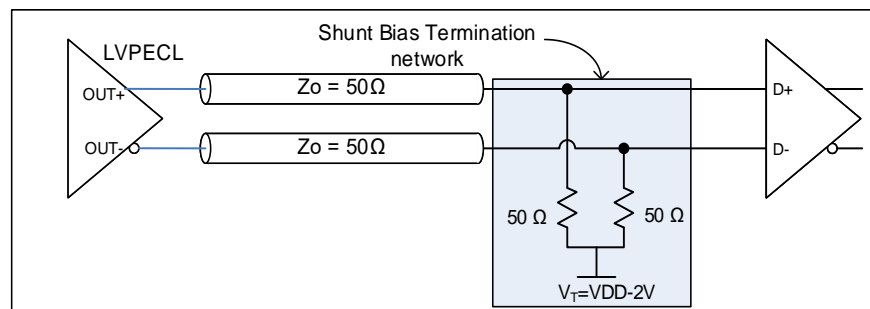


Figure 14. LVPECL with DC-coupled parallel shunt load termination

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Termination Diagrams (continued)

LVDS

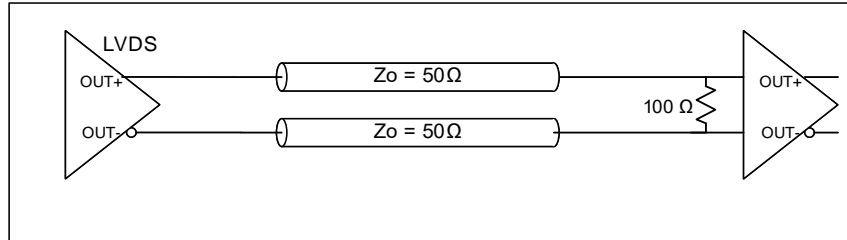


Figure 15. LVDS single DC termination at the load

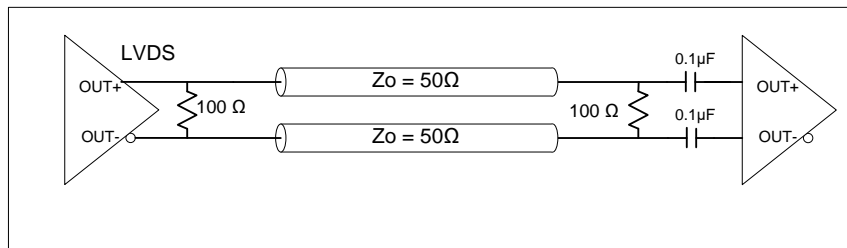


Figure 16. LVDS double AC termination with capacitor close to the load

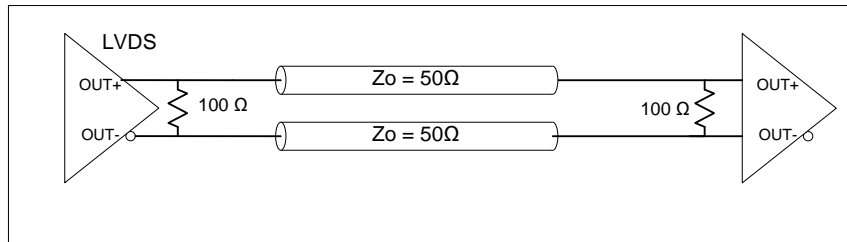


Figure 17. LVDS double DC termination

HCSL

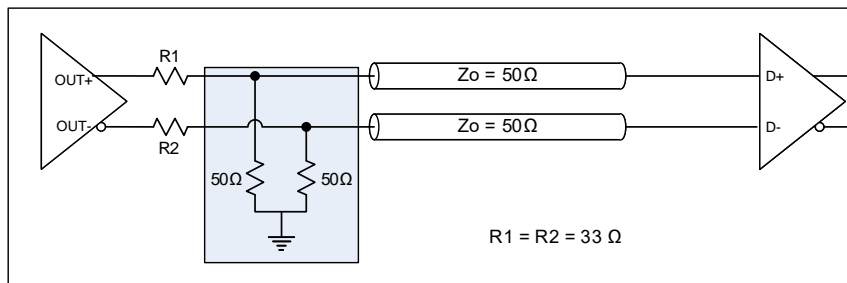


Figure 18. HCSL interface termination

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Dimensions and Patterns — 3.2 x 2.5 mm

| Package Size – Dimensions (Unit: mm) ^[13] | Recommended Land Pattern (Unit: mm) ^[14] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-------------|-------|-------|-----|-----------------|---|-------|-------|-------|-----------|----|-------|-------|-------|-----------|---|-------------|--|--|---|-------------|--|--|------------|---|-------|-------|-------|---|-------|-------|-------|-------------|----|-----------|--|--|---|-----------|--|--|-------------------|-----|-------|--|--|---------------|-----|-------|--|--|-------------|-----|-------|--|--|--------------|---|-----------|--|--|---------------|---|-----------|--|--|--------------|----|-----------|--|--|-----------------|--|---------|-------------------------|----------------------|--|--------------------|--|-----------------------------------|
| <p>3.2 x 2.5 x 0.85 mm</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>SYMBOL</th> <th>MIN</th> <th>NOM</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>TOTAL THICKNESS</td> <td>A</td> <td>0.800</td> <td>0.850</td> <td>0.900</td> </tr> <tr> <td>STAND OFF</td> <td>A1</td> <td>0.000</td> <td>0.035</td> <td>0.050</td> </tr> <tr> <td rowspan="2">BODY SIZE</td> <td>X</td> <td colspan="3">D 3.200 BSC</td> </tr> <tr> <td>Y</td> <td colspan="3">E 2.500 BSC</td> </tr> <tr> <td rowspan="2">LEAD WIDTH</td> <td>b</td> <td>0.550</td> <td>0.600</td> <td>0.650</td> </tr> <tr> <td>L</td> <td>0.650</td> <td>0.700</td> <td>0.750</td> </tr> <tr> <td rowspan="2">LEAD LENGTH</td> <td>L1</td> <td colspan="3">0.800 REF</td> </tr> <tr> <td>e</td> <td colspan="3">1.100 BSC</td> </tr> <tr> <td>PACKAGE TOLERANCE</td> <td>aaa</td> <td colspan="3">0.100</td> </tr> <tr> <td>MOLD FLATNESS</td> <td>bbb</td> <td colspan="3">0.100</td> </tr> <tr> <td>COPLANARITY</td> <td>ccc</td> <td colspan="3">0.080</td> </tr> <tr> <td>DIMPLE WIDTH</td> <td>T</td> <td colspan="3">0.150 REF</td> </tr> <tr> <td>DIMPLE LENGTH</td> <td>P</td> <td colspan="3">0.150 REF</td> </tr> <tr> <td>DIMPLE DEPTH</td> <td>A2</td> <td colspan="3">0.100 REF</td> </tr> </tbody> </table> <p>Notes: 1. All dimensions are in millimeters</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="2" style="text-align: center;">Package Outline</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">6L PQFD</td> <td style="text-align: center;">POD-038-PQFD-006-C03225</td> </tr> <tr> <td colspan="2" style="text-align: center;">3,200x2,500x0,850 mm</td> </tr> <tr> <td colspan="2" style="text-align: center;">2021/07/15 Rev C00 </td> </tr> </tbody> </table> | | SYMBOL | MIN | NOM | MAX | TOTAL THICKNESS | A | 0.800 | 0.850 | 0.900 | STAND OFF | A1 | 0.000 | 0.035 | 0.050 | BODY SIZE | X | D 3.200 BSC | | | Y | E 2.500 BSC | | | LEAD WIDTH | b | 0.550 | 0.600 | 0.650 | L | 0.650 | 0.700 | 0.750 | LEAD LENGTH | L1 | 0.800 REF | | | e | 1.100 BSC | | | PACKAGE TOLERANCE | aaa | 0.100 | | | MOLD FLATNESS | bbb | 0.100 | | | COPLANARITY | ccc | 0.080 | | | DIMPLE WIDTH | T | 0.150 REF | | | DIMPLE LENGTH | P | 0.150 REF | | | DIMPLE DEPTH | A2 | 0.100 REF | | | Package Outline | | 6L PQFD | POD-038-PQFD-006-C03225 | 3,200x2,500x0,850 mm | | 2021/07/15 Rev C00 | | <p>3.2 x 2.5 x 0.85 mm</p> |
| | SYMBOL | MIN | NOM | MAX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL THICKNESS | A | 0.800 | 0.850 | 0.900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STAND OFF | A1 | 0.000 | 0.035 | 0.050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BODY SIZE | X | D 3.200 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Y | E 2.500 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LEAD WIDTH | b | 0.550 | 0.600 | 0.650 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L | 0.650 | 0.700 | 0.750 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LEAD LENGTH | L1 | 0.800 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | e | 1.100 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PACKAGE TOLERANCE | aaa | 0.100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MOLD FLATNESS | bbb | 0.100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COPLANARITY | ccc | 0.080 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE WIDTH | T | 0.150 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE LENGTH | P | 0.150 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE DEPTH | A2 | 0.100 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Package Outline | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6L PQFD | POD-038-PQFD-006-C03225 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3,200x2,500x0,850 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021/07/15 Rev C00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Dimensions and Patterns — 5.0 x 3.2 mm

| Package Size – Dimensions (Unit: mm) ^[13] | Recommended Land Pattern (Unit: mm) ^[14] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-------------|-------|-------|-----|-----------------|---|-------|-------|-------|-----------|----|-------|-------|-------|-----------|---|-------------|--|--|---|-------------|--|--|---------|---|-------|-------|-------|---|-------|-------|-------|------------|---|-------|-------|-------|---|-------|-------|-------|-------------|----|-----------|--|--|---|-----------|--|--|-------------------|-----|-------|--|--|---------------|-----|-------|--|--|-------------|-----|-------|--|--|--------------|---|-----------|--|--|---------------|---|-----------|--|--|--------------|----|-----------|--|--|-----------------|--|---------|-------------------------|----------------------|--|--------------------|--|--|
| <p>5.0 x 3.2 x 0.85 mm^[15]</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>SYMBOL</th> <th>MIN</th> <th>NOM</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>TOTAL THICKNESS</td> <td>A</td> <td>0.800</td> <td>0.850</td> <td>0.900</td> </tr> <tr> <td>STAND OFF</td> <td>A1</td> <td>0.000</td> <td>0.035</td> <td>0.050</td> </tr> <tr> <td rowspan="2">BODY SIZE</td> <td>X</td> <td colspan="3">D 5.000 BSC</td> </tr> <tr> <td>Y</td> <td colspan="3">E 3.200 BSC</td> </tr> <tr> <td rowspan="2">EP SIZE</td> <td>X</td> <td>3.100</td> <td>3.200</td> <td>3.300</td> </tr> <tr> <td>Y</td> <td>0.500</td> <td>0.600</td> <td>0.700</td> </tr> <tr> <td rowspan="2">LEAD WIDTH</td> <td>b</td> <td>0.590</td> <td>0.640</td> <td>0.690</td> </tr> <tr> <td>L</td> <td>0.850</td> <td>0.900</td> <td>0.950</td> </tr> <tr> <td rowspan="2">LEAD LENGTH</td> <td>L1</td> <td colspan="3">1.000 REF</td> </tr> <tr> <td>e</td> <td colspan="3">1.270 BSC</td> </tr> <tr> <td>PACKAGE TOLERANCE</td> <td>aaa</td> <td colspan="3">0.100</td> </tr> <tr> <td>MOLD FLATNESS</td> <td>bbb</td> <td colspan="3">0.100</td> </tr> <tr> <td>COPLANARITY</td> <td>ccc</td> <td colspan="3">0.080</td> </tr> <tr> <td>DIMPLE WIDTH</td> <td>T</td> <td colspan="3">0.300 REF</td> </tr> <tr> <td>DIMPLE LENGTH</td> <td>P</td> <td colspan="3">0.150 REF</td> </tr> <tr> <td>DIMPLE DEPTH</td> <td>A2</td> <td colspan="3">0.100 REF</td> </tr> </tbody> </table> <p>Notes: 1. Dimensioning and tolerancing conform to ASME Y14.5-2009 2. All dimensions are in millimeters</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="2" style="text-align: center;">Package Outline</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">6L PQFV</td> <td style="text-align: center;">POD-PGFV-006-C05032-039</td> </tr> <tr> <td colspan="2" style="text-align: center;">5,000x3,200x0,850 mm</td> </tr> <tr> <td colspan="2" style="text-align: center;">2019/03/13 Rev 800 </td> </tr> </tbody> </table> | | SYMBOL | MIN | NOM | MAX | TOTAL THICKNESS | A | 0.800 | 0.850 | 0.900 | STAND OFF | A1 | 0.000 | 0.035 | 0.050 | BODY SIZE | X | D 5.000 BSC | | | Y | E 3.200 BSC | | | EP SIZE | X | 3.100 | 3.200 | 3.300 | Y | 0.500 | 0.600 | 0.700 | LEAD WIDTH | b | 0.590 | 0.640 | 0.690 | L | 0.850 | 0.900 | 0.950 | LEAD LENGTH | L1 | 1.000 REF | | | e | 1.270 BSC | | | PACKAGE TOLERANCE | aaa | 0.100 | | | MOLD FLATNESS | bbb | 0.100 | | | COPLANARITY | ccc | 0.080 | | | DIMPLE WIDTH | T | 0.300 REF | | | DIMPLE LENGTH | P | 0.150 REF | | | DIMPLE DEPTH | A2 | 0.100 REF | | | Package Outline | | 6L PQFV | POD-PGFV-006-C05032-039 | 5,000x3,200x0,850 mm | | 2019/03/13 Rev 800 | | <p>5.0 x 3.2 x 0.85 mm^[15]</p> |
| | SYMBOL | MIN | NOM | MAX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL THICKNESS | A | 0.800 | 0.850 | 0.900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STAND OFF | A1 | 0.000 | 0.035 | 0.050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BODY SIZE | X | D 5.000 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Y | E 3.200 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EP SIZE | X | 3.100 | 3.200 | 3.300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Y | 0.500 | 0.600 | 0.700 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LEAD WIDTH | b | 0.590 | 0.640 | 0.690 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L | 0.850 | 0.900 | 0.950 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LEAD LENGTH | L1 | 1.000 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | e | 1.270 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PACKAGE TOLERANCE | aaa | 0.100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MOLD FLATNESS | bbb | 0.100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COPLANARITY | ccc | 0.080 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE WIDTH | T | 0.300 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE LENGTH | P | 0.150 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE DEPTH | A2 | 0.100 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Package Outline | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6L PQFV | POD-PGFV-006-C05032-039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5,000x3,200x0,850 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2019/03/13 Rev 800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes:

13. Top Marking: Y denotes manufacturing origin and XXXX denotes manufacturing lot number. The value of “Y” will depend on the assembly location of the device.
14. A capacitor of value 0.1 μF or higher between VDD and GND is required. An additional 10 μF capacitor between VDD and GND is required for the best phase jitter performance.
15. The center pad is internally connected to the GND pin. Soldering down the center pad to the GND is recommended for best thermal dissipation, but is optional.

SiT3373 220 MHz to 725 MHz Ultra-low Jitter Differential VCXO

Dimensions and Patterns — 7.0 x 5.0 mm

| Package Size – Dimensions (Unit: mm) ^[16] | Recommended Land Pattern (Unit: mm) ^[17] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-----------|-------|-------|-----|-----------------|---|-------|-------|-------|-----------|----|-------|-------|-------|-----------|---|-----------|--|--|---|-----------|--|--|---------|---|-------|-------|-------|---|-------|-------|-------|------------|---|-------|-------|-------|---|-------|-------|-------|-------------|----|-----------|--|--|------------|---|-----------|--|--|-------------------|-----|-------|--|--|---------------|-----|-------|--|--|------------|-----|-------|--|--|--------------|---|-----------|--|--|---------------|---|-----------|--|--|--------------|----|-----------|--|--|-----------------|--|---------|-------------------------|----------------------|--|--------------------|--|--|
| <p>7.0 x 5.0 x 0.85 mm^[18]</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>SYMBOL</th> <th>MIN</th> <th>NOM</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>TOTAL THICKNESS</td> <td>A</td> <td>0.800</td> <td>0.850</td> <td>0.900</td> </tr> <tr> <td>STAND OFF</td> <td>A1</td> <td>0.000</td> <td>0.035</td> <td>0.050</td> </tr> <tr> <td rowspan="2">BODY SIZE</td> <td>X</td> <td colspan="3">7.000 BSC</td> </tr> <tr> <td>Y</td> <td colspan="3">5.000 BSC</td> </tr> <tr> <td rowspan="2">EP SIZE</td> <td>X</td> <td>3.400</td> <td>3.500</td> <td>3.600</td> </tr> <tr> <td>Y</td> <td>1.400</td> <td>1.500</td> <td>1.600</td> </tr> <tr> <td rowspan="2">LEAD WIDTH</td> <td>b</td> <td>1.350</td> <td>1.400</td> <td>1.450</td> </tr> <tr> <td>L</td> <td>0.850</td> <td>0.900</td> <td>0.950</td> </tr> <tr> <td>LEAD LENGTH</td> <td>L1</td> <td colspan="3">1.000 REF</td> </tr> <tr> <td>LEAD PITCH</td> <td>e</td> <td colspan="3">2.540 BSC</td> </tr> <tr> <td>PACKAGE TOLERANCE</td> <td>aaa</td> <td colspan="3">0.100</td> </tr> <tr> <td>MOLD FLATNESS</td> <td>bbb</td> <td colspan="3">0.100</td> </tr> <tr> <td>COPLANRITY</td> <td>ccc</td> <td colspan="3">0.080</td> </tr> <tr> <td>DIMPLE WIDTH</td> <td>T</td> <td colspan="3">0.300 REF</td> </tr> <tr> <td>DIMPLE LENGTH</td> <td>P</td> <td colspan="3">0.150 REF</td> </tr> <tr> <td>DIMPLE DEPTH</td> <td>A2</td> <td colspan="3">0.100 REF</td> </tr> </tbody> </table> <p>Notes: 1. Dimensioning and tolerancing conform to ASME Y14.5-2009 2. All dimensions are in millimeters</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="2" style="text-align: center;">Package Outline</th> </tr> </thead> <tbody> <tr> <td style="width: 50%;">6L PQFV</td> <td style="width: 50%;">POD-PQFV-006-C07050-037</td> </tr> <tr> <td colspan="2" style="text-align: center;">7,000x5,000x0,850 mm</td> </tr> <tr> <td colspan="2" style="text-align: center;">2019/03/13 Rev 800 </td> </tr> </tbody> </table> | | SYMBOL | MIN | NOM | MAX | TOTAL THICKNESS | A | 0.800 | 0.850 | 0.900 | STAND OFF | A1 | 0.000 | 0.035 | 0.050 | BODY SIZE | X | 7.000 BSC | | | Y | 5.000 BSC | | | EP SIZE | X | 3.400 | 3.500 | 3.600 | Y | 1.400 | 1.500 | 1.600 | LEAD WIDTH | b | 1.350 | 1.400 | 1.450 | L | 0.850 | 0.900 | 0.950 | LEAD LENGTH | L1 | 1.000 REF | | | LEAD PITCH | e | 2.540 BSC | | | PACKAGE TOLERANCE | aaa | 0.100 | | | MOLD FLATNESS | bbb | 0.100 | | | COPLANRITY | ccc | 0.080 | | | DIMPLE WIDTH | T | 0.300 REF | | | DIMPLE LENGTH | P | 0.150 REF | | | DIMPLE DEPTH | A2 | 0.100 REF | | | Package Outline | | 6L PQFV | POD-PQFV-006-C07050-037 | 7,000x5,000x0,850 mm | | 2019/03/13 Rev 800 | | <p>7.0 x 5.0 x 0.85 mm^[18]</p> <p>Note: Circles in center pad are thermal vias, recommended to improve thermal performance</p> |
| | SYMBOL | MIN | NOM | MAX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL THICKNESS | A | 0.800 | 0.850 | 0.900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STAND OFF | A1 | 0.000 | 0.035 | 0.050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BODY SIZE | X | 7.000 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Y | 5.000 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EP SIZE | X | 3.400 | 3.500 | 3.600 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Y | 1.400 | 1.500 | 1.600 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LEAD WIDTH | b | 1.350 | 1.400 | 1.450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | L | 0.850 | 0.900 | 0.950 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LEAD LENGTH | L1 | 1.000 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LEAD PITCH | e | 2.540 BSC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PACKAGE TOLERANCE | aaa | 0.100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MOLD FLATNESS | bbb | 0.100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COPLANRITY | ccc | 0.080 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE WIDTH | T | 0.300 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE LENGTH | P | 0.150 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMPLE DEPTH | A2 | 0.100 REF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Package Outline | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6L PQFV | POD-PQFV-006-C07050-037 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7,000x5,000x0,850 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2019/03/13 Rev 800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes:

16. Top Marking: Y denotes manufacturing origin and XXXX denotes manufacturing lot number. The value of “Y” will depend on the assembly location of the device.
17. A capacitor of value 0.1 μ F or higher between VDD and GND is required. An additional 10 μ F capacitor between VDD and GND is required for the best phase jitter performance.
18. The center pad is internally connected to the GND pin. Soldering down the center pad to the GND is recommended for best thermal dissipation, but is optional.

SiT3373 220 MHz to 725 MHz Ultra-low Jitter Differential VCXO

Table 11. APR Table

 Absolute pull range (APR) = Nominal pull range (PR) - frequency stability (F_stab) - aging^[19]

| Nominal Pull Range | Frequency Stability | | | |
|--------------------|---------------------|-------|-------|-------|
| | ±15 | ±25 | ±35 | ±50 |
| | APR (ppm) | | | |
| ±25 | ±5 | — | — | — |
| ±50 | ±30 | ±20 | ±10 | — |
| ±80 | ±60 | ±50 | ±40 | ±25 |
| ±100 | ±80 | ±70 | ±60 | ±45 |
| ±150 | — | ±120 | ±110 | ±95 |
| ±200 | — | ±170 | ±160 | ±145 |
| ±400 | — | ±370 | ±360 | ±345 |
| ±800 | — | ±770 | ±760 | ±745 |
| ±1600 | — | ±1570 | ±1560 | ±1545 |
| ±3200 | — | ±3170 | ±3160 | ±3145 |

Note:

19. Aging includes solder down shift and 20-year aging.

Additional Information
Table 12. Additional Information

| Document | Description | Download Link |
|--|--|---|
| ECCN #: EAR99 | Five character designation used on the commerce Control List (CCL) to identify dual use items for export control purposes. | — |
| HTS Classification Code: 8542.39.0000 | A Harmonized Tariff Schedule (HTS) code developed by the World Customs Organization to classify/define internationally traded goods. | — |
| Part number Generator | Tool used to create the part number based on desired features. | https://www.sitime.com/part-number-generator |
| Time Machine II | MEMS oscillator programmer | http://www.sitime.com/support/time-machine-oscillator-programmer |
| Manufacturing Notes | Tape & Reel dimension, reflow profile and other manufacturing related info | https://www.sitime.com/sites/default/files/gated/Manufacturing-Notes-for-SiTime-Products.pdf |
| Qualification Reports | RoHS report, reliability reports, composition reports | http://www.sitime.com/support/quality-and-reliability |
| Performance Reports | Additional performance data such as phase noise, current consumption, and jitter for selected frequencies | http://www.sitime.com/support/performance-measurement-report |
| Termination Techniques | AN10029 Termination design recommendations | http://www.sitime.com/support/application-notes |
| Layout Techniques | AN10006 Layout recommendations | http://www.sitime.com/support/application-notes |
| Evaluation Boards | SiT6085EB, SiT6086EB and SiT6097EB for Differential Oscillators | https://www.sitime.com/support/user-guides |


SiT3373 220 MHz to 725 MHz Ultra-low Jitter Differential VCXO

Revision History
Table 13. Revision History

| Revision | Release Date | Change Summary |
|----------|--------------|--|
| 1.0 | 13-Oct-2017 | Initial release |
| 1.01 | 2-Feb-2018 | Corrected ppm ordering codes. Corrected minor formatting errors. Added Additional Information table. Added Extended Industrial temperature range (-40°C – 95°C and -40°C – 105°C) |
| 1.03 | 10-May-2018 | Updated the Part Ordering info with added 5.0 x 3.2 mm package |
| 1.04 | 29-Oct-2018 | ±15 ppm option |
| 1.05 | 7-Jun-2020 | Formatting updates Corrected typos Updated package Dimensions Drawings Updated Table 8 Thermal Considerations for 5032 package Added Evaluation Boards SiT6085EB reference in Additional Information Rearranged layout, added Description, Block Diagram and TOC Added HTS classification code Clarified ±15 ppm pull range up to ±100 ppm Modified maximum junction temperatures Removed I_driver HCSL specification as not applicable |
| 1.06 | 17-Mar-2021 | Updated L1 and Dimple Width package dimensions for 3.2 x 2.5 mm package Updated trademarks and changed rev table date format |
| 1.07 | 20-Jul-2021 | Updated pin direction in package dimensions for 3.2 x 2.5 mm package |

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