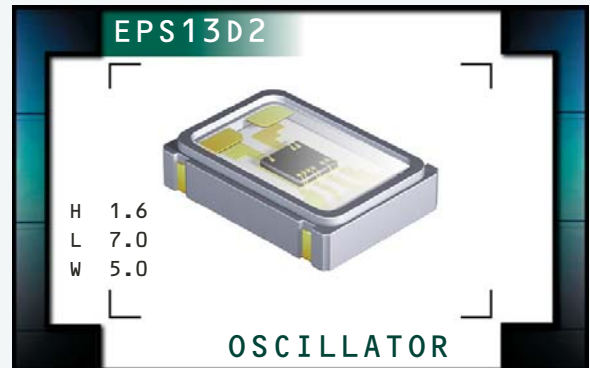


EPS13D2 Series



- RoHS Compliant (Pb-Free)
- EPS™ Spread Spectrum Programmable Clock Oscillators
- Ceramic 4-pad SMD Package
- Low EMI LVHCMOS Output
- 3.3V Supply Voltage
- Stability to 100ppm
- Center Spread and Down Spread Modulation
- Tri-State and Power Down Options Available
- Available on Tape & Reel



ELECTRICAL SPECIFICATIONS

Nominal Frequency		14.318MHz to 166.000MHz
Operating Temperature Range		-20°C to 70°C
Storage Temperature Range		-55°C to 125°C
Supply Voltage (V_{DD})		3.3V _{DC} ±0.3V _{DC}
Maximum Supply Voltage		-0.5V _{DC} to 7.0V _{DC}
Input Current	Unloaded; V _{DD} = 3.3V _{DC}	30mA 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	±100ppm Maximum
Output Voltage Logic High (V_{OH})	I _{OH} = -8mA	V _{DD} -0.4V _{DC} Minimum
Output Voltage Logic Low (V_{OL})	I _{OL} = +8mA	0.4V _{DC} Maximum
Rise Time / Fall Time	20% to 80% of waveform	2.7nSeconds Maximum
Duty Cycle	at 50% of waveform	50 ±10(%) 50 ±5(%)
Load Drive Capability		15pF HCMOS Load Maximum
Output Control Function	Internal Pull Down Resistor of 100kOhms Typical on Pad 3, Internal Pull Up 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 No Connection V _{IL} of 30% of V _{DD} Maximum	Enables Output Enables Output Disables Output: High Impedance
Power Down Output Disable Time		350nSec Maximum
Power Down Output Enable Time		3mSec Maximum
Standby Current	Unloaded; Pad 1 = Ground; V _{DD} = 3.3V _{DC}	50µA Maximum
Tri-State Output Disable Time		350nSec Maximum
Tri-State Output Enable Time		350nSec Maximum
Disable Current	Unloaded; Pad 1 = Ground; V _{DD} = 3.3V _{DC}	20mA Maximum
Spread Spectrum Percentage	±0.25%, ±0.50%, ±0.75%, ±1.0%, ±1.5%, ±2.0% -0.50%, -1.0%, -1.5%, -2.0%, -3.0%, -4.0%	Center Spread Down Spread
Modulation Frequency		30kHz Minimum, 31.5kHz Typical, 33kHz Maximum
Period Jitter	Cycle to Cycle; Spread Spectrum-On; V _{DD} = 3.3V _{DC}	700pSec Maximum < 25.000MHz 400pSec Maximum 25.000MHz to 133.000MHz 300pSec Maximum > 133.000MHz
Aging	First Year at 25°C	±5ppm Maximum
Start Up Time		10mSec Maximum

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EPS13D2

PACKAGE
CERAMIC

VOLTAGE
3.3V

CLASS
OS2G

REV. DATE
09/07

PART NUMBERING GUIDE

EPS13D2 C 1 H A - 44.736M TR

**FREQUENCY TOLERANCE & STABILITY/
OPERATING TEMPERATURE RANGE**

C=±100ppm Maximum over -20°C to +70°C

DUTY CYCLE

1=50% ±10%, 2=50% ±5%

LOGIC CONTROL/ADDITIONAL OUTPUT

H=Tri-State
J=Power Down

AVAILABLE OPTIONS

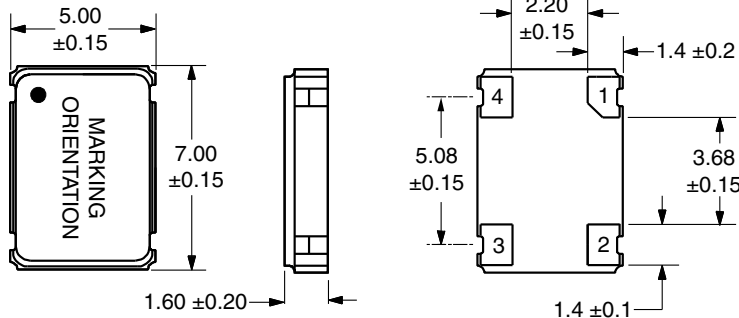
Blank= Tubes
TR= Tape and Reel (Standard)

FREQUENCY

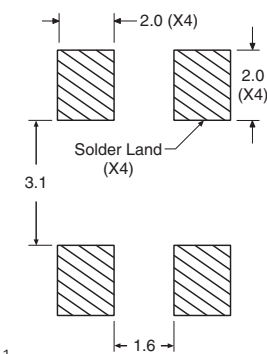
SPREAD SPECTRUM PERCENTAGE

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

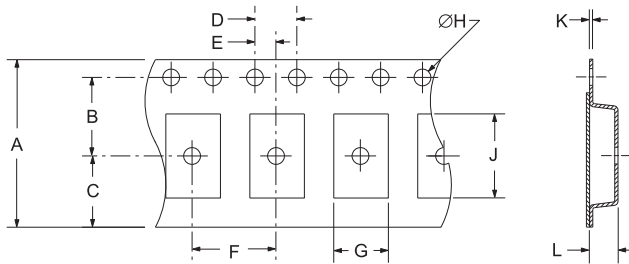


SUGGESTED SOLDER PAD LAYOUT
ALL DIMENSIONS IN MILLIMETERS

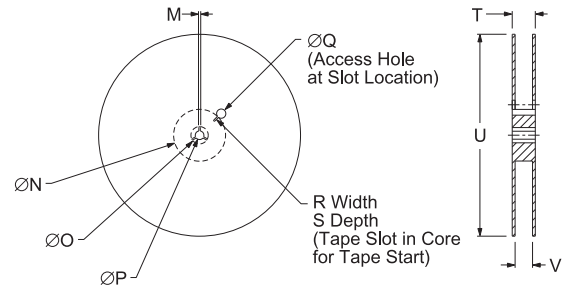


Pin 1: Tri-State or Power Down Pin 3: Output
Pin 2: Case Ground Pin 4: Supply Voltage

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	Specification
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-202, Method 213, Condition C
Vibration	MIL-STD-883, Method 2007, Condition A
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-202, Method 210
Resistance to Solvents	MIL-STD-202, Method 215

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

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

Line 3: S XX Y ZZ
Week of Year
Last Digit of Year
Ecliptek Manufacturing Identifier
Configuration Designator

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EPS13D2	CERAMIC	3.3V	OS3G	09/07