ECLIPTEK® CORPORATION

Marketing Bulletin

DATE: May 14, 2004

TO: Affected Customers

FROM: Mark Stoner

RE: Product Termination

To all concerned parties,

This bulletin is to notify all customers of the termination of the following Ecliptek series effective May 14th, 2004:

Series	Description	Recommended Replacement
EB71F81	5V OCXO, HCMOS, AT Cut	None
EB71F82	5V OCXO, HCMOS, SC Cut	None
EB72F81	3.3V OCXO, HCMOS, AT Cut	None
EB72F82	3.3V OCXO, HCMOS, SC Cut	None

Because of the circumstances surrounding this termination, there will be no end-of-life policy exercised. The series will be terminated with no purchasing or lifetime buy window available. We will however have a recommended alternative product for these series within the next ninety (90) days.

All of us at Ecliptek Corporation apologize for any inconvenience this may have caused and can assure you we are taking measures to insure this will not happen again in the future. If there are any questions pertaining to this bulletin, please feel free to contact me. Thank you for your cooperation.

Best Regards,

Mark W. Stoner
Director of Marketing
Ecliptek Corporation

STANDARD SPECIFICATIONS	
Nominal Frequency	1.544MHz to 44.736MHz
Initial Tolerance	*Measured at nominal Vdd and Vc* ±2.0ppm Maximum ±1.5ppm Maximum ±1.0ppm Maximum ±500ppb Maximum ±300ppb Maximum
Frequency Stability	±30ppb Maximum ±50ppb Maximum ±80ppb Maximum ±100ppb Maximum ±200ppb Maximum ±280ppb Maximum ±500ppb Maximum
Frequency Stability vs. Input Voltage	±20ppb Maximum (Vdd ±5%)
Frequency Stability vs. Aging (10 Years)	±3.0ppm Maximum
Frequency Stability vs. Aging (1 Day)	±3.0ppb Maximum
Frequency Stability vs. Aging (1 Year)	±500ppb Maximum
Frequency Stability vs. Load	±20ppb Maximum (Vload ±5%)
Warm Up Time	3 Minutes Maximum (to ±500ppb of final frequency at 1 hour at 25°C)
Operating Temperature Range	0°C to +50°C 0°C to +70°C (Not available with Frequency Stability of ±30ppb Maximum) -20°C to +70°C (Not available with Frequency Stability of ±30ppb Maximum; Not available with Frequency Stability of ±50ppb Maximum)
Supply Voltage	5.0Vdc ±5%
Power Consumption	2.2Watts Maximum at Steady State at 25°C, 3.0Watts Maximum during Warm Up
Output Voltage Logic High (Voh)	*IOH= -8mA* Vdd-0.5Vdc Minimum
Output Voltage Logic Low (Vol)	*IOL= +8mA* 0.5Vdc Maximum
Rise/Fall Time	*Measured at 20% to 80% of waveform* 10nSec Maximum over Nominal Frequency of 1.544MHz to 10MHz 6nSec Maximum over Nominal Frequency of 10.000001MHz to 44.736MHz
Duty Cycle	*Measured at 50% of waveform* 50% ±5%
Load Drive Capability	30pF HCMOS Load Maximum
Control Voltage	None (No Connect on Pin 1 and Pin 2) 2.5Vdc ±2.0Vdc
Control Voltage Range	0.0Vdc to Vdd
Frequency Deviation	*Referenced to Fo at Vc=2.5Vdc; Vdd=5.0Vdc* ±7ppm Minimum, ±20ppm Maximum
Crystal Cut	AT-Cut
Linearity	±10% Maximum
Reference Voltage Output	4.0Vdc ±0.3Vdc
Transfer Function	Positive Transfer Characteristic
Input Impedance	10kOhms Typical
Phase Noise	*Typical Values* -75dBc/Hz at 1Hz Offset, -100dBc/Hz at 10Hz Offset, -130dBc/Hz at 100Hz Offset, -140dBc/Hz at 1kHz Offset, -150dBc/Hz at 10kHz Offset
Storage Temperature Range	-55°C to +125°C

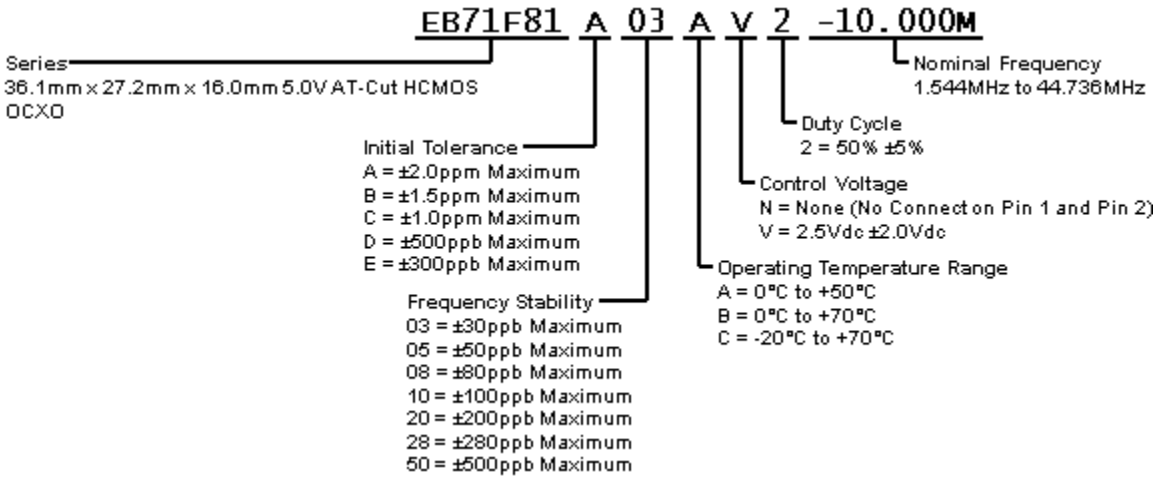
ENVIRONMENTAL & MECHANICAL			
Gross Leak Test	MIL-STD-883, Method 1014, Condition C	Lead Integrity	MIL-STD-883, Method 2004
Mechanical Shock	MIL-STD-202, Method 213 Condition C	Resistance to Soldering Heat	MIL-STD-202, Method 210
Resistance to Solvents	MIL-STD-202, Method 215	Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010	Vibration	MIL-STD-883, Method 2007 Condition A

Obsolete

SPECIFICATION CONTROL DRAWING

ECLIPTEK CORPORATION	**Drawing Number:** CSC30-320-001
Title: Ecliptek Generic (ECLMF) EB71F81 Series	
Revision: A	**Effectivity Date:** 10/22/2003
ECN Number: 9991	**PAGE 1 OF 3**
Approved By:	**Released By:**

PART NUMBERING GUIDE

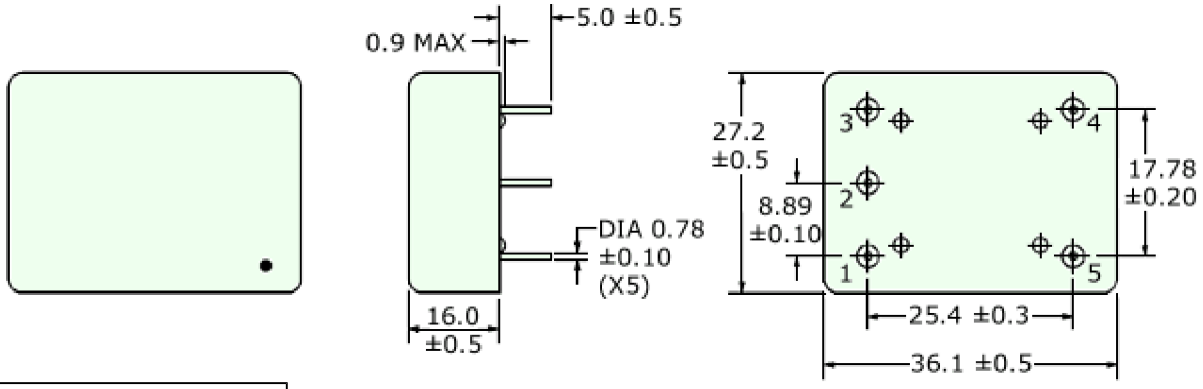


Pb-Free Status Information

Internal Pb Content	External Pb Content	Phase I	Phase II	Phase III	Pb-Free Status
>0.1% Pb	<0.1% Pb	TBD	TBD	TBD	Not Pb-Free

Note: Please refer to TEN02-030-000 for Phase definitions. Phases marked with an X are deemed complete, otherwise phases are marked TBD (not available now).

PHYSICAL DIMENSIONS



Pin	Connection
1	No Connect Or Voltage Control
2	No Connect Or Reference Voltage Output
3	Supply Voltage
4	Output
5	Case/Ground

MARKING

- Line 1: **ECLIPTEK**
- Line 2: **XX.XXXM**
  - XX.XXX = Nominal Frequency in MHz
  - M = Nominal Frequency Unit of Measure
    - M = MHz
- Line 3: **XXYZZ**
  - XX = Ecliptek Manufacturing Code
  - Y = Last Digit of the Year
  - ZZ = Week of the Year

NOTE: Pin 1 shall be marked with a dot. Marking shall conform to conditions listed in TQC41-001-000.

STANDARD SPECIFICATIONS	
Nominal Frequency	1.544MHz to 44.736MHz
Initial Tolerance	*Measured at nominal Vdd and Vc* ±2.0ppm Maximum ±1.5ppm Maximum ±1.0ppm Maximum ±500ppb Maximum ±300ppb Maximum
Frequency Stability	±20ppb Maximum ±30ppb Maximum ±50ppb Maximum ±80ppb Maximum ±100ppb Maximum ±200ppb Maximum ±280ppb Maximum ±500ppb Maximum
Frequency Stability vs. Input Voltage	±20ppb Maximum (Vdd ±5%)
Frequency Stability vs. Aging (10 Years)	±500ppb Maximum
Frequency Stability vs. Aging (1 Day)	±2.0ppb Maximum
Frequency Stability vs. Aging (1 Year)	±100ppb Maximum
Frequency Stability vs. Load	±20ppb Maximum (Vload ±5%)
Warm Up Time	1 Minute Maximum (to ±100ppb of final frequency at 1 hour at 25°C)
Operating Temperature Range	0°C to +50°C 0°C to +70°C (Not available with Frequency Stability of ±20ppb Maximum) -20°C to +70°C (Not available with Frequency Stability of ±20ppb Maximum; Not available with Frequency Stability of ±30ppb Maximum)
Supply Voltage	5.0Vdc ±5%
Power Consumption	2.2Watts Maximum at Steady State at 25°C, 3.0Watts Maximum during Warm Up
Output Voltage Logic High (Voh)	*IOH= -8mA* Vdd-0.5Vdc Minimum
Output Voltage Logic Low (Vol)	*IOL= +8mA* 0.5Vdc Maximum
Rise/Fall Time	*Measured at 20% to 80% of waveform* 10nSec Maximum over Nominal Frequency of 1.544MHz to 10MHz 6nSec Maximum over Nominal Frequency of 10.000001MHz to 44.736MHz
Duty Cycle	*Measured at 50% of waveform* 50% ±5%
Load Drive Capability	30pF HCMOS Load Maximum
Control Voltage	None (No Connect on Pin 1 and Pin 2) 2.5Vdc ±2.0Vdc
Control Voltage Range	0.0Vdc to Vdd
Frequency Deviation	*Referenced to Fo at Vc=2.5Vdc; Vdd=5.0Vdc* ±0.5ppm Minimum, ±2.0ppm Maximum
Crystal Cut	SC-Cut
Linearity	±10% Maximum
Reference Voltage Output	4.0Vdc ±0.3Vdc
Transfer Function	Positive Transfer Characteristic
Input Impedance	10kOhms Typical
Phase Noise	*Typical Values* -80dBc/Hz at 1Hz Offset, -120dBc/Hz at 10Hz Offset, -140dBc/Hz at 100Hz Offset, -145dBc/Hz at 1kHz Offset, -150dBc/Hz at 10kHz Offset
Storage Temperature Range	-55°C to +125°C

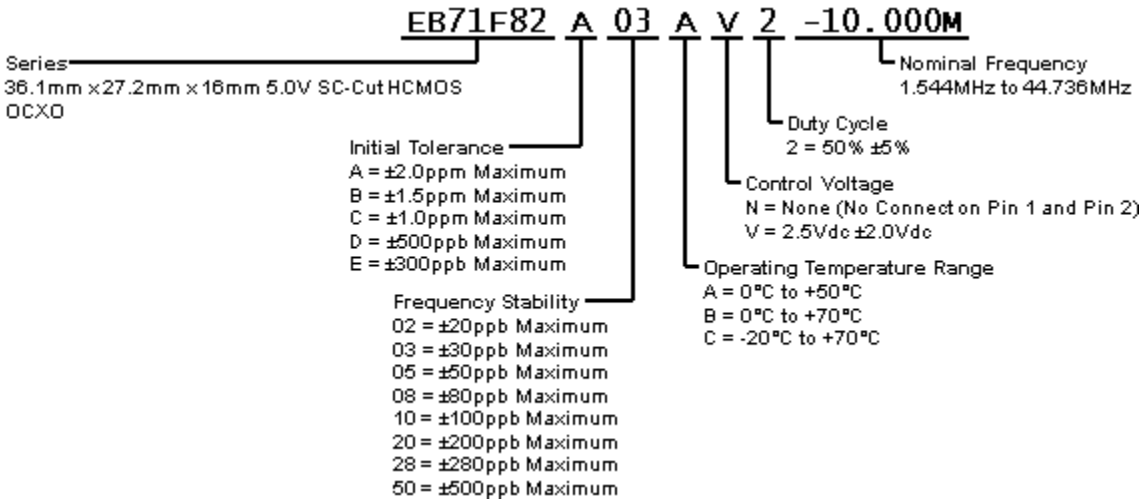
ENVIRONMENTAL & MECHANICAL			
Gross Leak Test	MIL-STD-883, Method 1014, Condition C	Lead Integrity	MIL-STD-883, Method 2004
Mechanical Shock	MIL-STD-202, Method 213 Condition C	Resistance to Soldering Heat	MIL-STD-202, Method 210
Resistance to Solvents	MIL-STD-202, Method 215	Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010	Vibration	MIL-STD-883, Method 2007 Condition A

Obsolete

SPECIFICATION CONTROL DRAWING

ECLIPTEK® CORPORATION	**Drawing Number:** CSC30-400-001
Title: Ecliptek Generic (ECLMF) EB71F82 Series	
Revision: A	**Effectivity Date:** 10/22/2003
ECN Number: 9995	**PAGE 1 OF 3**
Approved By:	**Released By:**

PART NUMBERING GUIDE

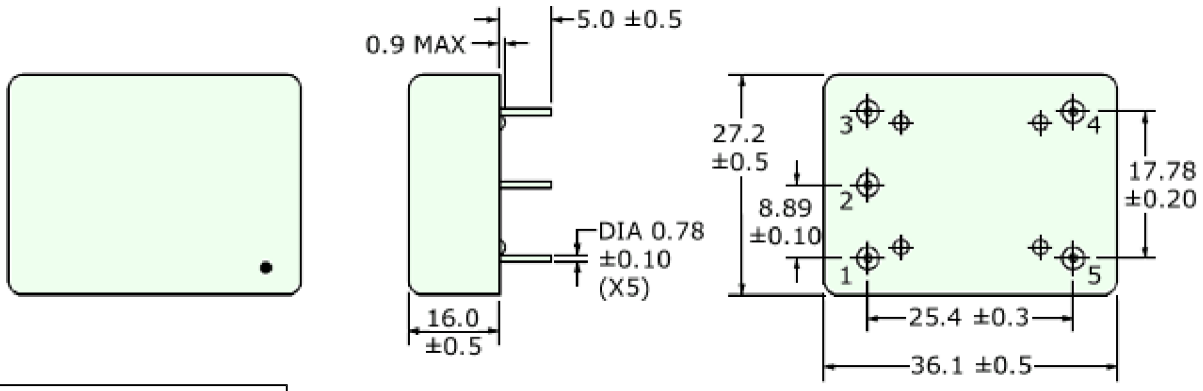


Pb-Free Status Information

Internal Pb Content	External Pb Content	Phase I	Phase II	Phase III	Pb-Free Status
>0.1% Pb	<0.1% Pb	TBD	TBD	TBD	Not Pb-Free

Note: Please refer to TEN02-030-000 for Phase definitions. Phases marked with an X are deemed complete, otherwise phases are marked TBD (not available now).

PHYSICAL DIMENSIONS



Pin	Connection
1	No Connect Or Voltage Control
2	No Connect Or Reference Voltage Output
3	Supply Voltage
4	Output
5	Case/Ground

MARKING

- Line 1: **ECLIPTEK**
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- Line 3: **XXYZZ**
  - XX = Ecliptek Manufacturing Code
  - Y = Last Digit of the Year
  - ZZ = Week of the Year

NOTE: Pin 1 shall be marked with a dot. Marking shall conform to conditions listed in TQC41-001-000.

STANDARD SPECIFICATIONS	
Nominal Frequency	1.544MHz to 44.736MHz
Initial Tolerance	*Measured at nominal Vdd and Vc* ±2.0ppm Maximum ±1.5ppm Maximum ±1.0ppm Maximum ±500ppb Maximum ±300ppb Maximum
Frequency Stability	±80ppb Maximum (Not available with Operating Temperature Range of -20°C to +70°C; Not available with Operating Temperature Range of 0°C to +70°C) ±100ppb Maximum (Not available with Operating Temperature Range of -20°C to +70°C) ±200ppb Maximum (Not available with Operating Temperature Range of -20°C to +70°C) ±280ppb Maximum ±500ppb Maximum
Frequency Stability vs. Input Voltage	±20ppb Maximum (Vdd ±5%)
Frequency Stability vs. Aging (10 Years)	±3.0ppm Maximum (after 72 hours of operation)
Frequency Stability vs. Aging (1 Day)	±3.0ppb Maximum (after 72 hours of operation)
Frequency Stability vs. Aging (1 Year)	±500ppb Maximum (after 72 hours of operation)
Frequency Stability vs. Load	±20ppb Maximum (Vload ±5%)
Warm Up Time	3 Minutes Maximum (to ±500ppb of final frequency at 1 hour at 25°C)
Operating Temperature Range	0°C to +50°C 0°C to +70°C -20°C to +70°C
Supply Voltage	3.3Vdc ±5%
Power Consumption	2.2Watts Maximum at Steady State at 25°C, 3.0Watts Maximum during Warm Up
Output Voltage Logic High (Voh)	*IOH=-4mA* 2.6Vdc Minimum
Output Voltage Logic Low (Vol)	*IOL=+4mA* 0.4Vdc Maximum
Rise/Fall Time	*Measured at 20% to 80% of waveform* 10nSec Maximum over Nominal Frequency of 1.544MHz to 10MHz 6nSec Maximum over Nominal Frequency of 10.000001MHz to 44.736MHz
Duty Cycle	*Measured at 50% of waveform* 50% ±5%
Load Drive Capability	15pF HCMOS Load Maximum
Control Voltage	None (No Connect on Pin 1 and Pin 2) 1.65Vdc ±1.35Vdc
Control Voltage Range	0.0Vdc to Vdd
Frequency Deviation	*Referenced to Fo at Vc=1.65Vdc; Vcc=3.3Vdc* ±7ppm Minimum, ±20ppm Maximum
Crystal Cut	AT-Cut
Linearity	±10% Maximum
Reference Voltage Output	2.8Vdc ±0.2Vdc
Transfer Function	Positive Transfer Characteristic
Input Impedance	10kOhms Typical
Phase Noise	*Typical Values* -75dBc/Hz at 1Hz Offset, -100dBc/Hz at 10Hz Offset, -130dBc/Hz at 100Hz Offset, -140dBc/Hz at 1kHz Offset, -150dBc/Hz at 10kHz Offset
Storage Temperature Range	-55°C to +125°C

ENVIRONMENTAL & MECHANICAL			
Gross Leak Test	MIL-STD-883, Method 1014, Condition C	Lead Integrity	MIL-STD-883, Method 2004
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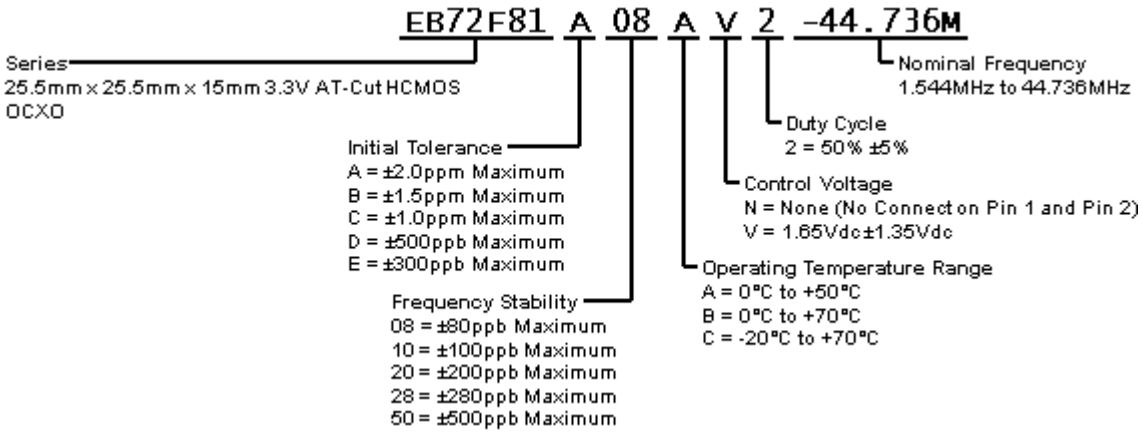
Resistance to Solvents	MIL-STD-202, Method 215	Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010	Vibration	MIL-STD-883, Method 2007 Condition A

Obsolete

SPECIFICATION CONTROL DRAWING

ECLIPTEK CORPORATION	**Drawing Number:** CSC30-330-001
Title: Ecliptek Generic (ECLMF) EB72F81 Series	
Revision: B	**Effectivity Date:** 1/23/2004
ECN Number: 9993	**PAGE 1 OF 3**
Approved By:	**Released By:**

PART NUMBERING GUIDE



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Internal Pb Content	External Pb Content	Phase I	Phase II	Phase III	Pb-Free Status
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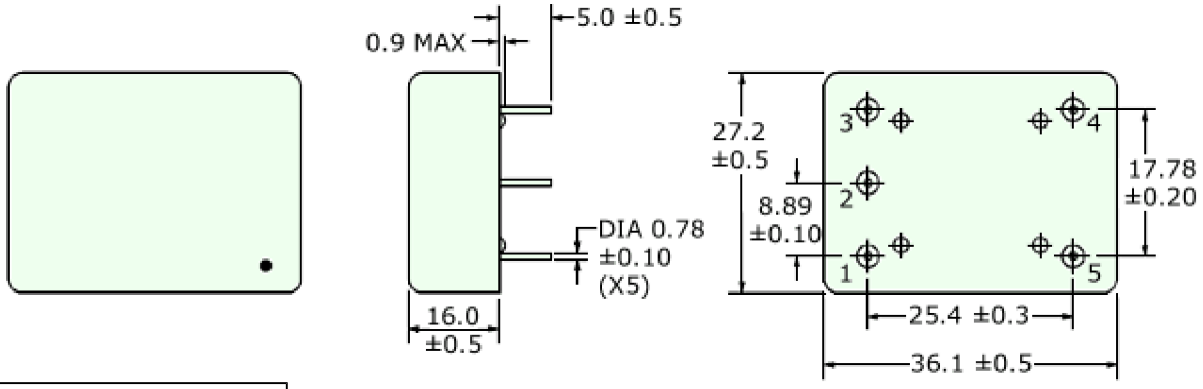
PHYSICAL DIMENSIONS



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NOTE: Pin 1 shall be marked with a dot. Marking shall conform to conditions listed in TQC41-001-000.

STANDARD SPECIFICATIONS	
Nominal Frequency	1.544MHz to 44.736MHz
Initial Tolerance	*Measured at nominal Vdd and Vc* ±2.0ppm Maximum ±1.5ppm Maximum ±1.0ppm Maximum ±500ppb Maximum ±300ppb Maximum
Frequency Stability	±30ppb Maximum (Not available with Operating Temperature Range of -20°C to +70°C; Not available with Operating Temperature Range of 0°C to +70°C) ±50ppb Maximum (Not available with Operating Temperature Range of -20°C to +70°C) ±80ppb Maximum ±100ppb Maximum ±200ppb Maximum ±280ppb Maximum ±500ppb Maximum
Frequency Stability vs. Input Voltage	±20ppb Maximum (Vdd ±5%)
Frequency Stability vs. Aging (10 Years)	±500ppb Maximum (after 72 hours of operation)
Frequency Stability vs. Aging (1 Day)	±2.0ppb Maximum (after 72 hours of operation)
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Frequency Stability vs. Load	±20ppb Maximum (Vload ±5%)
Warm Up Time	1 Minutes Maximum (to ±100ppb of final frequency at 1 hour at 25°C)
Operating Temperature Range	0°C to +50°C 0°C to +70°C -20°C to +70°C
Supply Voltage	3.3Vdc ±5%
Power Consumption	2.2Watts Maximum at Steady State at 25°C, 3.0Watts Maximum during Warm Up
Output Voltage Logic High (Voh)	*IOH=-4mA* 2.6Vdc Minimum
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Rise/Fall Time	*Measured at 20% to 80% of waveform* 10nSec Maximum over Nominal Frequency of 1.544MHz to 10MHz 6nSec Maximum over Nominal Frequency of 10.000001MHz to 44.736MHz
Duty Cycle	*Measured at 50% of waveform* 50% ±5%
Load Drive Capability	15pF HCMOS Load Maximum
Control Voltage	None (No Connect on Pin 1 and Pin 2) 1.65Vdc ±1.35Vdc
Control Voltage Range	0.0Vdc to Vdd
Frequency Deviation	*Referenced to Fo at Vc=1.65Vdc; Vcc=3.3Vdc* ±0.5ppm Minimum, ±2.0ppm Maximum
Crystal Cut	SC-Cut
Linearity	±10% Maximum
Reference Voltage Output	2.8Vdc ±0.2Vdc
Transfer Function	Positive Transfer Characteristic
Input Impedance	10kOhms Typical
Phase Noise	*Typical Values* -80dBc/Hz at 1Hz Offset, -120dBc/Hz at 10Hz Offset, -140dBc/Hz at 100Hz Offset, -145dBc/Hz at 1kHz Offset, -150dBc/Hz at 10kHz Offset
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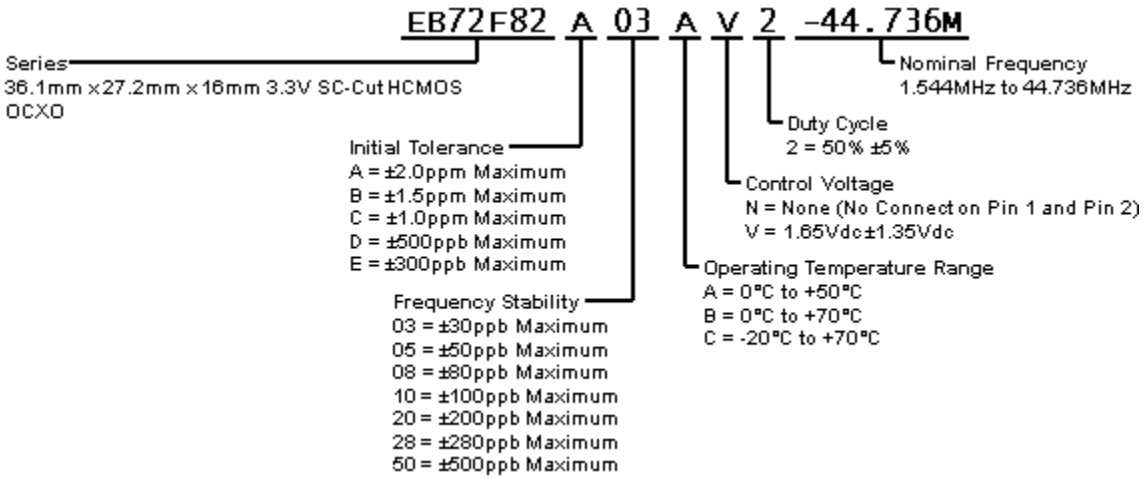
Obsolete

SPECIFICATION CONTROL DRAWING

ECLIPTEK® CORPORATION	**Drawing Number:** CSC30-420-001
Title: Ecliptek Generic (ECLMF) EB72F82 Series	
Revision: B	**Effectivity Date:** 1/23/2004
ECN Number: 9997	**PAGE 1 OF 3**
Approved By:	**Released By:**

PART NUMBERING GUIDE



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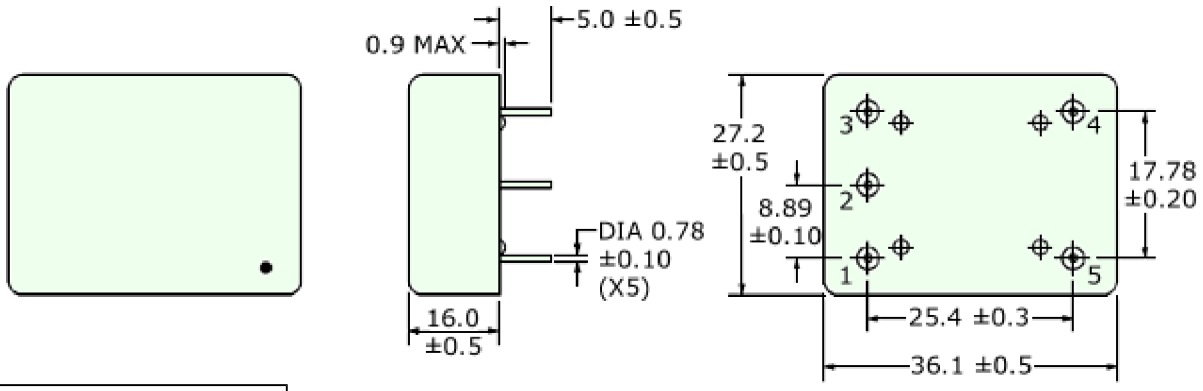

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