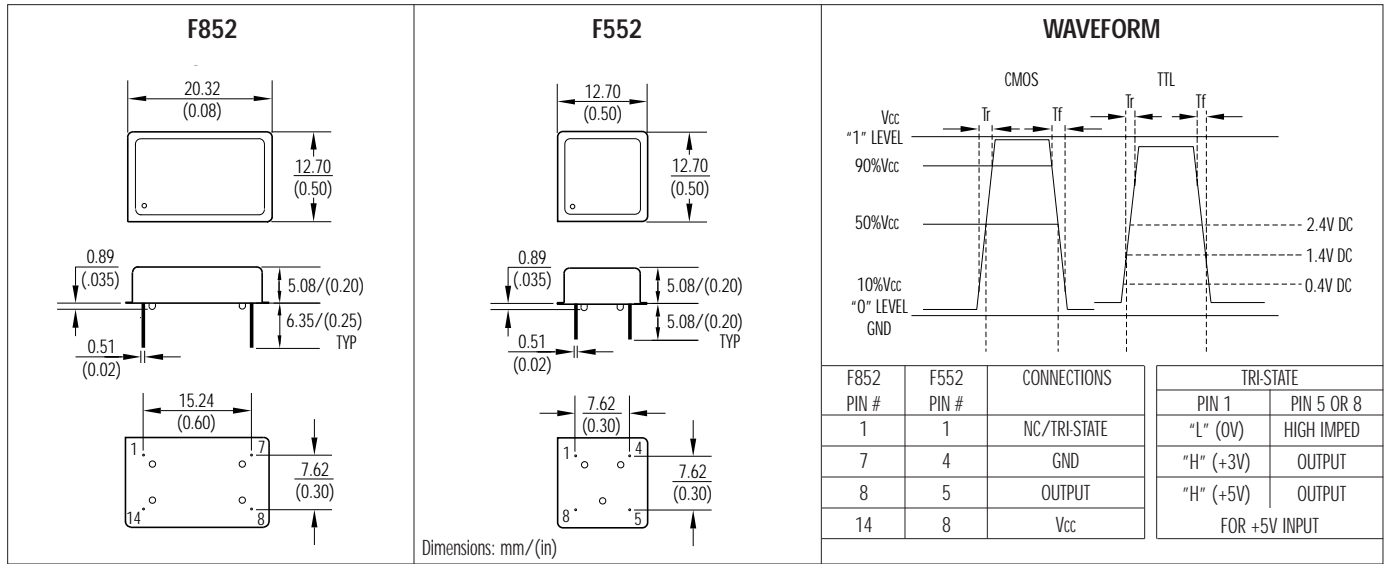




CLOCK OSCILLATORS STANDARD



SPECIFICATIONS	HCMOS/TTL	TTL	CMOS
1. FREQUENCY STABILITY	± 100 ppm, ± 50 ppm, ± 25 ppm Consult factory for custom requirements		
2. OPERATING TEMP.	0°C to +70°C Consult factory for extended temperature range		
3. STORAGE TEMP.	-55°C to 125°C		
4. RISE & FALL TIME	3 nS 5 to 9 nS Frequency and logic dependent		
5. SYMMETRY	60 - 40% at VDD ÷ 2 55 - 45% at 1.4V Typ.	60 - 40% at 1.4V Typ.	60 - 40% at VDD ÷ 2 55 - 45% at 1.4V Typ.
6. "0" LEVEL	0.5V max	0.4V max	0.5V max
7. "1" LEVEL	2.4V min, Vcc - 0.5 Typ.	2.4V min	Vcc - 0.5V Typ.
8. INPUT VOLTAGE	+5.0 V DC ± 0.5V, 3.3 V DC ± 0.4V		
9. INPUT CURRENT	10 mA to 50 mA	15 mA to 50 mA	6 mA to 20 mA
10. OUTPUT LOAD	1 to 10 TTL or 15PF to 50PF	1 to 10 TTL 1 to 10 LSTTL	15PF to 50PF

PART NUMBER — ORDERING METHOD

FILTRONETICS CLOCK OSCILLATOR MODELS	OUTPUT LOGIC	—	SUPPLY VOLTAGE OPTIONS	TEMPERATURE STABILITY	TRI-STATE OPTION	—	FREQUENCY RANGE
F852 F552	HT: HCMOS/TTL PC: PURE CMOS PT: PURE TTL	—	3: 3.3V DC 5: 5.0V DC	100: ± 100 ppm 050: ± 50 ppm 025: ± 25 ppm	* T: TRISTATE N: N/A * Available on Pin 1	—	* 1 KHz to 135 MHz * Frequency range varies with each logic

F852	HT	—	3	100	T	—	20 MHz
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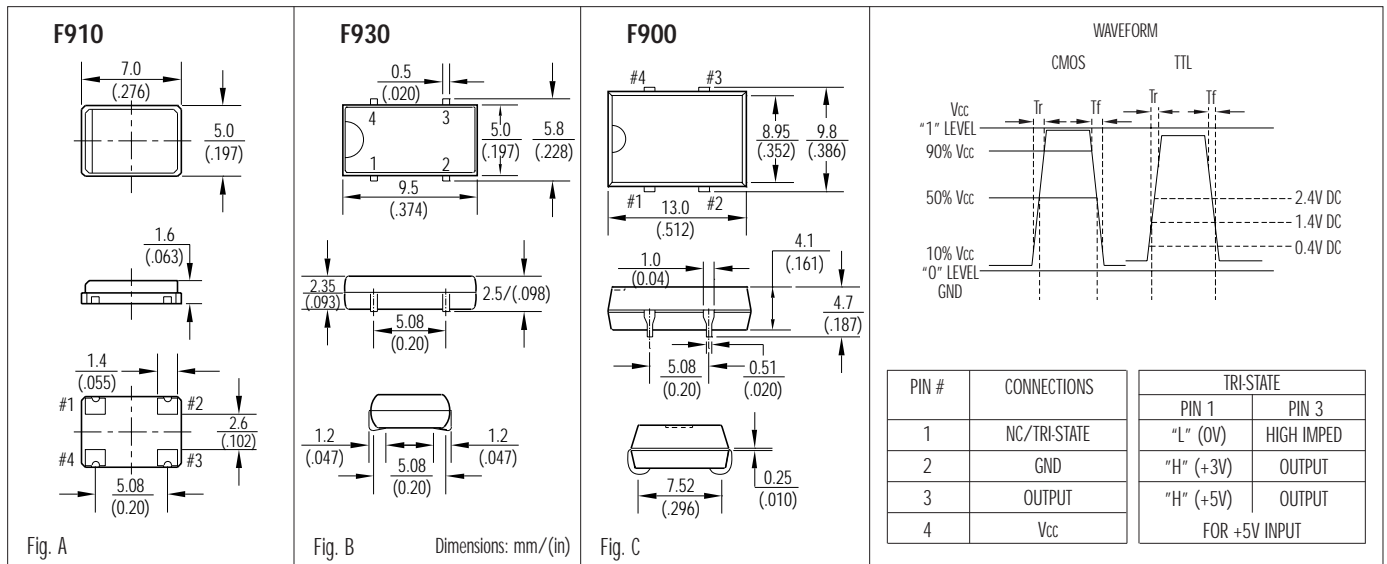
EXAMPLE:

F852HT-3100T-20MHz

FILTRONETICS INC.

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Phone (816) 231-7375 • Fax (816) 241-0368
www.filtro.net • E-mail: filtro@filtro.net

SMD CLOCK OSCILLATORS



SPECIFICATIONS	HCMOS/TTL	TTL	CMOS
1. FREQUENCY STABILITY	± 100 ppm, ± 50 ppm, ± 25 ppm Consult factory for custom requirements		
2. OPERATING TEMP.	0°C to +70°C Consult factory for extended temperature range		
3. STORAGE TEMP.	-55°C to 125°C		
4. RISE & FALL TIME	3 nS to 9 nS Frequency and logic dependent		
5. SYMMETRY	60 - 40% at VDD ÷ 2 Typ. 55 - 45% at 1.4V Typ.	60 - 40% at 1.4V Typ.	60 - 40% at VDD ÷ 2 Typ. 55 - 45% at 1.4V Typ.
6. "0" LEVEL	0.5V max	0.4V max	0.5V max
7. "1" LEVEL	2.4V min, Vcc - 0.5V Typ.	2.4V min	Vcc - 0.5V min
8. INPUT VOLTAGE	+5.0 V DC ± 0.5V, 3.3 V DC ± 0.4V		
9. INPUT CURRENT	10 mA to 50 mA	15 mA to 50 mA	10 mA to 50 mA
10. OUTPUT LOAD	1 to 10 TTL or 15 PF to 50 PF	1 to 10 TTL 1 to 10 LSTTL	15 PF to 50 PF

PART NUMBER — ORDERING METHOD

FILTRONETICS CLOCK OSCILLATOR MODELS	OUTPUT LOGIC	—	SUPPLY VOLTAGE OPTIONS	TEMPERATURE STABILITY	TRI-STATE OPTION	—	FREQUENCY RANGE
F910 F930 F900	HT: HCMOS/TTL PC: PURE CMOS PT: PURE TTL	—	3: 3.3V DC 5: 5.0V DC	100: ± 100 ppm 050: ± 50 ppm 025: ± 25 ppm	* T: TRISTATE N: N/A * Available on Pin 1	—	* 1 MHz to 80 MHz * Frequency range varies with the model number

F910	HT	—	3	100	T	—	20 MHz
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EXAMPLE:

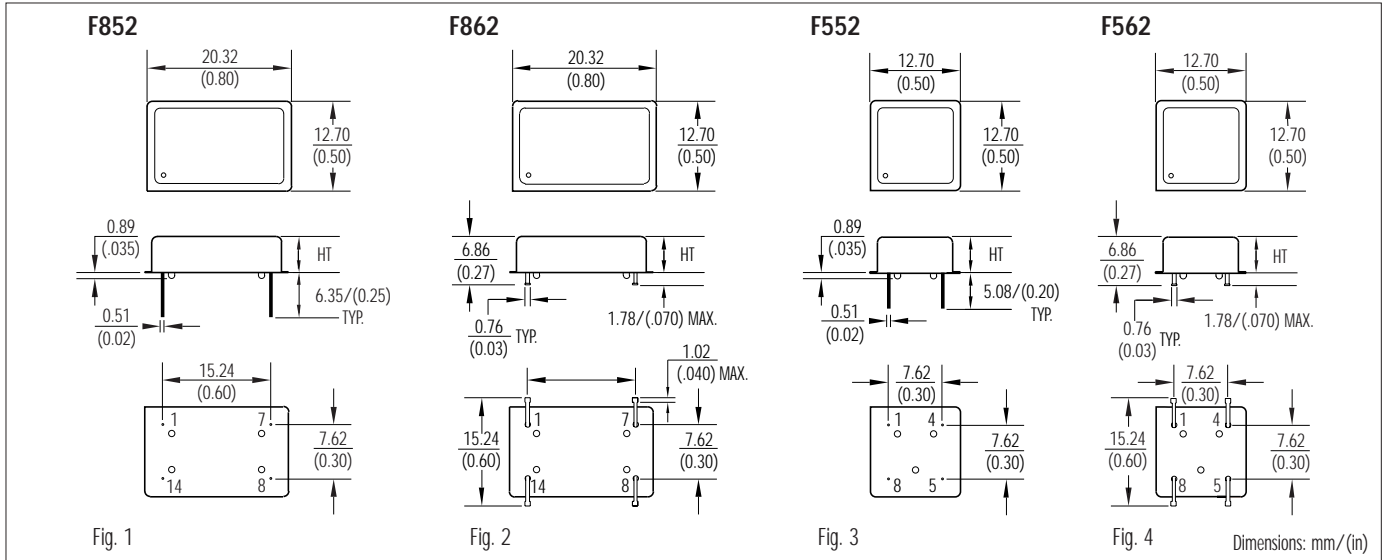
F910HT-3100T-20MHz

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Phone (816) 231-7375 • Fax (816) 241-0368
www.filtro.net • E-mail: filtro@filtro.net

CLOCK OSCILLATORS

ECL, -5.2 V



SPECIFICATIONS

1. **INPUT VOLTAGE** : -5.2 V ± 5%
2. **INPUT CURRENT** : 65 mA max., 40 mA Typical (varies with frequency)
3. **OUTPUT CHARACTERISTICS**
 - Voh : -0.98 V min.
 - Vol : -1.63 V max
 - Rise Time, Fall Time : < 2 nS Typ.
 - Load : 50 Ω into Vtt = -2.0 V (output must be loaded)
 - Symmetry : 45/55 to 55/45 at -1.32 V
4. **OPERATING TEMPERATURE** : 0°C to +70°C
5. **STORAGE TEMPERATURE** : -55°C to +125°C
6. **AGING** : 5 ppm/year typical
- * 7. **PACKAGE** : CRS nickel plated or stainless steel, hermetically sealed

* Consult factory for other environmental/mechanical specifications

PIN #		CONNECTIONS			
Fig. 1, 2	Fig. 3, 4	OPTION "A"	OPTION "B"	OPTION "C"	OPTION "D"
1	1	NC	COMP. OUT.	NC	COMP. OUT.
7	4	-5.2 V	-5.2 V	CASE-GND	CASE-GND
8	5	OUT	OUT	OUT	OUT
14	8	CASE-GND	CASE-GND	-5.2 V	-5.2 V

PART NUMBER - ORDERING METHOD

FILTRONETICS ECL CLOCK OSCILLATOR MODEL OPTIONS	PINOUT OPTIONS	LOGIC	—	FREQUENCY STABILITY OPTIONS	PULL-UP RESISTOR OPTION	—	FREQUENCY RANGE
F852 F862 F552 F562	A: Pin Option "A" B: Pin Option "B" C: Pin Option "C" D: Pin Option "D"	E: ECL, -5.2V	—	100 : ± 100 ppm 050 : ± 50 ppm 025 : ± 25 ppm	A: External B: Internal	—	5 MHz to 300MHz

F852	A	E	—	100	A	—	100 MHz
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EXAMPLE:

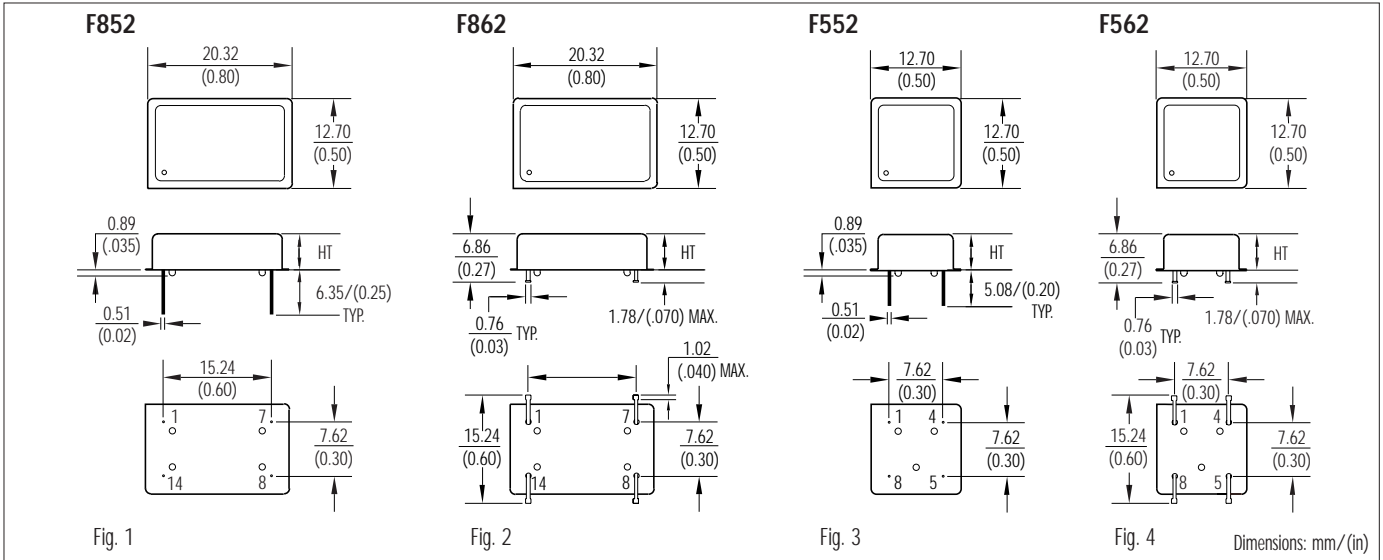
F852AE-100A-100MHz

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6010 Parretta Drive, Kansas City, MO 64120
 Phone (816) 231-7375 • Fax (816) 241-0368
 www.filtro.net • E-mail: filtro@filtro.net

CLOCK OSCILLATORS

PECL, +5.0 V



SPECIFICATIONS

1. **INPUT VOLTAGE** : +5.0 V \pm 5%
2. **INPUT CURRENT** : 65 mA max., 40 mA Typical (varies with frequency)
3. **OUTPUT CHARACTERISTICS**
 - Voh : 3.96 V min.
 - Vol : 3.40 V max
 - Rise Time, Fall Time : < 2 nS Typ.
 - Load : 50 Ω into Vtt = +3.0 V (output must be loaded)
 - Symmetry : 45/55 to 55/45 at 3.68 V
4. **OPERATING TEMPERATURE** : 0°C to +70°C
5. **STORAGE TEMPERATURE** : -55°C to +125°C
6. **AGING** : 5 ppm/year typical
- * 7. **PACKAGE** : CRS nickel plated or stainless steel, hermetically sealed

* Consult factory for other environmental/mechanical specifications

PIN #		CONNECTIONS	
Fig. 1, 2	Fig. 3, 4	OPTION "A"	OPTION "B"
1	1	NC	COMP. OUT.
7	4	CASE-GND	CASE-GND
8	5	OUT	OUT
14	8	+5.0 V	+5.0 V

PART NUMBER - ORDERING METHOD

FILTRONETICS PECL CLOCK OSCILLATOR MODEL OPTIONS	PINOUT OPTIONS	LOGIC	—	FREQUENCY STABILITY OPTIONS	PULL-UP RESISTOR OPTION	—	FREQUENCY RANGE
F852 F862 F552 F562	A: Pin Option "A" B: Pin Option "B"	P: ECL, +5V	—	100 : \pm 100 ppm 050 : \pm 50 ppm 025 : \pm 25 ppm	A: External B: Internal	—	5 MHz to 300MHz

F852	A	P	—	100	A	—	100 MHz
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EXAMPLE:

F852AP-100A-100MHz

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 Phone (816) 231-7375 • Fax (816) 241-0368
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TAPE AND REAL SPECIFICATIONS FOR SMD CRYSTALS AND CLOCKS

REAL SPECIFICATIONS (mm)

XTAL MODEL	A	B	C	D	E	F	G	H	I
865A	2.0	25.5	300	190	80.2	2.0	2.5	13.0	23.0
864H	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0
864A	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0
890A	2.0	25.5	330	190	80.0	2.0	2.5	13.0	23.0
910A	2.0	17.5	330	190	80.0	2.0	2.0	13.0	21.0
908A	2.0	17.5	329	190	100	2.0	2.0	13.0	21.0
909H	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0
909A	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0
921A	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0
920H	3.0	24.4	328	190	80.0	2.5	3.0	13.0	21.0
938H	2.0	16.0	250	-	80.0	-	-	13.0	21.0
948X	1.5	16.4	178	-	80.0	2.5	2.5	13.0	21.0
947X	1.6	17.5	178	-	80.0	2.0	2.0	13.0	21.0
491H	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0
494H	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0
493H	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0
492H	2.0	24.4	330	190	80.0	2.0	2.5	13.0	21.0

TAPE SPECIFICATIONS (mm)

J	K	L	M	N	O	P	Q	R	S	T	U	STD. QTY.
5.5	0.4	13.4	24.0	10.75	1.75	5.3	8.0	2.2	4.0	2.0	1.5	1000
4.3	0.4	13.1	24.0	11.5	1.75	5.3	12.0	2.2	4.0	2.0	1.5	1000
4.3	0.4	13.1	24.0	11.5	1.75	5.3	12.0	2.0	4.0	2.0	1.5	1000
4.1	0.4	10.5	24.0	11.5	1.75	4.4	8.0	1.6	4.0	2.0	1.5	1000
4.1	0.5	9.4	16.0	7.5	1.75	4.0	8.0	-	4.0	2.0	1.5	2000
2.7	0.3	8.3	16.0	7.5	1.75	4.0	8.0	-	4.0	2.0	1.5	3000
3.0	0.4	9.5	24.0	11.5	1.75	4.0	8.0	-	4.0	2.0	1.5	2000
3.0	0.4	9.5	24.0	11.5	1.75	4.0	8.0	-	4.0	2.0	1.5	2000
2.7	0.3	11.3	24.0	11.5	1.75	5.3	12.0	1.7	4.0	2.0	1.5	2000
2.4	0.4	12.0	24.0	11.5	1.75	5.9	12.0	1.6	4.0	2.0	1.5	2000
2.1	0.3	8.4	16.0	7.5	1.75	5.7	8.0	1.55	4.0	2.0	1.5	1000
1.4	0.3	7.45	16.0	7.3	1.75	4.3	8.0	-	4.0	2.0	1.5	1000
1.5	0.3	7.9	16.0	7.5	1.75	5.4	8.0	1.7	4.0	2.0	1.5	1000
2.7	0.3	11.3	24.0	11.5	1.75	5.3	12.0	1.7	4.0	2.0	1.5	2000
4.3	0.4	13.1	24.0	11.5	1.75	5.3	12.0	2.2	4.0	2.0	1.5	1000
3.1	0.4	13.1	24.0	11.5	1.75	5.3	12.0	1.7	4.0	2.0	1.5	1000
3.1	0.4	13.1	24.0	11.5	1.75	5.3	12.0	-	4.0	2.0	1.5	1000

CLOCK MODEL	A	B	C	D	E	F	G	H	I
F900	3.0	25.5	330	190	80.0	2.0	2.5	13.0	21.0
F910	3.0	16.4	180	-	80.0	2.0	2.5	13.0	21.0

J	K	L	M	N	O	P	Q	R	S	T	U	STD. QTY.
4.8	-	13.4	24.0	13.25	-	-	12.0	-	4.0	2.0	1.5	1000
3.4	0.3	7.4	16.0	7.5	1.75	5.4	8.0	1.5	4.0	2.0	1.5	500

