

# EP35 Series

- RoHS Compliant (Pb-Free)
- EPO™ Programmable Oscillators
- 5.0V supply voltage
- HCMOS/TTL output
- Ceramic SMD package
- Stability to  $\pm 50$ ppm
- Available on tape and reel



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	1.000MHz to 125.000MHz		
<b>Operating Temperature Range</b>	-20°C to 70°C or -40°C to 85°C		
<b>Storage Temperature Range</b>	-55°C to 125°C		
<b>Supply Voltage (<math>V_{DD}</math>)</b>	5.0V <sub>DC</sub> $\pm 10\%$		
<b>Input Current</b>	45mA Maximum (Unloaded)		
<b>Disable Current (TS Option)</b>	30mA Maximum (Pin 1=Ground)		
<b>Standby Current (PD Option)</b>	50 $\mu$ A Maximum (Pin 1=Ground)		
<b>Frequency Tolerance / Stability</b>	Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°C, Shock, and Vibration		$\pm 100$ ppm or $\pm 50$ ppm Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>	w/TTL Load	2.4V <sub>DC</sub> Minimum	$I_{OH} = -16$ mA
	w/HCMOS Load	$V_{DD} - 0.4V_{DC}$ Minimum	$I_{OH} = -16$ mA
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>	w/TTL Load or w/HCMOS Load	0.4V <sub>DC</sub> Maximum	$I_{OL} = +16$ mA
<b>Rise Time / Fall Time</b>	w/TTL Load	4 nSeconds Max (0.8V <sub>DC</sub> to 2.0V <sub>DC</sub> )	
	w/HCMOS Load	4 nSec Max (20% to 80% of waveform)	
<b>Duty Cycle</b>	at 1.4V <sub>DC</sub> w/TTL Load; at 50% of waveform w/HCMOS Load	50 $\pm 10$ (%) (Standard)	
	at 1.4V <sub>DC</sub> w/TTL Load ( $\leq 27.000$ MHz only), or	50 $\pm 5$ (%) (Optional)	
	at 50% of waveform w/HCMOS Load ( $\leq 50.000$ MHz Only)		
<b>Load Drive Capability /</b>	$\leq 50.000$ MHz	50pF HCMOS Load Maximum	
<b>Output Type-HCMOS</b>	$> 50.000$ MHz	15pF HCMOS Load Maximum	
<b>Load Drive Capability /</b>	$\leq 40.000$ MHz	10TTL Load Maximum	
	<b>Output Type-TTL</b>	$> 40.000$ MHz	5TTL Load Maximum
<b>Output Control Function</b>	TS	Tri-State	
	PD	Power Down	
<b>Output Control Function Input Voltage</b>	$V_{IH}$ : No Connection or $\geq 2.0V_{DC}$	Enables Output	
	$V_{IL}$ : (TS Option) $\leq 0.8V_{DC}$	Disable Output: High Impedance	
	$V_{IL}$ : (PD Option) $\leq 0.8V_{DC}$	Disable Output: Logic Low	
<b>Aging (at 25°C)</b>	$\pm 5$ ppm / year Maximum		
<b>Start Up Time</b>	10 mSeconds Maximum		
<b>Period Jitter: Absolute</b>	$\leq 33.000$ MHz	$\pm 250$ pSec Maximum, $\pm 100$ pSec Typical	
	$> 33.000$ MHz	$\pm 100$ pSec Maximum, $\pm 50$ pSec Typical	
<b>Period Jitter: One Sigma</b>	$\leq 33.000$ MHz	$\pm 50$ pSec Maximum	
	$> 33.000$ MHz	$\pm 30$ pSec Maximum	

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EP35	PACKAGE CERAMIC	VOLTAGE 5.0V	CLASS OS89	REV. DATE 01/04
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## PART NUMBERING GUIDE

### EP35 00 ET TTS L - 24.000M TR

**FREQUENCY TOLERANCE / STABILITY**  
00=±100ppm Max (Standard), 45=±50ppm Maximum

**OPERATING TEMP. RANGE**  
Blank=-20°C to 70°C (Standard)  
ET=-40°C to 85°C

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

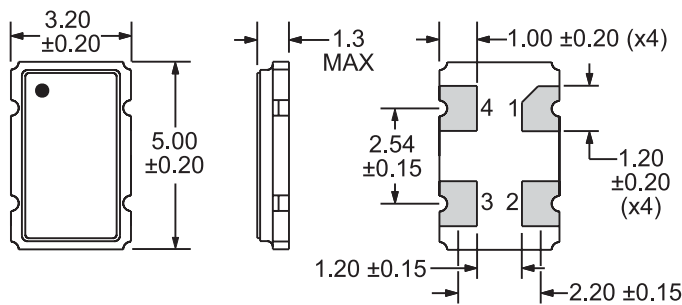
**OUTPUT CONTROL FUNCTION**  
TS=Tri-State, PD=Power Down

**AVAILABLE OPTIONS**  
Blank=Bulk (Standard)  
TR=Tape and Reel

**FREQUENCY**

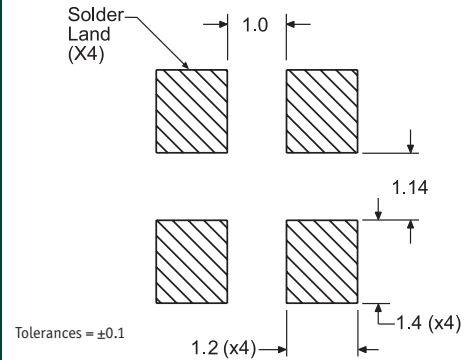
**OUTPUT TYPE**  
L=TTL, C=HCMOS

#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS

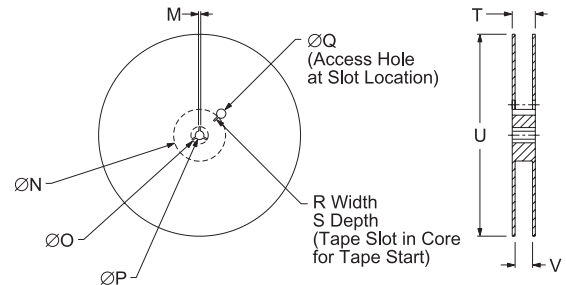
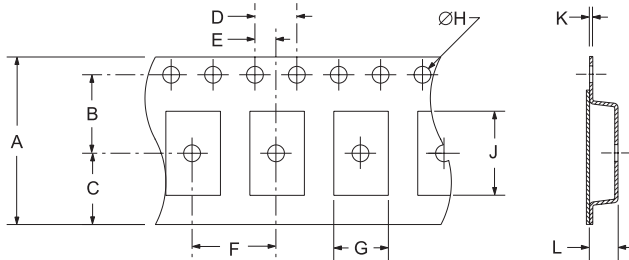


Pin 1: Tri-State or Power Down  
Pin 2: Case Ground  
Pin 3: Output  
Pin 4: Supply Voltage

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



#### TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	12.0±0.2	5.5±0.1	6.5±0.1	4.0±0.1	2.0±0.1
F	G	H	J	K	L
8.0±0.1	B0*	1.5+0.1-0.0	A0*	0.30±0.05	K0*

REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13.0±0.2	40 MIN
R	S	T	U	V	QTY/REEL
2.5 MIN	10 MIN	18.4 MAX	180 MAX	12.4+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: E XX.XXX — Frequency in MHz (5 Digits Maximum + Decimal)

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EP35	CERAMIC	5.0V	OS89	01/04