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[1]

Parameter	Min	Typ	Max	Units	Condition	Ordering Code[5]
Operating temperature range (referenced to +25°C)	-100		+100	ppm	0 … +70°C	**C104**
	-50		+50	ppm	0 … +70°C	**C505**
	-25		+25	ppm	0 … +70°C	**C255**
	-15		+15	ppm	0 … +70°C	**C155**
	-100		+100	ppm	-40 … +85°C	**F104**
	-50		+50	ppm	-40 … +85°C	**F505**
	-25		+25	ppm	-40 … +85°C	**F255**
	-100		+100	ppm	-55 … +125°C	**M104**
	-65		+65	ppm	-55 … +125°C	**M655**
Initial accuracy (do not use with overall tolerance code below)	-15		+15	ppm	@ 25°C	**T155**
	-25		+25	ppm	@ 25°C	**T255**
	-50		+50	ppm	@ 25°C	**T505**
	-100		+100	ppm	@ 25°C	**T104**
Parameter	**Min**	**Typ**	**Max**	**Units**	**Condition**	**Ordering Code[5]**
Overall tolerance (includes operating temperature and initial accuracy)[7]	-100		+100	ppm	0 … +70°C	**TC104**
	-50		+50	ppm	0 … +70°C	**TC505**
	-25		+25	ppm	0 … +70°C	**TC255**
	-100		+100	ppm	-40 … +85°C	**TF104**
	-50		+50	ppm	-40 … +85°C	**TF505**
	-100		+100	ppm	-55 … +125°C	**TM104**
	-80		+80	ppm	-55 … +125°C	**TM805**
Additional stability parameters:						
vs. Supply voltage change	-2		+2	ppm	V_S ± 5%	
vs. Load change	-1		+1	ppm	Load ± 5%	
vs. Aging / 1st year	-3		+3	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	5.0	5.25	VDC		**SV050**
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	
Supply voltage	3.135	3.3	3.465	VDC		**SV033**
Supply voltage	2.375	2.5	2.625	VDC		**SV025**
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	
			12	mA	ACMOS 40.0 to 59.9 MHz	
			16	mA	ACMOS 60.0 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	

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RF Output

Parameter	Min	Typ	Max	Units	Condition	Ordering Code[5]
Signal	**ACMOS**					**RFA**
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	
Signal	**TTL**					**RFT**
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	
Signal	**LVPECL**					**RFP**
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	
Signal	**LVDS**					**RFL**
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**[9]	**V**
Screening	**Class B, MIL-PRF-55310, Rev.D**	**B**
Output Enable[6]	Logic "0" input = Outputs disabled (Tri-state) Logic "1" or floating input = Outputs enabled)	Standard (All outputs)
	Logic "0" or floating input = Outputs enabled Logic "1" input = Outputs disabled (Tri-state)	Custom (Contact factory for availability)
Weight	< 2 grams	
Processing & Packing	Handling & processing note	

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Standard Environmentals

Parameter	Test Condition
Vibration	MIL-STD-202, Method 204, Condition G (30 G, 10Hz-2000Hz)
Shock	MIL-STD-202, Method 213, Condition I (100 G, 6ms, Sawtooth)
Acceleration	MIL-STD-883, Method 2001, Condition A (5000 G, Y1 Plane)
Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Thermal Shock	MIL-STD-883, Method 107, Condition B
Solderability	MIL-STD-202, Method 208
Leak Test (Fine and Gross)	MIL-STD-883, Method 1014, Condition A1 and C1

Absolute Maximum Ratings

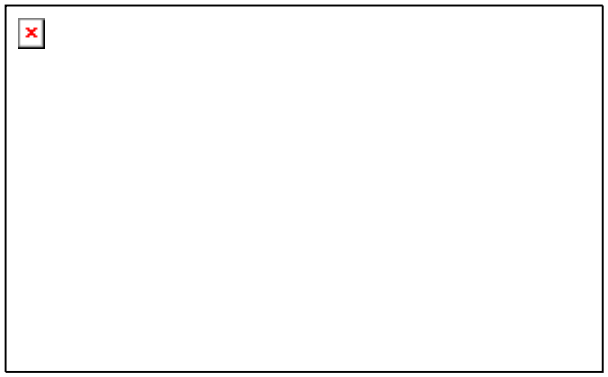
Parameter	Min	Typ	Max	Units	Condition
Supply voltage (Vs)			7.0	V	Vs=5.0VDC
			7.0	V	Vs=3.3VDC
Operable temperature range	-55		+125	℃	
Storage temperature range	-62		+125	℃	

Enclosures

Type A – ACMOS or TTL

Package Codes:

Codes	Height	
A1 = 4 leads	0.074 ± 0.007 (1.88 ± 0.178)	
E1 = Enable/Disable pin 1 **X** = N/C pin 1		
T= Tinned leads [8] **X**= No Tinning		

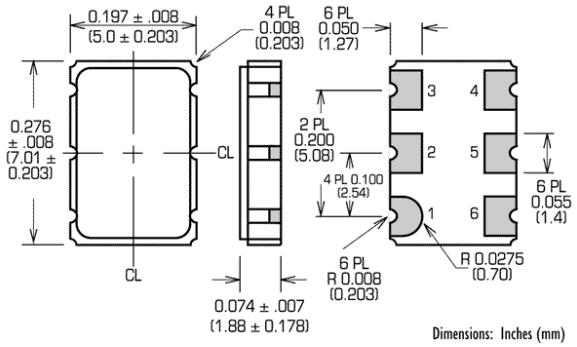


Pin Connections

1 – Enable/Disable or N/C	3 – RF Output
2 – Ground (case)	4 – Supply Voltage

Type B – LVPECL or LVDS

Codes	Height	
B1 = 6 leads	0.074 ± 0.007 (1.88 ± 0.178)	
E1 = Enable/Disable pin 1 **E2** = Enable/Disable pin 2 **X** = N/C pin 1 and pin 2		
T= Tinned leads [8] **X** = No Tinning		



Pin Connections

1 – Enable/Disable or N/C	4 – RF Output
2 – N/C	5 – Complementary Output
3 – Ground (Case)	6 – Supply Voltage

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How to Order this Product: [10]

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℃).
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.

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