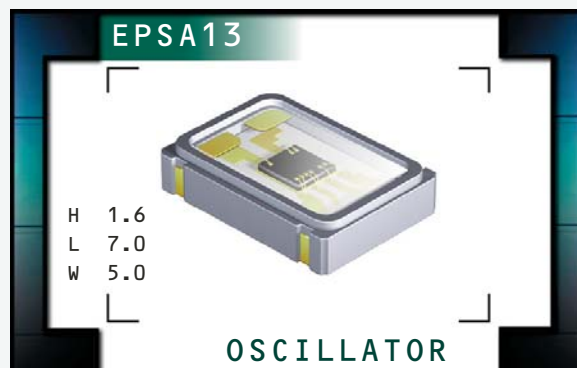


EPSA13 Series

- Programmable Spread Spectrum Oscillators
- Low EMI LVCMOS Output
- +3.3V Supply Voltage
- Tri-State and Power Down Options
- Center Spread and Down Spread Modulation Options
- 4 Pad Ceramic SMD Package
- RoHS Compliant (Pb-Free)



ECLIPTEK®
CORPORATION



ELECTRICAL SPECIFICATIONS

Nominal Frequency		2.000MHz to 200.000MHz
Operating Temperature Range		-40°C to 85°C
Storage Temperature Range		-55°C to 125°C
Supply Voltage (V_{DD})		3.3V _{DC} ±10%
Maximum Supply Voltage		-0.5V _{DC} to 4.2V _{DC}
Input Current	2.000MHz to 25.000MHz	15mA Maximum
	25.001MHz to 50.000MHz	23mA Maximum
	50.001MHz to 100.000MHz	27mA Maximum
	100.001MHz to 166.000MHz	30mA Maximum
	166.001MHz to 200.000MHz	40mA Maximum
Frequency Tolerance / Stability		Inclusive of All Conditions: Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, 1st Year Aging at 25°C, Shock, and Vibration ±50ppm Maximum
Output Voltage Logic High (V_{OH})		$I_{OH} = -8mA$ 90% of V_{DD} Minimum
Output Voltage Logic Low (V_{OL})		$I_{OL} = +8mA$ 10% of V_{DD} Maximum
Rise Time / Fall Time		10% to 90% of waveform 3nSeconds Maximum
Duty Cycle		at 50% of waveform 50 ±5(%)
Load Drive Capability		15pF Maximum
Output Control Function		High Impedance Internal Pull Down Resistor of 100kOhms Typical on Pad 1 Tri-State or Power Down
Tri-State/Power Down Input Voltage	V_{IH} of 70% of V_{DD} Minimum	Enables Output
	No Connection	Enables Output
	V_{IL} of 30% of V_{DD} Maximum	Disables Output: High Impedance
Power Down Output Disable Time		100nSec Maximum
Power Down Output Enable Time		3mSec Maximum
Standby Current		Unloaded; Pad 1 = Ground 10µA Maximum
Tri-State Output Disable Time		100nSec Maximum
Tri-State Output Enable Time		100nSec Maximum
Disable Current		Unloaded; Pad 1 = Ground 20mA Maximum
Spread Spectrum Percentage	±0.25%, ±0.50%, ±0.75%, ±1.0%, ±1.5%, ±2.0%	Center Spread
	-0.50%, -1.0%, -1.5%, -2.0%, -3.0%, -4.0%	Down Spread
Modulation Frequency		30kHz Minimum, 32kHz Typical, 45kHz Maximum
Period Jitter		Cycle to Cycle; Spread Spectrum-On 100pSec Maximum
Start Up Time		10mSec Maximum

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EP SA13

PACKAGE
CERAMIC

VOLTAGE
3.3V

CLASS
OS8F

REV. DATE
10/10

PART NUMBERING GUIDE

EPSA13 B B H A - 44.736M TR

FREQUENCY TOLERANCE & STABILITY

B=±50ppm Maximum

OPERATING TEMPERATURE RANGE

B=-40°C to +85°C

OUTPUT CONTROL FUNCTION

H=Tri-State

J=Power Down

AVAILABLE OPTIONS

Blank=Bulk

TR=Tape and Reel

FREQUENCY

SPREAD SPECTRUM PERCENTAGE

A=±0.25% Center Spread G=-0.50% Down Spread

B=±0.50% Center Spread H=-1.00% Down Spread

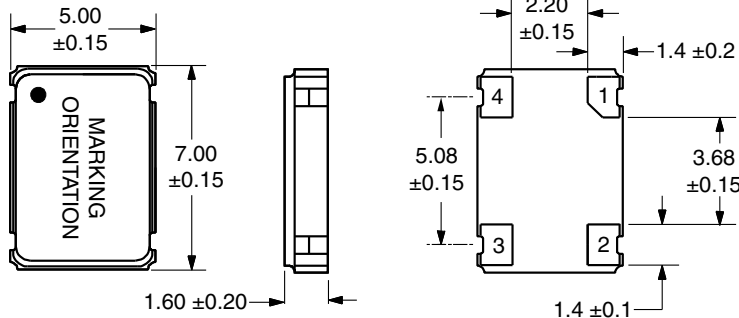
C=±0.75% Center Spread J=-1.50% Down Spread

D=±1.00% Center Spread L=-2.00% Down Spread

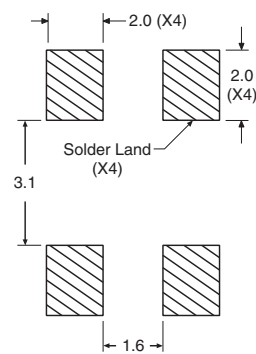
E=±1.50% Center Spread N=-3.00% Down Spread

F=±2.00% Center Spread P=-4.00% Down Spread

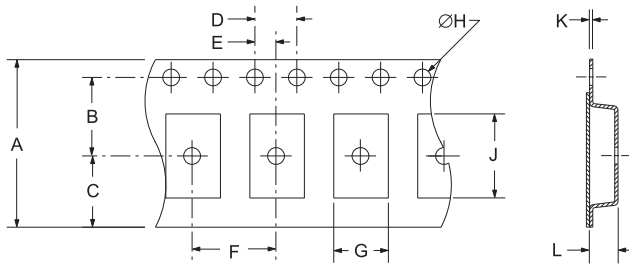
MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



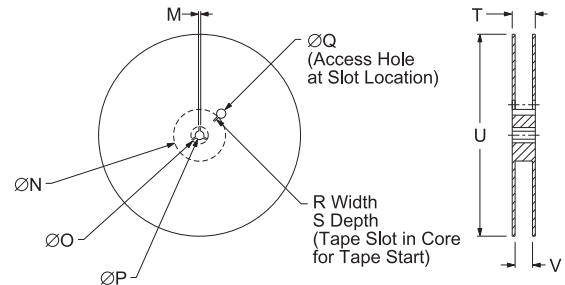
SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	16±.3	7.5±.1	6.75±.1	4 ±.1	2±.1
F	G	H	J	K	L
8±.1	A0*	1.5 ±.1-0	B0*	.3 ±.05	K0*



REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13±.2	40 MIN
R	S	T	U	V	QTY/REEL
2.5 MIN	10 MIN	22.4 MAX	360 MAX	16.4±2-0	1,000

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic

ESD Susceptibility
Fine Leak Test
Flammability
Gross Leak test
Mechanical Shock
Moisture Resistance
Moisture Sensitivity
Resistance to Soldering Heat
Resistance to Solvents
Solderability
Temperature Cycling
Vibration

Specification

MIL-STD-883, Method 3015, Class 1, HBM: 1500V
MIL-STD-883, Method 1014, Condition A
UL94-V0
MIL-STD-883, Method 1014, Condition C
MIL-STD-883, Method 2002, Condition B
MIL-STD-883, Method 1004
J-STD-020, MSL 1
MIL-STD-202, Method 210, Condition K
MIL-STD-202, Method 215
MIL-STD-883, Method 2003
MIL-STD-883, Method 1010, Condition B
MIL-STD-883, Method 2007, Condition A

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: S XXXXX

Eclipse Manufacturing Identifier
Configuration Designator

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EPSA13	CERAMIC	3.3V	OS8F	10/10