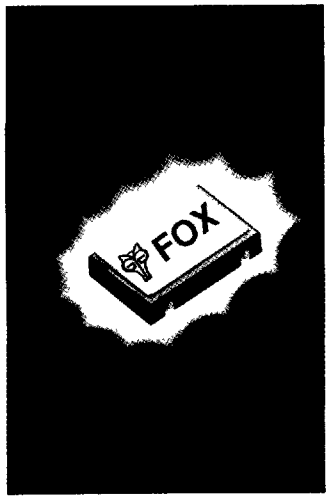
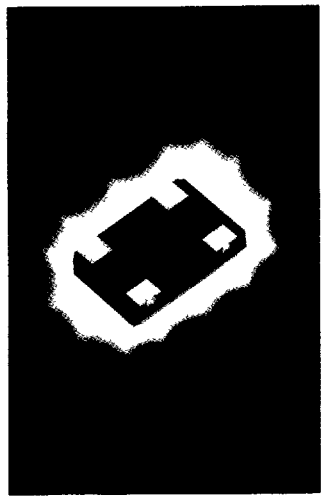
F4000 / MINIATURE CERAMIC SMD 3.3 V OSCILLATOR

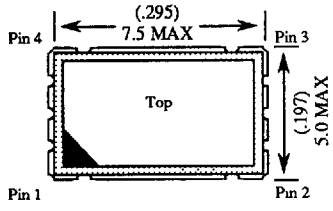


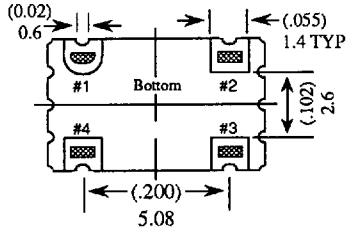


Fox stands on the leading edge of technology with the new 3.3 volt oscillator. Among the many benefits of the F4000 are increased battery life, reduced heat generation and improved EMI. The super small package provides the low profile necessary for today's advanced portable PC, instrumentation and PCMCIA designs.

FEATURES

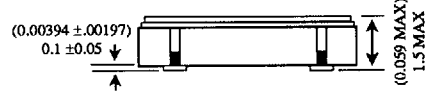
Miniature Profile
Surface Mount
Tape & Reel
Lower Power Consumption
Tri-State Enable/Disable
3000 G Shock Resistance





Pin Connections

#1 E/D ** #3 OUTPUT
#2 GND #4 3.3VDC



Metric dimensions shall govern
All dimensions are in millimeters & parenthetically in inches

• F4000 OPERATING CONDITIONS

Frequency Range		(FO)	1.8432 - 67.000 MHz
Temperature Range -	Operating	(TA)	-10 to +70 °C
	Storage	(TSTG)	-55 to +125 °C
Supply Voltage		(VDD)	3.3 ± 0.3 V

• PART NUMBER SELECTION

FREQUENCY STABILITY	PART NUMBER
±100PPM	F4000

**** Enable / Disable Function**

INH (Pin 1)	OUTPUT (Pin 3)
OPEN	ACTIVE
'1' Level (VIH ≥ 0.7 VDD)	ACTIVE
'0' Level (VIL ≤ 0.3 VDD)	High Z

• ELECTRICAL CHARACTERISTICS (TA = 25°C, VDD = 3.3V, CL= 15pF)

PARAMETERS	FREQUENCY RANGE	CONDITION	MIN	TYP	MAX	UNITS
Frequency Stability		All conditions *	-100		+100	
		TA = 25°C		±20		PPM
		TA = -10 to +70°C		±40		
Input Current (IDD)	1.8432 ~ 32.000 MHz				10	mA
	32.000+ ~ 50.000 MHz				15	
	50.000+ ~ 67.000MHz				18	
Output Symmetry	1.8432 ~ 50.000 MHz	50% VDD Level	45	50 ±2	55	%
	50.000+ ~ 67.000MHz		40	50 ±5	60	
Rise Time (TR)		10% VDD ~ 90% VDD		2.5	5	ns
Fall Time (TF)		90% VDD ~ 10% VDD		1.8	5	
Output Voltage (VOL)		'0' Logic Level			10% VDD	V
(VOH)		'1' Logic Level	90%VDD			
Output Current (IOL)		'0' Logic Level	2.0			mA
(IOH)		'1' Logic Level			-2.0	
Output Load		HCMOS			15	pF
Output Enable Time		(See table **)			10	ms
Output Disable Time					150	ns
Start-up Time	1.8432 ~ 32.000 MHz			0.8	5	ms
	32.000+ ~ 67.00 MHz			3.0	10	

* Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, aging, shock, and vibration.
See page 53 for environmental/mechanical specifications, test circuits, and output waveforms.
All specifications subject to change without notice. Rev. 3/18/94

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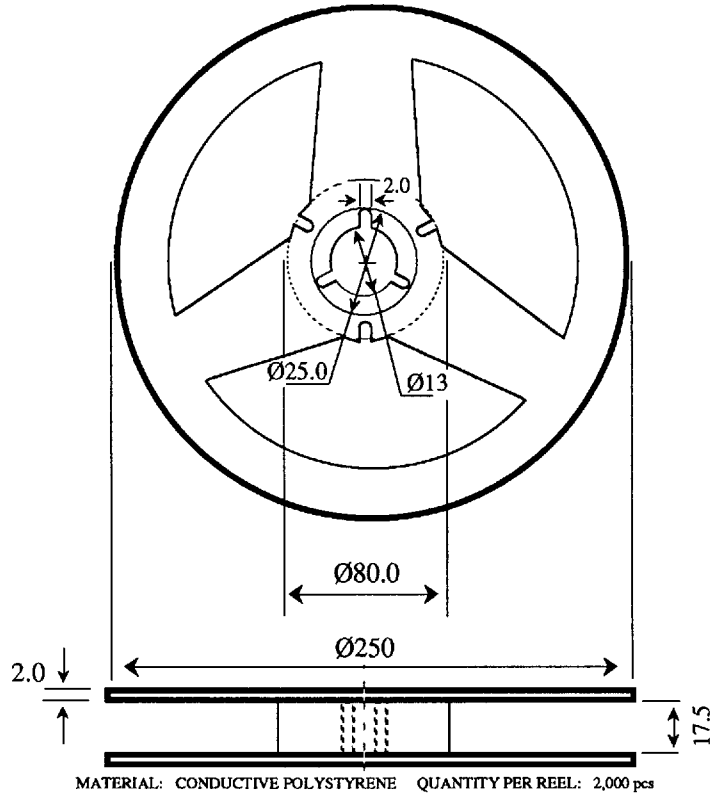
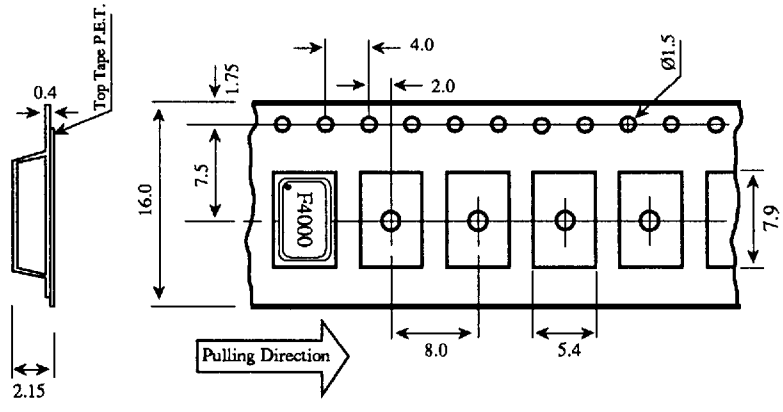
F4000 REEL DIMENSIONS *

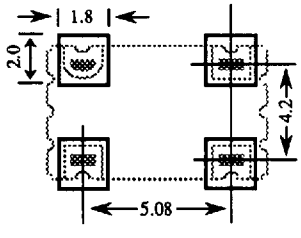


MATERIAL: CONDUCTIVE POLYSTYRENE QUANTITY PER REEL: 2,000 pcs

F4000 EMBOSSED CARRIER DIMENSIONS *

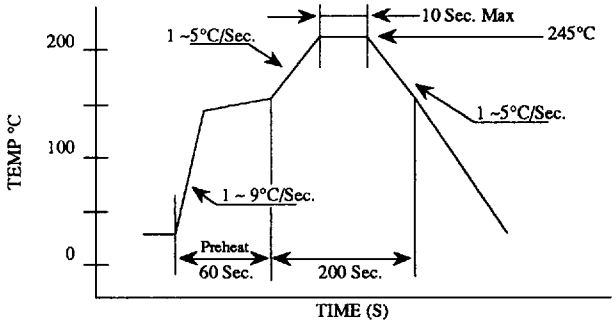


RECOMMENDED SOLDER PAD LAYOUT



RECOMMENDED SOLDER PROFILE

260°C MAX, 10 SEC MAX, 2 TIMES or 230°C MAX, 180 SEC MAX, 1 TIME



* Meets EIA-481A-2 and EIAJ-1009B
All dimensions in millimeters
All specifications subject to change without notice. Rev. 2/7/94

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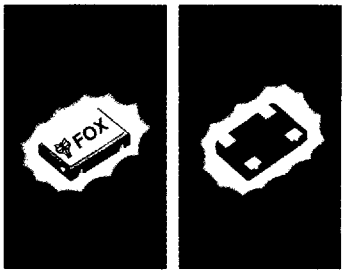
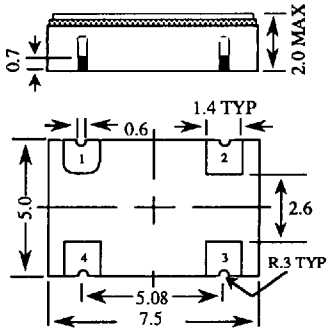
SURFACE MOUNT OSCILLATORS

The F3345/F3340 & F3355/F3350 are ceramic oscillators, perfect for applications such as miniature computers and peripherals, telecommunication devices and instrumentation. Featuring tri-state enable/disable, high capacitive load option, and low EMI. *(See pg. 60 - 61 for further information)*

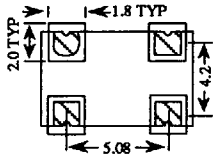


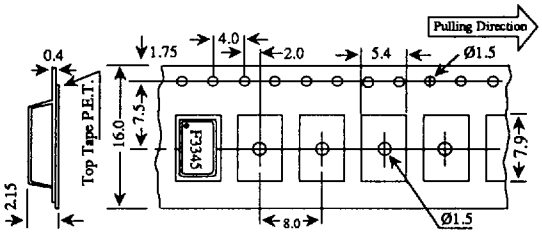
	F3345	F3355
Frequency Range	1.8432 ~ 67 MHz	1.8432 ~ 50 MHz
Frequency Stability	±100PPM (F3345)	±100PPM (F3355)
	±50PPM (F3340)	±50PPM (F3350)
Operating Temperature	-10°C to +70°C	-10°C to +70°C
Input Current		
1.8432 ~ 25 MHz	25 mA MAX	20mA MAX
25 ~ 50 MHz	45 mA MAX	35mA MAX
50 ~ 67 MHz	60 mA MAX	------
Symmetry @ 2.5 VDC	45/55% MAX	45/55% MAX
Rise/Fall Time	7 ns MAX	10 ns MAX
Output Load	10 TTL or 50 pF	10 LS-TTL or 15 pF

Pin Connections
#1 E/D #3 OUTPUT
#2 GND #4 5VDC

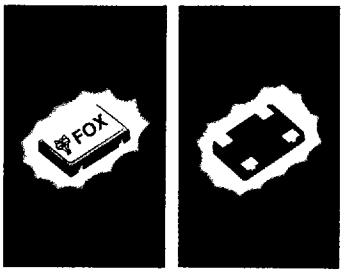


Recommended Solder Pad Layout



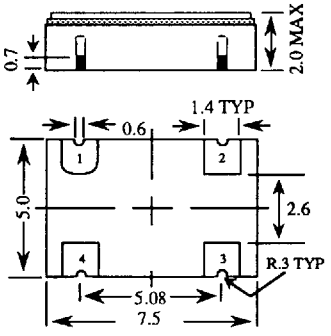


Fox supports the leading edge of technology with a new low-voltage oscillator, the F4000. Among the many benefits of a 3.3V system are an increase in battery life, reduced heat generation and improved EMI, packaged with the low profile necessary for today's advanced portable PC and instrumentation designs. *(See pg. 62 - 63 for further information)*

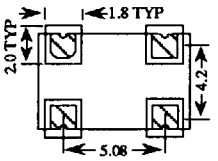


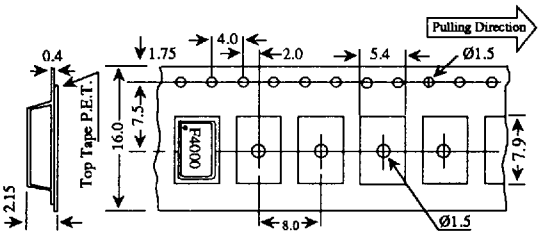
	F4000
Frequency Range	1.8432 ~ 50.000 MHz
Frequency Stability	±100PPM
Operating Temperature	-10°C to +70°C
Input Current	
1.8432 ~ 32.000 MHz	12.0 mA MAX
32.000+ ~ 50.000 MHz	16.5 mA MAX
Symmetry	45/55% MAX
Rise/Fall Time	7 ns MAX
Output Load - HCMOS	15 pF

Pin Connections
#1 E/D #3 OUTPUT
#2 GND #4 3.3VDC



Recommended Solder Pad Layout

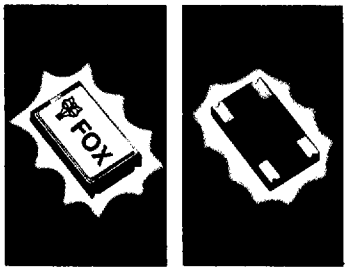




All dimensions in mm

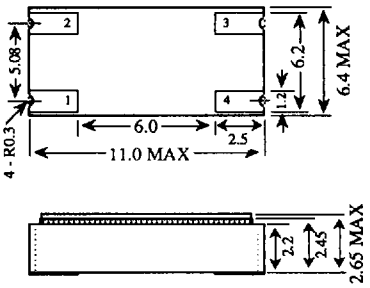
SURFACE MOUNT OSCILLATORS

The F3160 / F3170 & F3165 / F3175 are ceramic oscillators which can drive both HCMOS and TTL loads in high density applications. Features include tri-state enable/disable, industry compatible pinout, and low noise. *(See pg. 58 - 59 for further information)*

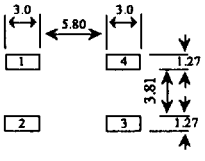


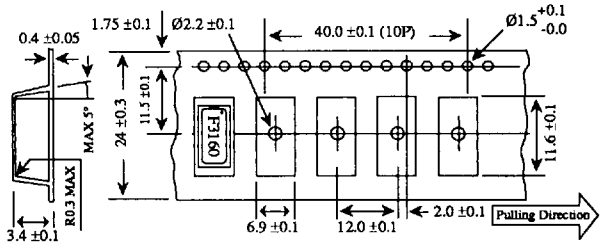
	F3160	F3165
Frequency Range	1.8432 - 100 MHz	1.8432 - 50 MHz
Frequency Stability	±100PPM ±50PPM (F3170)	±100PPM ±50PPM (F3175)
Operating Temperature	-10°C to +70°C	-10°C to +70°C
Input Current		
1.8432 ~ 25 MHz	25 mA MAX	20 mA MAX
25 ~ 50 MHz	45 mA MAX	35 mA MAX
50 ~ 70 MHz	70 mA MAX	-----
70 ~ 100 MHz	80 mA MAX	-----
Symmetry @ 2.5 VDC	40/60% MAX	45/55% MAX
Rise/Fall Time		
1.8432 ~ 70 MHz	7 ns MAX	10 ns MAX
70+ ~ 100 MHz	3ns MAX	-----
Output Load		
1.8432 ~ 70 MHz	10 TTL	10 LSTTL
1.8432 ~ 100 MHz	50 pF	15 pF

Pin Connections
#1 E/D #3 Output
#2 GND #4 +5 VDC

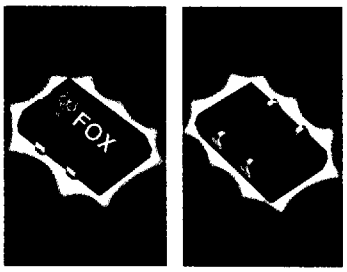


Recommended Solder Pad Layout



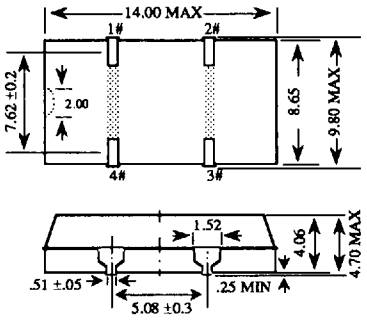


The FSO Series Oscillator is compatible with both TTL and HCMOS technologies. Features include extended temperature range, 5000 G shock resistance, and tri-state enable/disable option. Enable option FSO-2, FSO-2T, and FSO-2H. *(See pg. 56 - 57 for further information)*

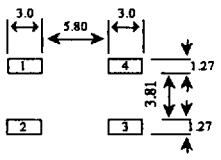


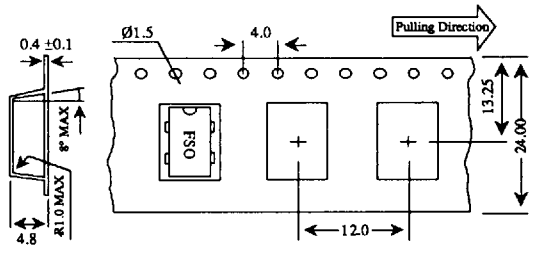
	FSO / FSO-2	FSO-T/FSO-2T	FSO-H	FSO-2H
Frequency Range	1.025 - 26 MHz	26 - 36 MHz	30 - 55 MHz	26 - 66.667 MHz
Frequency Stability				
-10°C to +70°C	±100PPM	±100PPM	±100PPM	±100PPM
-40°C to +85°C	±200PPM	±200PPM		
Input Current				
No Load	23 mA MAX	35 mA MAX	35 mA MAX	35 mA MAX
Disabled (-2, -2T, -2H only)	12 mA MAX	20 mA MAX	--------	20 mA MAX
Symmetry	40/60% MAX	40/60% MAX	40/60% MAX	40/60% MAX
Rise/Fall Time	8 ns MAX	10 ns MAX	7 ns MAX	7 ns MAX
Output Load	10 TTL or 50 pF	10 TTL or 30 pF	10 LS-TTL or 50 pF	50 pF

Pin Connections
#1 E/D or N.C. #3 Output
#2 GND #4 +5 VDC



Recommended Solder Pad Layout





All dimensions in mm