

VF194/VF294

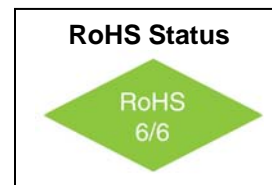
VCXO Low Jitter 3.3V

5x7mm SMD, HCMOS/TTL



Features

- TRISTATE
- 1.5MHz to 77.76MHz Frequency Range
- <1.0ps RMS Jitter over 12KHz to 20MHz
- APR min ± 50 ppm



Applications

- Standard and High Definition Video
- 10 Gbit Ethernet
- Optical Networking

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		1.5		160.00	MHz	
Frequency Stability	$\Delta F/F$	Vs. Operating Temperature			± 25	ppm	
Operating Temperature	T		0° -40°		+70° +85°	°C	Order Code 1
Supply Voltage	Vcc		4.75 3.15	5.00 3.30	5.25 3.45	V	Standard LV Opt.
Supply Current	Icc	No load			30	mA	
Voltage Control	Vc	Vcc = 5.0V Vcc = 3.3V	0 0		5.0 3.3	V	
APR			± 50			ppm	
Jitter RMS 12KHz to 20MHz	1σ			<1.0		ps	
Input Impedance		fm<10KHz	50			KOhm	
Phase Noise		100 Hz 1 KHz 10 KHz 100 KHz 1 MHz		-95 -125 -147 -155 -155	-90 -120 -142 -150 -150		@ 40.96 MHz
Start-up Time	Ts			2	10	ms	
Enable/Disable Time					100	ns	
Duty Cycle		@1.4V	40 45	50 50	60 55	%	5% optional

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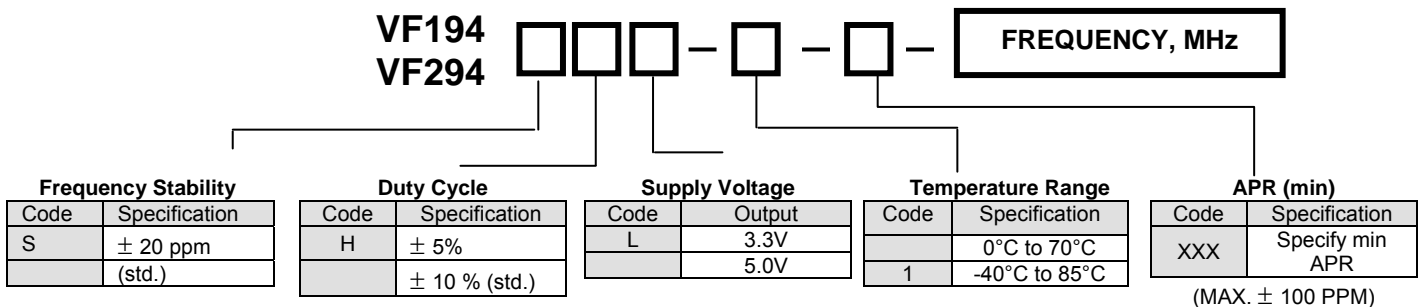
Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Modulation BW	fm	@Vc = 2.5V	10			KHz	@-3db
Deviation Slope		Monotonic, positive		50		ppm/V	
Linearity					± 20	%	
Setability (Vc for center freq)	Vc0	@25°C, Fnominal	2.00 1.25	2.50 1.65	3.00 2.05	V	5.0V 3.3V
Load	10 TTL gates or 50pF						
Output High Voltage	V _{OH}	Max Load	0.9V _{cc}			V	
Output Low Voltage	V _{OL}	Max Load			0.1V _{cc}	V	
Rise/Fall Time	Tr/Tf	20% to 80% 0.4V to 2.4V			6 4	ns	
Tristate	Input HIGH (>2.5V) or floating: Input LOW (<0.5V):		ACTIVE INFINITE IMPEDANCE				

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Lead Temperature		Soldering, 90s max			+230°	°C	
Storage Temperature	Ts		-55		+125°	°C	
Supply Voltage	Vc		-1		9	V	

How to Order



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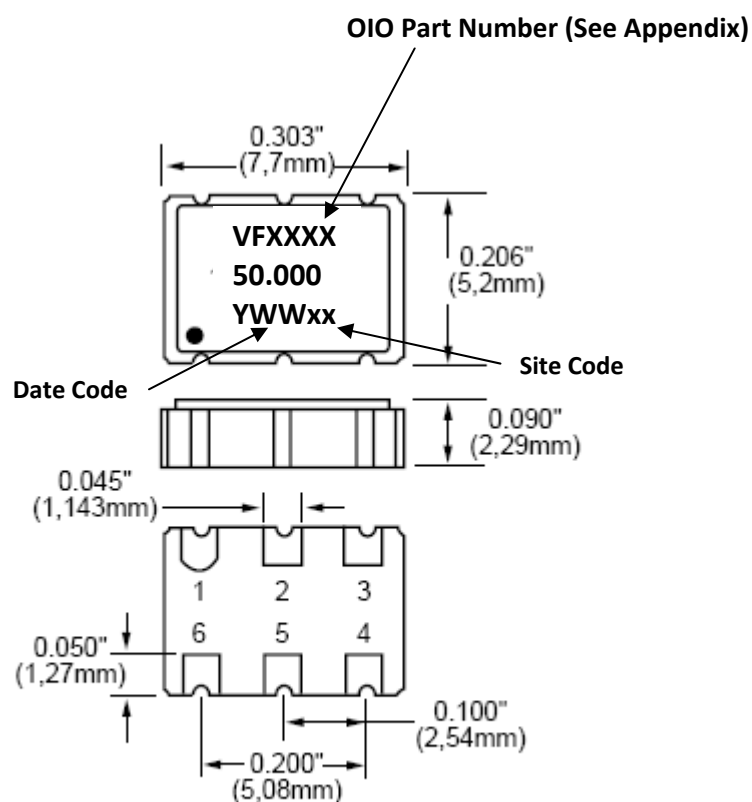
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Environmental and Mechanical Conditions

Parameter	Specification
Mechanical Shock	Per MIL-STD-202, Method 213, Cond. E
Thermal Shock	Per MIL-STD-883, Method 1011, Cond. A
Vibration	Per MIL-STD-883, Method 2007, Cond. A
Hermetic Seal	Leak rate less than 5×10^{-8} atm.cc/s of helium



VF194 Pin Connections

Pin #	Connections
1	Vc
2	N/C
3	Ground, Case
4	Output
5	Tristate
6	Vcc

VF294 Pin Connections

Pin #	Connections
1	Vc
2	Tristate
3	Ground, Case
4	Output
5	N/C
6	Vcc

All dimensions are typical unless otherwise specified.

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Appendix

4 - Digit part numbers are used for marking.

SN	PART NUMBER	ORDERING CODE
1	OIO3038	VF294L-34.3680MHZ
2	OIO3045	VF194SHL-1-T-44.7360MHZ
3	OIO3048	VF194H-1-1.5440MHZ
4	OIO3050	VF294L-1-100-20.000
5	OIO3051	VF194HL-1-50-12.352MHZ
6	OIO3090	VF294L-100-34.528MHZ
7	OIO3091	VF294L-1-44.736MHZ
8	OIO3132	VF194HL-1-50-32.768MHZ
9	OIO3133	VF294L-1-77.760MHZ
10	OIO3143	VF194L-1-100-32.768MHZ
11	OIO3144	VF294L-1-100-32.768MHZ
12	OIO3145	VF294HL-100-27.648MHZ
13	OIO3151	VF294L-1.544MHZ
14	OIO3171	VF294L-120-14.31818MHZ
15	OIO3193	VF194L-50-56.0000MHZ
16	OIO3205	VF294L-50-51.840MHZ
17	OIO3222	VF294L-50-56.0000MHZ
18	OIO3225	VF294SL-80-38.880MHZ
19	OIO3227	VF294L-80-38.880MHZ
20	OIO3228	VF294H-100-27.0000MHZ
21	OIO3229	VF294BH-100-27.0000MHZ
22	OIO3237	VF194H-1-50-16.3840MHZ
23	OIO3238	VF194H-1-50-18.9440MHZ
24	OIO3239	VF194-33.8688MHZ
25	OIO3247	VF194L-54.0000MHZ
26	OIO3267	VF194HL-1-100-35.328MHZ
27	OIO3269	VF294L-50-2.0480MHZ
28	OIO3284	VF294-100-8.0640MHZ T/R
29	OIO3289	VF294L-1-61.4400MHZ
30	OIO3298	VF294-1-24.7040MHZ-T/R
31	OIO3329	VF194L-50.0000MHZ
32	OIO3337	VF294-1-100-67.5840MHZ
33	OIO3342	VF294HL-1-100-35.3280MHZ
34	OIO3349	VF294-1-100-20.0000MHZ
35	OIO3352	VF294HL-19.4400MHZ
36	OIO3358	VF294HL-1-19.4400MHZ
37	OIO3365	VF194L-1-100-20.0000MHZ
38	OIO3367	VF194-1-44.7360MHZ
39	OIO3368	VF194L-100-9.7200MHZ
40	OIO3369	VF194L-100-2.0480MHZ

SN	PART NUMBER	ORDERING CODE
41	OIO3370	VF194L-100-1.5440MHZ
42	OIO3371	VF194-1-100-44.7360MHZ
43	OIO3372	VF194H-40.0000MHZ
44	OIO3381	VF294HL-1-38.880MHz
45	OIO3382	VF294SHL-1-100-2.0480MHZ
46	OIO3383	VF294SHL-1-100-1.5440MHZ
47	OIO3384	VF294SHL-1-100-19.44MHZ
48	OIO3390	VF194HL-1-38.8800MHZ
49	OIO3391	VF194-3.3280MHZ
50	OIO3392	VF294HL-100-38.8800MHZ
51	OIO3411	VF194HL-1-2.0480MHZ
52	OIO3413	VF294-1-44.7360MHZ
53	OIO3414	VF194L-40.0000MHZ
54	OIO3422	VF294L-27.0000MHZ
55	OIO3435	VF294HL-1-100-2.0480MHZ
56	OIO3436	VF294HL-1-100-19.4400MHZ
57	OIO3464	VF294HL-1.5440MHZ
58	OIO3495	VF194HL-1-50-1.5440MHZ
59	OIO3496	VF194HL-1-50-35.3280MHZ
60	OIO3548	VF194L-50-74.2500MHZ
61	OIO3549	VF194L-50-74.17582MHZ
62	OIO3550	VF194L-1-50-74.2500MHZ
63	OIO3559	VF294L-100-20.4800MHZ
64	OIO3564	VF294SL-100-20.4800MHZ
65	OIO3614	VF294SL-100-34.368 MHz
66	OIO3615	VF294SL-100-44.736 MHz
67	OIO3652	VF194-38.880 MHz
68	OIO3678	VF294H-20.480 MHz
69	OIO3684	VF294L-50.000 MHz T/R
70	OIO3703	VF194H-27.000MHz
71	OIO3756	VF194SL-50-77.760MHz
72	OIO3773	VF294H-1-25.00MHZ
73	OIO3775	VF294SL-100-19.440MHz-TR
74	OIO3777	VF194L-50-10.000MHz
75	OIO3799	VF194HL-1-50-25.000MHz
76	OIO3805	VF194-100-11.289MHz
77	OIO3806	VF194-100-12.288MHz
78	OIO3852	VF194L-100-11.289MHz
79	OIO3860	VF194H-38.880MHz
80	OIO3861	VF294H-100-2.048MHz

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81	OIO3862	VF294H-100-1.544MHZ
82	OIO3880	VF194HL-1-100-19.440MHZ
83	OIO3885	VF194H-1-16.992MHZ
84	OIO3889	VF294-1-55.296MHZ
85	OIO3904	VF294L-1-80.000MHZ
86	OIO3921	VF194-1-100-8.000MHZ
87	OIO3930	VF194S-1-10.0MHZ
88	OIO3943	VF294SH-100-19.44MHZ
89	OIO3954	VF294-55.2960MHZ
90	OIO3961	VF294SH-100-27.000MHZ
91	OIO3994	VF294SHL-1-35.328MHZ
92	OIO5805	VF294-77.760 MHz
93	OIO5901	VF294L-38.7853MHZ
94	OIO6145	VF294L-32-44.7360MHZ
95	OIO6148	VF294L-32-2.0480MHZ
96	OIO6183	VF294HL-27.0000MHZ
97	OIO6320	VF294SHL-19.4400MHZ
98	OIO6458	VF194HL-19.4400MHZ
99	OIO6467	VF194L-1-4.0960MHZ
100	OIO6479	VF194-1-34.3680MHZ-T/R
101	OIO6487	VF194HL-44.7360MHZ
102	OIO6490	VF294-44.7360MHZ
103	OIO6495	VF194-22.5792MHZ
104	OIO6511	VF294-1.5440MHZ
105	OIO6519	VF294-2.0480MHZ
106	OIO6547	VF294BH-150-14.31818MHZ
107	OIO6550	VF194HL-1.5440MHZ
108	OIO6562	VF294L-1-32.7680MHZ
109	OIO6572	VF294L50-27.0000MHZ
110	OIO6698	VF294-50-44.7360MHZT/R
111	OIO6764	VF194-24.5760MHZ
112	OIO6765	VF194-27.0000MHZ
113	OIO6783	VF194HL-2.0480MHZ
114	OIO6796	VF194HL-19.4400MHZ
115	OIO6941	VF194SHL-1-38.8800MHZ
116	OIO6985	VF194H-19.4400MHZ
117	OIO7001	VF294L-1-100-44.7360MHZ
118	OIO7011	VF194HL-1-50-19.4400MHZ
119	OIO7028	VF294-8.0640MHZ
120	OIO7031	VF294L-1-32.0000MHZ

SN	PART NUMBER	ORDERING CODE
121	OIO7042	VF194-49.1520MHZ
122	OIO7046	VF194SL-1-38.8800MHZ
123	OIO7070	VF294SL-100-19.4400MHZ
124	OIO7080	VF294L-50.0000MHZ
125	OIO7087	VF294L-100-27.0000MHZ
126	OIO7090	VF294SHL-1-80-1.5440MHZ
127	OIO7091	VF294SHL-1-80-2.0480MHZ
128	OIO7098	VF294BL-100-60.0000MHZ
129	OIO7108	VF294L-50-74.2500MHZ
130	OIO7109	VF294L-50-74.175824MHZ
131	OIO7111	VF194-1-100-16.0000MHZ
132	OIO7117	VF194L-1-32.0000MHZ
133	OIO7154	VF194H-1-37.95762MHZ
134	OIO7155	VF194SHL-100-20.4800MHZ
135	OIO7160	VF194HL-1-61.44MHZ
136	OIO7162	VF294-50-54.000MHZ
137	OIO7163	VF294-50-74.250MHZ
138	OIO7164	VF294-50-74.176MHZ
139	OIO7184	VF194SL-1-32-24.576MHZ
140	OIO7187	VF194L-100-54.0000MHZ
141	OIO7220	VF294L-74.1758MHZ
142	OIO7221	VF294L-74.25MHZ
143	OIO7247	VF194-75-74.1758MHZ
144	OIO7248	VF194-75-74.250MHZ
145	OIO7259	VF294-1-100-27.00MHZ
146	OIO7308	VF194L-100-92.00MHZ
147	OIO7414	VF294SL-1-100-39.200MHZ
148	OIO7415	VF294SL-1-100-19.440MHZ
149	OIO7416	VF194HL-100-20.000MHZ
150	OIO7428	VF194HL-1-100-33.333333MHZ
151	OIO7507	VF294-1-50.00MHZ
152	OIO7508	VF294HL-1-2.048MHZ
153	OIO7517	VF294-1-100-10.000MHZ
154	OIO7520	VF294L-10.00MHZ
155	OIO7524	VF194HL-1-50-80.000MHZ
156	OIO7545	VF294L-19.2MHz
157	OIO7552	VF194HL-1-80-33.333333MHZ
158	OIO7557	VF294SHL-1-80-25.000MHZ
159	OIO7573	VF294L-27.00MHZ
160	OIO7608	VF294HL-2.048MHz

