

Typical Applications

Base Stations
 Test Equipment
 Telecom & Wireless Infrastructure
 Digital Switching

Features

9X14 J Leaded Surface Mount Package
 Reflow Process Compatible Optional
 ACмос, TTL and LVPECL

Previous Corning Model Numbers

MC044, MC344, MC046, MC346, MC047, MC347,
 MC049, MC349, MC048, MC318, MC328, and MC348

Frequency range

1.0 to 800.0 MHz (ACмос/TTL available up to 125 MHz.
 LVPECL frequencies above 220 MHz are achieved through use of PLL
 or analog multiplier)

Standard frequencies

19.44, 32.768, 44.736, 51.84, 77.76, 155.52, 622.08 MHz

Frequency stabilities¹

| Parameter | Min | Typ | Max. | Units | Condition | Ordering Code ⁵ |
|--|-----|-----|------|-------|----------------------------------|----------------------------|
| vs. operating temperature range (Referenced to +25°C) | 0 | | +70 | °C | | C-xxx F-xxx |
| | -45 | | +85 | °C | | |
| Supply voltage change | -2 | | +2 | ppm | V _s ± 5% Load ± 5% | |
| vs. load change | -1 | | +1 | ppm | | |
| vs. aging /1 Year | -5 | ±3 | +5 | ppm | | |
| vs. aging / year (following Years) | -1 | | +1 | ppm | | |

Supply voltage (Vs)

| Parameter | Min | Typ | Max. | Units | Condition | Ordering Code ⁵ |
|-----------------------|-------|-----|-------|-------|---------------------------|----------------------------|
| Supply voltage | 4.75 | 5 | 5.25 | VDC | | SV050 |
| Current consumption | | | 15 | mA | ACмос/TTL 1.0 to 23.9 MHz | |
| | | | 20 | mA | ACмос/TTL 24 to 49.9 MHz | |
| | | | 40 | mA | ACмос/TTL 50 to 80.0 MHz | |
| | | | 100 | mA | LVPECL No load | |
| Supply voltage | 3.135 | 3.3 | 3.465 | VDC | | SV033 |
| Current consumption | | | 6 | mA | ACмос 1.0 to 14.90 MHz | |
| | | | 8 | mA | ACмос 15.0 TO 39.9 MHz | |
| | | | 12 | mA | ACмос 40.0 TO 59.9 MHz | |
| | | | 16 | mA | ACмос 60.0 TO 79.9 MHz | |
| | | | 60 | mA | ACмос 80.0 to 125.0 MHz | |
| | | | 100 | mA | LVPECL No load | |

RF output

| Parameter | Min | Typ | Max. | Units | Condition | Ordering Code ⁵ |
|--|--------------|-----|------|-------|---|----------------------------|
| Signal | ACмос | | | | | RFA |
| Load | | 15 | 50 | pF | | |
| Signal Level (Vol) | | | 0.5 | VDC | V _s = 5.0V and 15pF load V _s =3.3V and 15pF load | |
| | | | 0.3 | VDC | | |
| Signal Level (Voh) | 4.5 | | | VDC | V _s = 5.0V and 15pF load V _s =3.3V and 15pF load | |
| | 3.0 | | | VDC | | |
| Rise and fall times for ACмос (measured 10% to 90%) | | | 10 | ns | 1.0 to 23.9 MHz | |
| | | | 5 | ns | 24.0 to 79.9 MHz | |
| | | | 3 | ns | 80.0 to 125.0MHz | |
| Duty cycle | 45 | | 55 | % | @ 50% V _s < 15 MHz | |
| | 40 | | 60 | % | @ 50% V _s ≥ 15 MHz | |

| Signal | TTL | | | | RFT |
|--------|-----|--|----|--|-----|
| Load | | | 10 | | |

**Vectron International,
 LLC**

100 Watts Street
 Mount Holly Springs PA
 17065

t 717 486 3411
 f 717 486 5920

www.vectron.co
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|--|--------------------|--|-------------|------------|--|
| Signal Level (Vol) | | | 0.5 | VDC | Vs= 5.0V and 15pF load Vs= 5.0V and 15pF load 1.0 to 23.9 MHz 24 to 125 MHz @ 1.4V < 15 MHz @ 1.4V ≥ 15 MHz |
| Signal Level (Voh) | 4.5 | | | VDC | |
| Rise and fall times for TTL (measured 0.8V to 2.0V) | | | 5 3 | ns ns | |
| Duty Cycle | 45 40 | | 55 60 | % % | |
| Signal | PECL/LVPECL | | | RFP | |
| Load | | | 50 | Ω | Into Vs-2V or Thevenin Equivalent |
| Signal Level (Vol) | | | Vs -1.62 | VDC | |
| Signal Level (Voh) | Vs- 1.025 | | | VDC | |
| Start-up Time | | | 10 | mS | |
| Rise and fall times (measured @ 20% to 80%) | | | 1000 600 | ps ps | <100 MHz ≥ 100 MHz |
| Duty cycle LVPECL | 45 | | 55 | % | @ 50% Vdd |
| | 40 | | 60 | % | @ 50% Vdd |
| Jitter (rms) | | | 5 | ps | BW = 10Hz to 20 MHz |
| | | | 1 | ps | BW = 12 kHz to 20 MHz |
| Period Jitter (pk-pk) | | | 40 | ps | 10,000 samples- Rising edge |

Frequency Tuning (EFC)

| Parameter | Min | Typ | Max. | Units | Condition | Ordering Code |
|-----------------------|----------|------|------|-------|----------------|---------------|
| Absolute Pull Range | | ±30 | | ppm | | AP033 |
| | | ±50 | | ppm | | AP050 |
| Linearity | | 10 | 15 | % | | |
| Tuning Slope | Positive | | | | | |
| Control Voltage Range | 0.5 | 2.5 | 4.5 | VDC | with Vs=5.0VDC | |
| | 0.3 | 1.65 | 3.0 | VDC | with Vs=3.3VDC | |

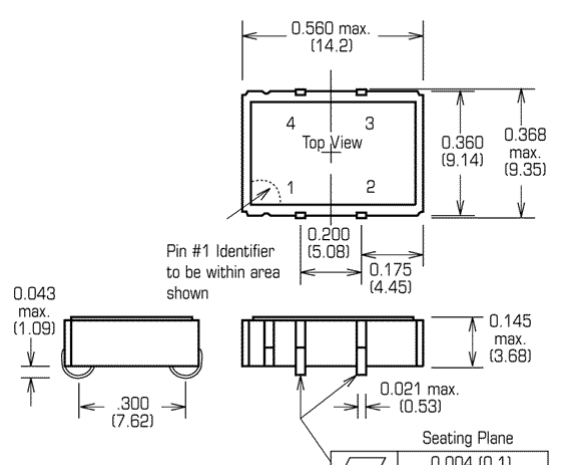
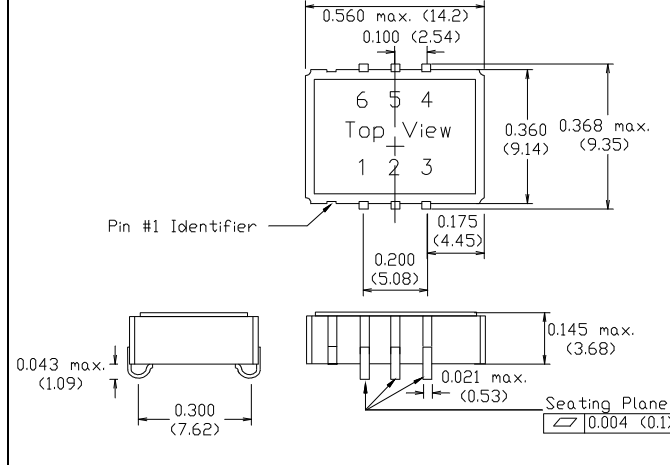
Additional parameters

| Parameter | Min | Typ | Max. | Units | Condition | |
|----------------------------|---|-----|------|--------|--------------------|-----------------------|
| Phase Noise ³ | | | -60 | dBc/Hz | 10 Hz | Measured @ 52.00 MHz |
| | | | -90 | dBc/Hz | 100 Hz | |
| | | | -120 | dBc/Hz | 1 kHz | |
| | | | -140 | dBc/Hz | 10 kHz | |
| | | | -145 | dBc/Hz | 100 kHz | |
| | | | -50 | dBc/Hz | 10 Hz | Measured @ 155.52 MHz |
| | | | -80 | dBc/Hz | 100 Hz | |
| | | | -110 | dBc/Hz | 1 kHz | |
| | | | -133 | dBc/Hz | 10 kHz | |
| | | | -145 | dBc/Hz | 100 kHz | |
| Weight | | | | g | | |
| Processing & Packing | Handling & processing note | | | | | |
| Output Enable ⁶ | Logic "0" input = Outputs disabled (Tri-state) Logic "1" or floating input = Outputs enabled | | | | ACMOS/TTL Output | |
| | Logic "0" or floating input = Outputs enabled Logic "1" input = Outputs disabled (Tri-state) | | | | PECL/LVPECL Output | |
| Weight | | | <2 | g | | |
| Processing & Packing | Handling & processing note | | | | | |

Absolute Maximum Ratings

| Parameter | Min | Typ | Max. | Units | Condition |
|----------------------------|-----|-----|------|-------|-----------|
| Supply voltage (Vs) | | | 7.0 | V | Vs=5.0VDC |
| | | | 7.0 | V | Vs=3.3VDC |
| Operable temperature range | -55 | | +85 | °C | |
| Storage temperature range | -55 | | +125 | °C | |

Enclosures

| Type A - AC MOS/TTL | | | Type B - AC MOS/TTL | | |
|---|------------------------|------------------------|---|------------------------|------------------------|
| Package Codes: | | | | | |
| Code A1 | Height "H" .368 max | Pin Length "L" 1.09 | Code B1 E2 = Enable/Disable pin 2 X = N/C pin 2 | Height "H" .368 max | Pin Length "L" 1.09 |
| <p style="text-align: center;">Dimensions: Inches (mm)</p>  | | |  | | |
| Pin Connections | | | Pin Connections | | |
| 1 Control Voltage 2 Ground (Case) 3 RF Output 4 Supply Voltage | | | 1 Control Voltage 2 Enable/Disable or N/C 3 Ground (Case) 4 RF Output 5 N/C 6 Supply Voltage | | |

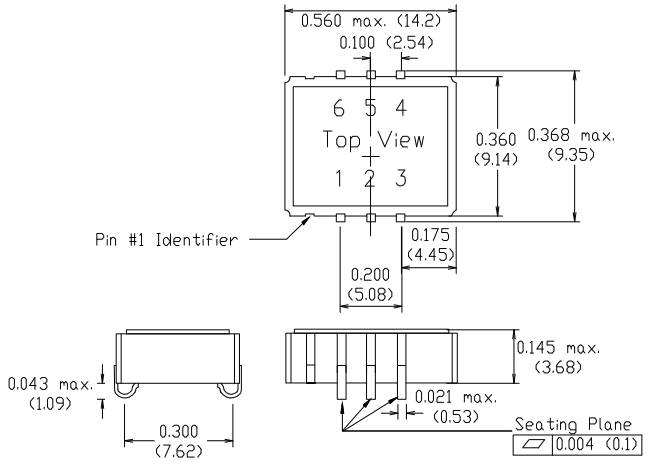
Type C - PECL/LVPECL

Vectron International, LLC

100 Watts Street
 Mount Holly Springs PA
 17065

t 717 486 3411
 f 717 486 5920

www.vectron.co
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| Package Codes: | | |
|---|------------------------|------------------------|
| Code C1 E2 = Enable/Disable pin 2 X = N/C pin 2 | Height "H" .368 max | Pin Length "L" 1.09 |
|  | | |
| Pin Connections | | |
| 1 Control Voltage 2 Enable/Disable or NC 3 Ground (Case) 4 RF Output 5 Complementary Output 6 Supply Voltage | | |

How to Order this Product:

| | | | | | | |
|----------------|--|--------------|------------------------------------|--------------|----------------|-----------|
| Step 1 | Use this worksheet to forward the following information to your factory representative: | | | | | |
| Model | Supply Voltage Code | Output Code | APR Code | Package Code | Enable/Disable | |
| C5300 | | | | | | |
| <i>Example</i> | <i>C5300</i> | <i>SV050</i> | <i>RFA</i> | <i>AP050</i> | <i>A1</i> | <i>E1</i> |
| Step 2 | The factory representative will then respond with a Corning Model Number in the following Configuration: | | | | | |
| Model | Package Code | Dash | Dash Number | | | |
| C5300 | [Customer Specified Package Code] | - | [Factory Generated 4 digit number] | | | |

Typical P/N C5300A1-001

Notes:

- 1 Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
- 2 Unless otherwise stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C)
- 3 Phase noise degrades increasing output frequency.
- 4 Subject to technical modification.
- 5 Contact factory for availability.
- 6 Contact factory for other options.