

## Typical Applications

Military Systems  
Avionics and Instrumentation  
Test Equipment  
Medical Equipment

## Features

5X7 Surface Mount Package  
Reflow Process Compatible  
ACMOS, TTL, LVPECL and LVDS  
MIL-PRF-55310 Class B Screening (optional)  
Military Operating Temperature Range (optional)

## Frequency Range

**1 to 800 MHz** (ACMOS and TTL outputs available up to 125 MHz. LVPECL and LVDS output frequencies above 220 MHz are achieved through the use of a PLL multiplier.)

## Frequency Stabilities<sup>1</sup>

Parameter	Min	Typ	Max	Units	Condition	Ordering Code <sup>5</sup>
Operating temperature range (referenced to +25°C)	-100		+100	ppm	0 ... +70°C	<b>C104</b>
	-50		+50	ppm	0 ... +70°C	<b>C505</b>
	-25		+25	ppm	0 ... +70°C	<b>C255</b>
	-15		+15	ppm	0 ... +70°C	<b>C155</b>
	-100		+100	ppm	-40 ... +85°C	<b>F104</b>
	-50		+50	ppm	-40 ... +85°C	<b>F505</b>
	-25		+25	ppm	-40 ... +85°C	<b>F255</b>
	-100		+100	ppm	-55 ... +125°C	<b>M104</b>
	-65		+65	ppm	-55 ... +125°C	<b>M655</b>
	Initial accuracy (do not use with overall tolerance code below)	-15		+15	ppm	@ 25°C
-25			+25	ppm	@ 25°C	<b>T255</b>
-50			+50	ppm	@ 25°C	<b>T505</b>
-100			+100	ppm	@ 25°C	<b>T104</b>
Parameter	Min	Typ	Max	Units	Condition	Ordering Code <sup>5</sup>
Overall tolerance (includes operating temperature and initial accuracy) <sup>7</sup>	-100		+100	ppm	0 ... +70°C	<b>TC104</b>
	-50		+50	ppm	0 ... +70°C	<b>TC505</b>
	-25		+25	ppm	0 ... +70°C	<b>TC255</b>
	-100		+100	ppm	-40 ... +85°C	<b>TF104</b>
	-50		+50	ppm	-40 ... +85°C	<b>TF505</b>
	-100		+100	ppm	-55 ... +125°C	<b>TM104</b>
	-80		+80	ppm	-55 ... +125°C	<b>TM805</b>
Additional stability parameters: vs. Supply voltage change vs. Load change vs. Aging / 1st year vs. Aging / year (following years)	-2		+2	ppm	V <sub>S</sub> ± 5%	
	-1		+1	ppm	Load ± 5%	
	-3		+3	ppm		
	-1		+1	ppm		

## Supply Voltage (Vs)

Parameter	Min	Typ	Max	Units	Condition	Ordering Code <sup>5</sup>
<b>Supply voltage</b>	4.75	5.0	5.25	VDC		<b>SV050</b>
Current consumption (+5 VDC)			15	mA	ACMOS or TTL 1.0 to 23.9 MHz	
			20	mA	ACMOS or TTL 24 to 49.9 MHz	
			40	mA	ACMOS or TTL 50 to 125.00 MHz	
<b>Supply voltage</b>	3.135	3.3	3.465	VDC		<b>SV033</b>
<b>Supply voltage</b>	2.375	2.5	2.625	VDC		<b>SV025</b>
Current consumption (+3.3 VDC or +2.5 VDC)			6	mA	ACMOS 1.0 to 14.90 MHz	
			8	mA	ACMOS 15.0 to 39.9 MHz	
			16	mA	ACMOS 40.0 to 84.9 MHz	
			40	mA	ACMOS 85.0 to 125.0 MHz	
			75	mA	LVPECL or LVDS No load <200 MHz	
			100	mA	LVPECL or LVDS No load >200 MHz	

## RF Output

Parameter	Min	Typ	Max	Units	Condition	Ordering Code <sup>5</sup>
<b>Signal</b>	<b>ACMOS</b>					<b>RFA</b>
Load		15	50	pF		
Signal Level (Vol)			0.5 0.3 0.25	VDC VDC VDC	Vs= 5.0V and 15pF load Vs=3.3V and 15pF load Vs=2.5V and 15pF load	
Signal Level (Voh)	4.5 3.0 2.25			VDC VDC VDC	Vs= 5.0V and 15pF load Vs=3.3V and 15pF load Vs=2.5V and 15pF load	
Rise and fall times for ACMOS (measured 10% to 90%)			10 6 3	ns ns ns	1.0 to 23.9 MHz 24.0 to 79.9 MHz 80.0 to 125.0MHz	
Duty cycle	45 40		55 60	% %	@ 50% Vs < 15 MHz @ 50% Vs > 15 MHz	
<b>Signal</b>	<b>TTL</b>					<b>RFT</b>
Load			10			
Signal Level (Vol)			0.4	VDC	Vs= 5.0V and 15pF load	
Signal Level (Voh)	2.4			VDC	Vs= 5.0V and 15pF load	
Rise and fall times for TTL (measured 0.8V to 2.0V)			5 3	ns ns	1.0 to 23.9 MHz 24 to 125 MHz	
Duty Cycle	45 40		55 60	% %	@ 1.4V < 15 MHz @ 1.4V ≥ 15 MHz	
<b>Signal</b>	<b>LVPECL</b>					<b>RFP</b>
Load			50	Ω	Into Vcc-2V or Thevenin Equivalent	
Signal Level (Vol)			Vs -1.62	VDC	-40 ... +85°C operating temp	
Signal Level (Voh)	Vs- 1.025			VDC	-40 ... +85°C operating temp	
Rise and fall times (measured @ 20% to 80%)			1000 600	ps ps	<100 MHz ≥ 100 MHz	
Duty cycle LVPECL	45		55	%	@ 50% Vdd	
Jitter (rms)			10 0.5	ps ps	BW = 10Hz to 20 MHz BW = 12 kHz to 20 MHz	
Period Jitter (pk-pk)			40	ps	10,000 Samples - Rising edge	
<b>Signal</b>	<b>LVDS</b>					<b>RFL</b>
Load	60	100	140	Ω	Between outputs	
Signal Level (Vol)		1.2		VDC		
Signal Level (Voh)		1.4		VDC		
Differential Voltage (Vod)	240	330	460	mVpeak		
Common Mode (Offset) Voltage (Vos)	1.125	1.2	1.375	V		
Start-up Time			10	mS		
Rise and fall times		600	1000	ps	measured @ 20% to 80% of Vod	
Duty cycle	45		55	%	@ 50% of Vod	
Jitter (rms)			5 1	ps ps	BW = 10Hz to 20 MHz BW = 12 kHz to 20 MHz	
Period Jitter (pk-pk)			40	ps	10,000 Samples - Rising edge	

## Additional Parameters

Screening	Vectron Verification <sup>9</sup>		V
Screening	Class B, MIL-PRF-55310, Rev.D		B
Output Enable <sup>6</sup>	Logic "0" input = Outputs disabled (Tri-state) Logic "1" or floating input = Outputs enabled)		Standard ACMOS, TTL and LVDS
	Logic "0" or floating input = Outputs enabled Logic "1" input = Outputs disabled (Tri-state)		Standard LVPECL
Weight	< 2 grams		
Processing & Packing	Handling & processing note		

Note: Overall package thickness tolerance will be increases from +/- .007 to +/- .015 when I/O p

## How to Order this Product: <sup>10</sup>

Step 1 Use this worksheet to forward the following information to your factory representative (example follows):								
Model	Stability Code	Initial Accuracy Code (if required)	Supply Voltage Code	RF Output Code	Screening Code	Package Code	Enable/Disable Code	Tinning Code
C1250	C505	T505	SV033	RFA	V	A1	E1	T

Step 2 The factory representative will then respond with a Vectron Part Number in the following configuration:			
Model	Package Code	Dash	Dash Number
C1250	[Customer Specified Package Code]	-	[Factory Generated 4 digit number]

Typical P/N C1250A1-0001

### Notes:

- 1 Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies, RF outputs and supply voltages.
- 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 with increasing output frequency.
- 4 Subject to technical modification.
- 5 Contact factory for availability.
- 6 Contact factory for other options.
- 7 Overall stabilities do not require an initial accuracy code.
- 8 Leads tinned IAW Vectron International standard procedure (GR-37409).
- 9 Vectron Verification IAW Vectron International standard process (HK-69314).
- 10 Please be sure to specify nominal frequency.