

## Marketing Bulletin

**DATE:** December 31<sup>st</sup>, 2009  
**TO:** All Sales Personnel  
**FROM:** Isaac Gonzalez  
**RE:** Product Termination

To all concerned parties,

This bulletin is to notify all customers of the discontinuation of the following Ecliptek series effective December 31<sup>st</sup>, 2009:

<b>Series</b>	<b>Description</b>	<b>Recommended Replacement</b>
EPS13D2	3.3V 4-Pad 5x7mm Ceramic SMD LVCMOS Programmable Spread Spectrum Oscillator	<a href="#">EMS13 Series</a>

In compliance with our End of Life (EOL) policy, this will serve as advanced notice of product termination. New orders will not be accepted after September 1<sup>st</sup>, 2010, with delivery to conclude by December 1<sup>st</sup>, 2010.

If there are any questions pertaining to this bulletin, please feel free to contact me. Thank you again for your cooperation.

Best Regards,

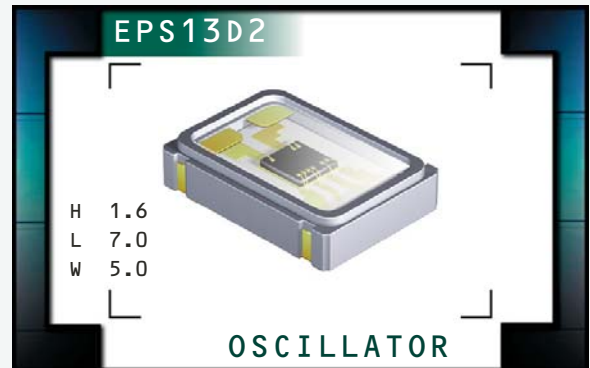


Isaac Gonzalez  
Configuration Manager  
Ecliptek Corporation

# EPS13D2 Series



- RoHS Compliant (Pb-Free)
- EPS™ Spread Spectrum Programmable Clock Oscillators
- Ceramic 4-pad SMD Package
- Low EMI LVCMOS 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

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

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EPS13D2	CERAMIC	3.3V	OS2G	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**

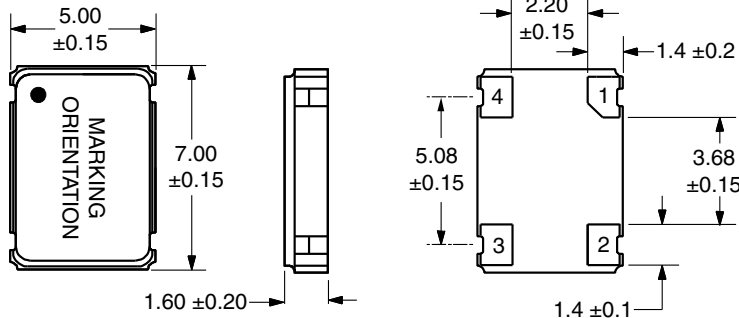
Blank=Tubes  
TR=Tape and Reel (Standard)

**FREQUENCY**

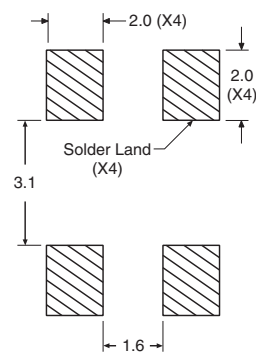
**SPREAD SPECTRUM PERCENTAGE**

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



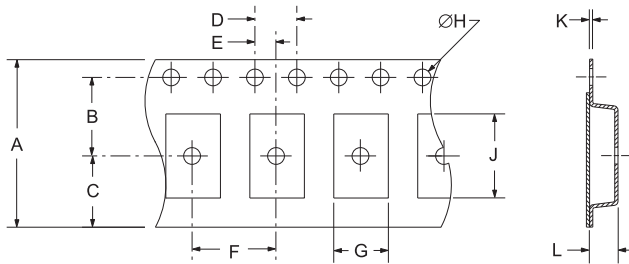
**SUGGESTED SOLDER PAD LAYOUT**  
ALL DIMENSIONS IN MILLIMETERS



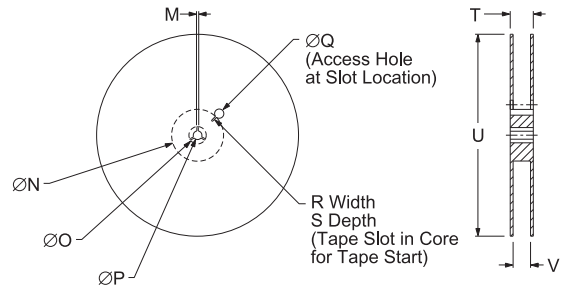
Tolerances=±0.1

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  
Line 3: S XX Y ZZ

Frequency in MHz (5 Digits Maximum + Decimal)  
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