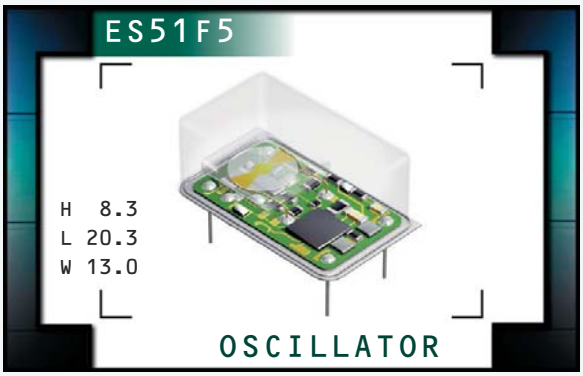
ES51F5 Series

- Temperature Compensated Crystal Oscillator (TCXO)
- Clipped Sinewave Output
- 5.0V Supply Voltage
- Stability to 1.5ppm
- Internal mechanical trim
- External voltage control option available



NOTES

ELECTRICAL SPECIFICATIONS

Frequency Range		9.600MHz to 44.736MHz
Operating Temperature Range		See Table 1
Storage Temperature Range		-55°C to 125°C
Supply Voltage (V_{DD})		5.0V_{DC} ±5%
Input Current	Measured at Steady State at 25°C, at Nominal V_{DD}, at Nominal V_C	10mA Maximum
Frequency Stability	vs. Initial Frequency Tolerance	±1.0ppm (at Nominal V_{DD} and V_C, at 25°C)
	vs. Operating Temperature Range	See Table 1 (at Nominal V_{DD} and V_C)
	vs. Input Voltage (V_{DD} ±5%)	±0.3ppm Maximum
	vs. Load (±10%)	±0.2ppm Maximum
Aging (at 25°C)		±1ppm / year Maximum
Output Voltage		1.0V_{p-p} Minimum Clipped Sinewave
Load Drive Capability		10kOhms//10pF
Control Voltage Range		0.0V_{DC} to V_{DD}
Control Voltage (External)	Positive Transfer Characteristic	2.5V_{DC} ±2.0V_{DC}
Frequency Deviation	Referenced to F_O at V_C = 2.5V_{DC}, V_{DD} = 5.0V_{DC}	±7ppm Minimum, ±20ppm Maximum
Linearity		±10% Maximum
Internal Trim	Measured at 25°C, V_{DD}=5.0V_{DC}, V_C=2.5V_{DC}	±3ppm Minimum (Top Access)
Input Impedance		10kOhms Typical
Phase Noise (at 19.440MHz)	Measured at 25°C, at Nominal V_{DD}, at Nominal V_C	
	at 10Hz Offset	-70dBc/Hz Typical
	at 100Hz Offset	-100dBc/Hz Typical
	at 1kHz Offset	-130dBc/Hz Typical
	at 10kHz Offset	-140dBc/Hz Typical
	at 100kHz Offset	-145dBc/Hz Typical

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	ES51F5	14-PIN DIP	5.0V	OS3C	06/04

PART NUMBERING GUIDE

ES51F5 G 15 A V - 12.800M - G

INITIAL TOLERANCE
G=±1.0ppm Maximum

FREQUENCY STABILITY
Two Digit Code Per Table 1

OPERATING TEMP. RANGE
One Letter Code Per Table 1

AVAILABLE OPTIONS
Blank=None (Standard)
CB=Cut Leads to 2.540 ±0.500 (0.100" ±0.020")
CC=Cut Leads to 3.175 ±0.500 (0.125" ±0.020")
CD=Cut Leads to 3.810 ±0.500 (0.150" ±0.020")
CE=Cut Leads to 4.445 ±0.500 (0.175" ±0.020")
G=Full Size Gull Wing

FREQUENCY

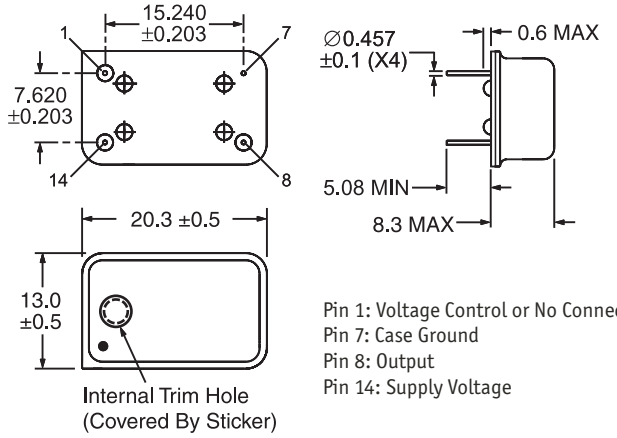
EXTERNAL TRIM
N=None (No Connection on Pin 1)
V=Voltage Control on Pin 1

TABLE 1: PART NUMBERING CODES

Operating Temperature Range		Frequency Stability X = Available from 9.600MHz to 32.768MHz Y = Available at any Frequency			
		±1.5ppm	±2.0ppm	±3.0ppm	±5.0ppm
	Code	15	20	30	50
0°C to +50°C	A	Y	Y	Y	Y
0°C to 70°C	B	X	Y	Y	Y
-20°C to +70°C	C		X	Y	Y
-30°C to +75°C	D			Y	Y
-40°C to +85°C	E			X	Y

MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



Pin 1: Voltage Control or No Connect
Pin 7: Case Ground
Pin 8: Output
Pin 14: Supply Voltage

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M
- M=MHz
- Frequency (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ
- Week of Year
- Last Digit of Year
- Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
Fine Leak Test	MIL-STD-883, Method 1014, Condition A (Internal Crystal Only)
Gross Leak Test	MIL-STD-883, Method 1014, Condition C (Internal Crystal Only)
Mechanical Shock	MIL-STD-202, Method 213, Condition C
Vibration	MIL-STD-883, Method 2007, Condition A
Lead Integrity	MIL-STD-883, Method 2004
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-883, Method 210
Resistance to Solvents	MIL-STD-883, Method 215

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	ES51F5	14 pin DIP	5.0V	OS3C	06/04