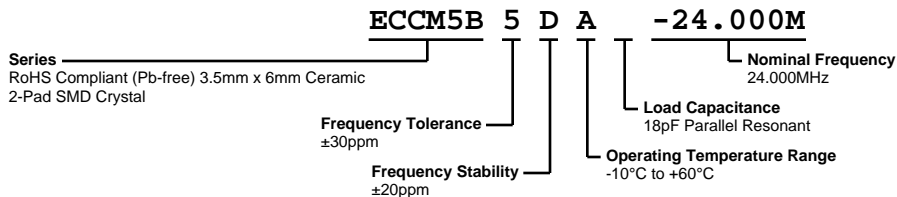


# ECCM5B5DA-24.000M



## ELECTRICAL SPECIFICATIONS

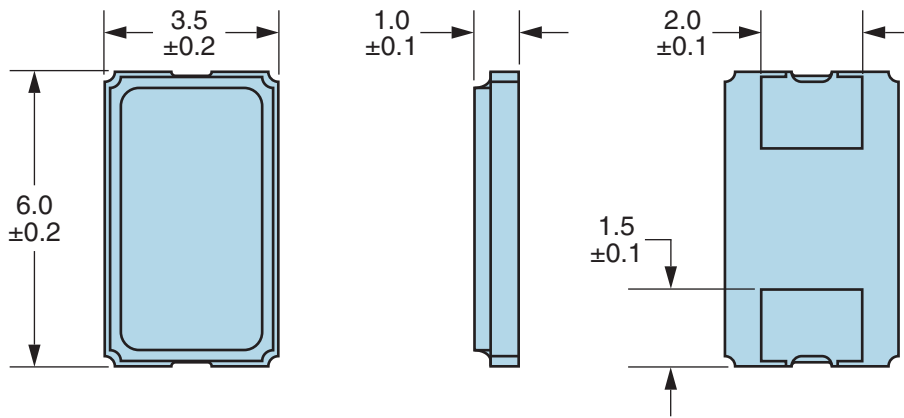
Nominal Frequency	24.000MHz
Frequency Tolerance	$\pm 30\text{ppm}$
Frequency Stability	$\pm 20\text{ppm}$
Aging at 25°C	$\pm 3\text{ppm/year}$ Maximum
Operating Temperature Range	$-10^{\circ}\text{C}$ to $+60^{\circ}\text{C}$
Load Capacitance	18pF Parallel Resonant
Shunt Capacitance (C0)	5pF Maximum
Equivalent Series Resistance	50 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	100 $\mu$ Watts Maximum
Spurious Response	-3dB Minimum; Fo to Fo +5000ppm
Storage Temperature Range	$-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$
Insulation Resistance	500 Megaohms Minimum at 100Vdc

## ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

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

# ECCM5B5DA-24.000M

## MECHANICAL DIMENSIONS (all dimensions in millimeters)



PIN	CONNECTION
1	Input/Output
2	Input/Output

LINE	MARKING
1	<b>E24.00</b> <i>E=Ecliptek Designator</i>
2	<b>XXYYZZ</b> <i>XX=Ecliptek Manufacturing Code</i> <i>Y=Last Digit of Year</i> <i>ZZ=Week of the Year</i>

## Recommended Solder Reflow Methods



### High Temperature Infrared/Convection

<b><math>T_s</math> MAX to <math>T_L</math> (Ramp-up Rate)</b>	3°C/second Maximum
<b>Preheat</b>	
- Temperature Minimum ( $T_s$ MIN)	150°C
- Temperature Typical ( $T_s$ TYP)	175°C
- Temperature Maximum ( $T_s$ MAX)	200°C
- Time ( $t_s$ MIN)	60 - 180 Seconds
<b>Ramp-up Rate (<math>T_L</math> to <math>T_p</math>)</b>	3°C/second Maximum
<b>Time Maintained Above:</b>	
- Temperature ( $T_L$ )	217°C
- Time ( $t_L$ )	60 - 150 Seconds
<b>Peak Temperature (<math>T_p</math>)</b>	260°C Maximum for 10 Seconds Maximum
<b>Target Peak Temperature (<math>T_p</math> Target)</b>	250°C +0/-5°C
<b>Time within 5°C of actual peak (<math>t_p</math>)</b>	20 - 40 seconds
<b>Ramp-down Rate</b>	6°C/second Maximum
<b>Time 25°C to Peak Temperature (t)</b>	8 minutes Maximum
<b>Moisture Sensitivity Level</b>	Level 1

## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 245°C

<b>T<sub>s</sub> MAX to T<sub>L</sub> (Ramp-up Rate)</b>	5°C/second Maximum
<b>Preheat</b>	
- Temperature Minimum (T <sub>s</sub> MIN)	N/A
- Temperature Typical (T <sub>s</sub> TYP)	150°C
- Temperature Maximum (T <sub>s</sub> MAX)	N/A
- Time (t <sub>s</sub> MIN)	30 - 60 Seconds
<b>Ramp-up Rate (T<sub>L</sub> to T<sub>p</sub>)</b>	5°C/second Maximum
<b>Time Maintained Above:</b>	
- Temperature (T <sub>L</sub> )	150°C
- Time (t <sub>L</sub> )	200 Seconds Maximum
<b>Peak Temperature (T<sub>p</sub>)</b>	245°C Maximum
<b>Target Peak Temperature (T<sub>p</sub> Target)</b>	245°C Maximum 2 Times / 230°C Maximum 1 Time
<b>Time within 5°C of actual peak (t<sub>p</sub>)</b>	10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time
<b>Ramp-down Rate</b>	5°C/second Maximum
<b>Time 25°C to Peak Temperature (t)</b>	N/A
<b>Moisture Sensitivity Level</b>	Level 1

### Low Temperature Manual Soldering

185°C Maximum for 10 seconds Maximum, 2 times Maximum.

### High Temperature Manual Soldering

260°C Maximum for 5 seconds Maximum, 2 times Maximum.