

EPSA22 Series



- Programmable Spread Spectrum Oscillators
- Low EMI LVCMOS Output
- +2.5V Supply Voltage
- Tri-State and Power Down Options
- Center Spread and Down Spread Modulation Options
- 4 Pad Ceramic SMD Package
- RoHS Compliant (Pb-Free)



ELECTRICAL SPECIFICATIONS

Nominal Frequency		2.000MHz to 166.000MHz
Operating Temperature Range		-40°C to 85°C
Storage Temperature Range		-55°C to 125°C
Supply Voltage (V_{DD})		2.5V _{DC} ±5%
Maximum Supply Voltage		-0.5V _{DC} to 3.2V _{DC}
Input Current	2.000MHz to 25.000MHz	15mA Maximum
	25.001MHz to 50.000MHz	18mA Maximum
	50.001MHz to 100.000MHz	22mA Maximum
	100.001MHz to 166.000MHz	25mA 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	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EPSA22	CERAMIC	2.5V	OS8G	10/10

PART NUMBERING GUIDE

EPSA22 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

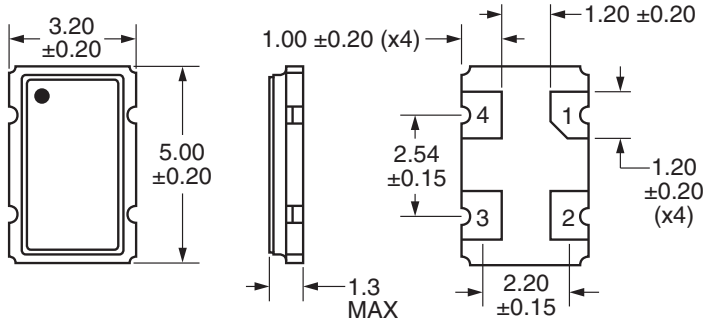
Blank=Bulk
TR=Tape and Reel

FREQUENCY

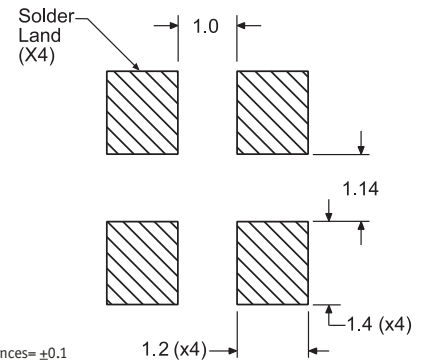
SPREAD SPECTRUM PERCENTAGE

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

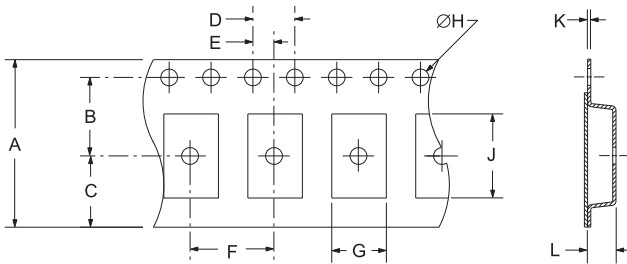


SUGGESTED SOLDER PAD LAYOUT
ALL DIMENSIONS IN MILLIMETERS

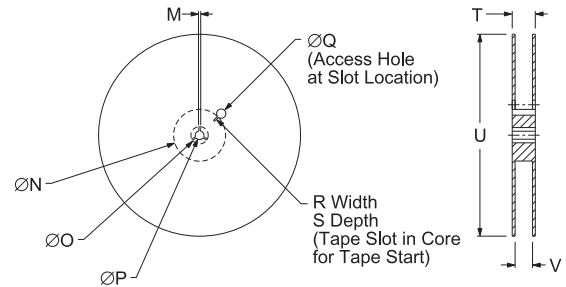


Pin 1: Tri-State or Power Down Pin 3: Output
Pin 2: Case Ground Pin 4: Supply Voltage

TAPE AND REEL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	16.0±0.3	7.5±0.15	6.75±0.15	4.0±0.1	2.0±0.05
F	G	H	J	K	L
	8.0±0.1	B0*	1.5+0.1-0.0	A0*	0.3±0.1



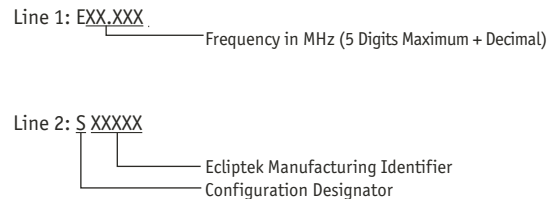
REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13.0±0.2	40 MIN
R	S	T	U	V	QTY/REEL
	2.5 MIN	10 MIN	22.4 MAX	360 MAX	16.4±2-0
					1,000

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500V
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Flammability	UL94-V0
Gross Leak test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A

MARKING SPECIFICATIONS



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