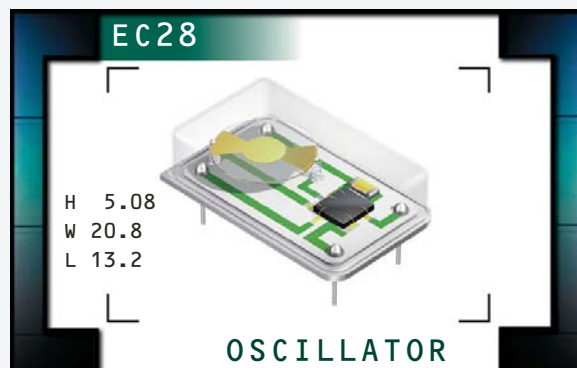


EC28 Series

- RoHS Compliant (Pb-free)
- HCMOS output
- 2.5V supply voltage
- 14 pin DIP package
- Stability to $\pm 20\text{ppm}$
- Custom lead length, gull wing options available



ECLIPTEK
CORPORATION



NOTES

ELECTRICAL SPECIFICATIONS

Frequency Range (MHz)		1.544MHz to 33.000MHz
Operating Temperature Range (OTR)	$\pm 100\text{ppm}$, $\pm 50\text{ppm}$, or 25ppm	0°C to 70°C or -40°C to 85°C
	$\pm 20\text{ppm}$	0°C to 70°C
Storage Temperature Range (STR)		-55°C to 125°C
Supply Voltage (V_{DD})		$2.5V_{DC} \pm 5\%$
Input Current (I_{DD})	$\leq 24.000\text{MHz}$	10mA Maximum
	$> 24.000\text{MHz}$	20mA Maximum
Frequency Tolerance / Stability		Inclusive of Operating Temperature Range, Supply Voltage, and Load $\pm 100\text{ppm}$, $\pm 50\text{ppm}$, $\pm 25\text{ppm}$, or $\pm 20\text{ppm}$ Maximum (0°C to 70°C Only)
Output Voltage Logic High (V_{OH})		90% of V_{DD} Minimum $I_{OH} = -4\text{mA}$
Output Voltage Logic Low (V_{OL})		10% of V_{DD} Minimum $I_{OL} = +4\text{mA}$
Rise Time / Fall Time (T_R/T_F)	20% to 80% of Waveform $\leq 24.000\text{MHz}$	6 nSeconds Maximum
	20% to 80% of Waveform $> 24.000\text{MHz}$	4 nSeconds Maximum
Duty Cycle (SYM)		at 50% of Waveform $50 \pm 10(\%)$ (Standard) or $50 \pm 5(\%)$ (Optional)
Load Drive Capability (C_{LOAD})		15pF HCMOS Load
Tri-State Input Voltage	V_{IH} : No Connection	Enables Output
	$V_{IH} \geq 90\%$ of V_{DD}	Enables Output
	$V_{IL} \leq 10\%$ of V_{DD}	Disables Output: High Impedance
Aging (at 25°C)		$\pm 5\text{ppm}$ / year Maximum
Start Up Time (T_S)		10 mSeconds Maximum
Period Jitter: Absolute		$\pm 100\text{pSeconds}$ Maximum
Period Jitter: One Sigma		$\pm 25\text{pSeconds}$ Maximum

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EC28

PACKAGE
14 pin DIP

VOLTAGE
2.5V

CLASS
OS53

REV. DATE
07/06

PART NUMBERING GUIDE

EC28 00 ET TS - 32.000M - G

FREQUENCY TOLERANCE / STABILITY

00=±100ppm Maximum (Standard)
45=±50ppm Maximum, 25=±25ppm Maximum
20=±20ppm Maximum

OPERATING TEMP. RANGE

Blank=0°C to 70°C (Standard), ET=-40°C to 85°C

DUTY CYCLE

Blank=50±10(%) (Standard), T=50±5(%)

AVAILABLE OPTIONS

Blank=None (Standard)
CLXXX=Custom Lead Length (See Page 133)
G=Full Size Gull Wing (See Page 132)

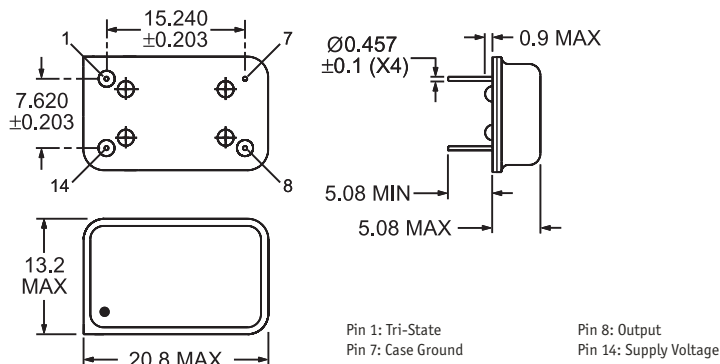
FREQUENCY

OUTPUT CONTROL FUNCTION

TS=Tri-State Enable High

NOTES

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic

Fine Leak Test
Gross Leak Test
Mechanical Shock
Vibration
Lead Integrity
Solderability
Temperature Cycling
Resistance to Soldering Heat
Resistance to Solvents

Specification

MIL-STD-883, Method 1014, Condition A
MIL-STD-883, Method 1014, Condition C
MIL-STD-202, Method 213, Condition C
MIL-STD-883, Method 2007, Condition A
MIL-STD-883, Method 2004
MIL-STD-883, Method 2002
MIL-STD-883, Method 1010
MIL-STD-883, Method 210
MIL-STD-883, Method 215

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: EC28 TS

Output Control Function
TS = Tri-State Enable High

Series Designator

Line 3: XX.XXX M

Frequency in MHz
(5 Digits Maximum + Decimal)

Line 4: XX Y ZZ

Week of Year
Last Digit of Year
Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

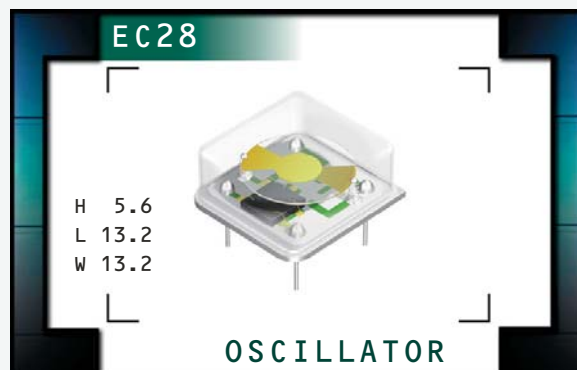
MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EC28	14 pin DIP	2.5V	OS53	07/06

EC28 Series

- RoHS Compliant (Pb-free)
- HCMOS output
- 2.5V supply voltage
- 8 pin DIP package
- Stability to $\pm 20\text{ppm}$
- Custom lead length, gull wing options available



ECLIPTEK®
CORPORATION



NOTES

ELECTRICAL SPECIFICATIONS

Frequency Range (MHz)		1.544MHz to 33.000MHz
Operating Temperature Range (OTR)		$\pm 100\text{ppm}$, $\pm 50\text{ppm}$, or $\pm 25\text{ppm}$ 0°C to 70°C or -40°C to 85°C 0°C to 70°C
Storage Temperature Range (STR)		-55°C to 125°C
Supply Voltage (V_{DD})		$2.5V_{DC} \pm 5\%$
Input Current (I_{DD})	$\leq 24.000\text{MHz}$	10mA Maximum
	$> 24.000\text{MHz}$	20mA Maximum
Frequency Tolerance / Stability		Inclusive of Operating Temperature Range, Supply Voltage, and Load $\pm 100\text{ppm}$, $\pm 50\text{ppm}$, $\pm 25\text{ppm}$, or $\pm 20\text{ppm}$ Maximum (0°C to 70°C Only)
Output Voltage Logic High (V_{OH})		90% of V_{DD} Minimum $I_{OH} = -4\text{mA}$
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Rise Time / Fall Time (T_R/T_F)	20% to 80% of Waveform $\leq 24.000\text{MHz}$	6 nSeconds Maximum
	20% to 80% of Waveform $> 24.000\text{MHz}$	4 nSeconds Maximum
Duty Cycle (SYM)		at 50% of Waveform $50 \pm 10(\%)$ (Standard) or $50 \pm 5(\%)$ (Optional)
Load Drive Capability (C_{LOAD})		15pF HCMOS Load
Tri-State Input Voltage	V_{IH} : No Connection	Enables Output
	V_{IH} : $\geq 90\%$ of V_{DD}	Enables Output
	V_{IL} : $\leq 10\%$ of V_{DD}	Disables Output: High Impedance
Aging (at 25°C)		$\pm 5\text{ppm} / \text{year}$ Maximum
Start Up Time (T_s)		10mSeconds Maximum
Period Jitter: Absolute		$\pm 100\text{pSeconds}$ Maximum
Period Jitter: One Sigma		$\pm 25\text{pSeconds}$ Maximum

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EC28

PACKAGE
8 pin DIP

VOLTAGE
2.5V

CLASS
OS54

REV. DATE
07/06

PART NUMBERING GUIDE

EC28 00 HS ET TS - 32.000M - G TR

FREQUENCY TOLERANCE / STABILITY

00=±100ppm Maximum (Standard)
45=±50ppm Maximum, 25=±25ppm Maximum
20=±20ppm Maximum

PACKAGE

HS=Half Size 8 Pin DIP

OPERATING TEMP. RANGE

Blank=0°C to 70°C (Standard), ET=-40°C to 85°C

DUTY CYCLE

Blank=50 ±10(%) (Standard), T=50 ±5(%)

PACKAGING OPTIONS

TR= Tape & Reel (only offered with Half Size G and Half Size G2 Options)

AVAILABLE OPTIONS

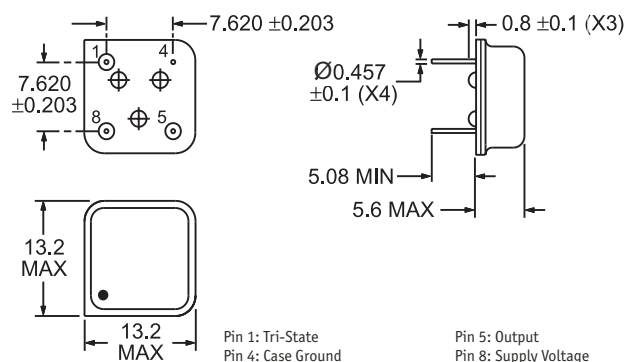
Blank=None (Standard)
CLXX=Custom Lead Length (See Page 133)
G=Half Size Gull Wing (See Page 132)
G2=Half Size Gull Wing (See Page 132)

FREQUENCY

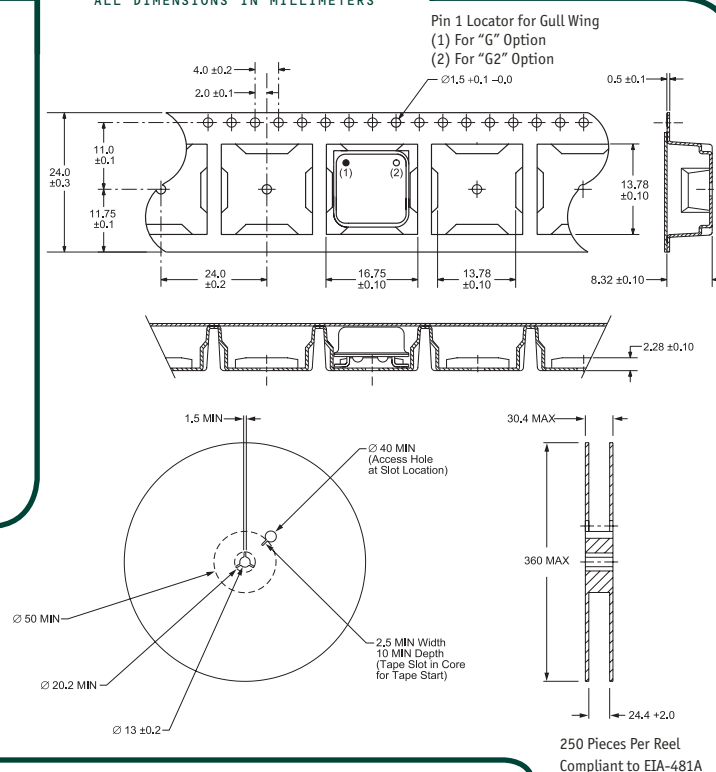
OUTPUT CONTROL FUNCTION

TS=Tri-State Enable High

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: EC28 TS

Output Control Function
TS = Tri-State Enable High

Series Designator

Line 3: XX.XXX M

Frequency in MHz
(5 Digits Maximum + Decimal)

Line 4: 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

Fine Leak Test
Gross Leak Test
Mechanical Shock
Vibration
Lead Integrity
Solderability
Temperature Cycling
Resistance to Soldering Heat
Resistance to Solvents

Specification

MIL-STD-883, Method 1014, Condition A
MIL-STD-883, Method 1014, Condition C
MIL-STD-202, Method 213, Condition C
MIL-STD-883, Method 2007, Condition A
MIL-STD-883, Method 2004
MIL-STD-883, Method 2002
MIL-STD-883, Method 1010
MIL-STD-883, Method 210
MIL-STD-883, Method 215

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EC28

PACKAGE
8 pin DIP

VOLTAGE
2.5V

CLASS
OS54

REV. DATE
07/06