




Space Qualified

Xsis Electronics is a leading supplier of Advance Design Rad-Hard Crystal Oscillators for Space Applications. Some of the Space Programs where Xsis Oscillators have been used in flight hardware and our standard Space Qualified Oscillator Specifications (SCDs) are shown below. For TID, SEL and SEU data or any other special requirements, please contact us.

Program Name	Description
Spacebuss 3000B	Alcatel Telecommunication Satellite Program
Amos 3	Israel Telecommunication Satellite
Cryosat	ESA Earth Observation Satellite
HTV	Japanese Space Vehicle to Space Station
TerraSar-X	German Earth Observation Satellite
Rapid Eye	ESA Earth Observation Satellite
Lisa Pathfinder	ESA/NASA Earth Observation Satellite
ISSR Mass Memory	Japanese Project
Express AM33, AM44	Russian Telecommunication Satellite

SPACE QUALIFIED OSCILLATORS

Click "Type Number" to open a Detail (pdf Version) Specification Sheet

Type Number	Supply Voltage	Output Type	Output Enable	Frequency Range	Package Outline
XE60S - A00	5.0 VDC	HC/ACMOS	Yes	125 Hz - 90.0 MHz	 14 Pin DIP
XE60S - B00	5.0 VDC	TTL	Yes	125 Hz - 90.0 MHz	
XE60S - L00	3.3 VDC	HC/ACMOS/LVTTL	Yes	125 Hz - 125.0 MHz	
XE60S - N00	2.5 VDC	HC/ACMOS	Yes	125 Hz - 120.0 MHz	
XE61S - A00	5.0 VDC	HC/ACMOS	Yes	125 Hz - 90.0 MHz	 4 Pin DIP
XE61S - B00	5.0 VDC	TTL	Yes	125 Hz - 90.0 MHz	
XE61S - L00	3.3 VDC	HC/ACMOS/LVTTL	Yes	125 Hz - 125.0 MHz	
XE61S - N00	2.5 VDC	HC/ACMOS	Yes	125 Hz - 120.0 MHz	
XE66S - A00	5.0 VDC	HC/ACMOS	Yes	450 KHz - 90.0 MHz	 TO-5 8 Pin (Round)
XE66S - B00	5.0 VDC	TTL	Yes	450 KHz - 90.0 MHz	
XE66S - L00	3.3 VDC	HC/ACMOS/LVTTL	Yes	450 KHz - 100.0 MHz	
XE66S - N00	2.5 VDC	HC/ACMOS	Yes	450 KHz - 70.0 MHz	
XE63S - A00	5.0 VDC	HC/ACMOS	Yes	400 KHz - 90.0 MHz	9 x 14 mm
XE63S - B00	5.0 VDC	TTL	Yes	400 KHz - 90.0 MHz	

XE63S - L00	3.3 VDC	HC/ACMOS/LVTTL	Yes	400 K Hz - 100.0 MHz	
XE63S - N00	2.5 VDC	HC/ACMOS	Yes	400 K Hz - 70.0 MHz	
XE64S - A00	5.0 VDC	HC/ACMOS	Yes	450 K Hz - 90.0 MHz	7 x 9 mm
XE64S - L00	3.3 VDC	HC/ACMOS/LVTTL	Yes	450 K Hz - 125.0 MHz	
XE64S - N00	2.5 VDC	HC/ACMOS	Yes	450 K Hz - 120.0 MHz	"J" Leads
XE641S - A00	5.0 VDC	HC/ACMOS	Yes	450 KHz - 90.0 MHz	7 x 9 mm
XE641S - L00	3.3 VDC	HC/ACMOS/LVTTL	Yes	450 KHz - 125.0 MHz	
XE641S - N00	2.5 VDC	HC/ACMOS	Yes	450 KHz - 120.0 MHz	"Formed" Leads
XE642S - A00	5.0 VDC	HC/ACMOS	Yes	450 KHz - 90.0 MHz	7 x 9 mm
XE642S - L00	3.3 VDC	HC/ACMOS/LVTTL	Yes	450 KHz - 125.0 MHz	
XE642S - N00	2.5 VDC	HC/ACMOS	Yes	450 KHz - 120.0 MHz	"Gull Wing" Leads
XE643S - A00	5.0 VDC	HC/ACMOS	Yes	450 KHz - 90.0 MHz	7 x 9 mm
XE643S - L00	3.3 VDC	HC/ACMOS/LVTTL	Yes	450 KHz - 125.0 MHz	
XE643S - N00	2.5 VDC	HC/ACMOS	Yes	450 KHz - 120.0 MHz	"Straight" Leads
XE7S - A0	5.0 VDC	HC/ACMOS	Yes	500 KHz - 90.0 MHz	5 x 7 mm
XE7S - L0	3.3 VDC	HC/ACMOS	Yes	500 KHz - 125.0 MHz	
XE7S - N0	2.5 VDC	HC/ACMOS	Yes	500 KHz - 120.0 MHz	Lead Less
XE71S - Ax	5.0 VDC	HC/ACMOS	Yes	500 KHz - 90.0 MHz	5 x 7 mm
XE71S - Lx	3.3 VDC	HC/ACMOS	Yes	500 KHz - 125.0 MHz	
XE71S - Nx	2.5 VDC	HC/ACMOS	Yes	500 KHz - 120.0 MHz	"Formed" Leads
XE72S - Ax	5.0 VDC	HC/ACMOS	Yes	500 KHz - 90.0 MHz	5 x 7 mm
XE72S - Lx	3.3 VDC	HC/ACMOS	Yes	500 KHz - 125.0 MHz	
XE72S - Nx	2.5 VDC	HC/ACMOS	Yes	500 KHz - 120.0 MHz	"Gull-wing" Leads
XE73S - Ax	5.0 VDC	HC/ACMOS	Yes	500 KHz - 90.0 MHz	5 x 7 mm
XE73S - Lx	3.3 VDC	HC/ACMOS	Yes	500 KHz - 125.0 MHz	
XE73S - Nx	2.5 VDC	HC/ACMOS	Yes	500 KHz - 120.0 MHz	"Straight" Leads

High Temperature

Xsis Electronics offers high reliability crystal oscillators for extremely high temperature applications. These oscillators are designed and processed by Xsis Electronics to operate over an extended temperature range of -55°C to 230°C. High temperature materials and proven processes are utilized to provide high reliability and long life at extreme temperatures.

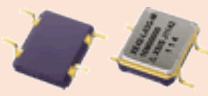

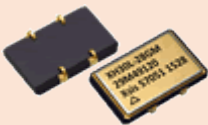
High Temperature Crystal Oscillators manufactured by Xsis Electronics are designed for High Temperature and extreme environment applications such as, Down Hole Drilling Measurements, Jet Engine Sensors, High Temperature Avionics, High Temperature coupled with High Shock & Vibrations, etc.

Exceptionally good frequency aging characteristics are achieved by the use of precision quartz crystals manufactured using in-house proprietary processes developed and improved over 39+ years of experience in manufacturing crystal oscillators for Military (QPL) and space applications. All oscillators are tested 100% over the operating temperature range.

HIGH TEMPERATURE CRYSTAL OSCILLATORS

Click "Type Number" to open a Detail (pdf Version) Specification Sheet

Type Number	Supply Voltage	Output Type	Output Enable	Frequency Range	Package Outline
XH6A	5.0 VDC	HCMOS/TTL	YES	500 KHz - 40 MHz	 5 x 7 mm Lead Less
XH6L	3.3 VDC	HCMOS/LVTTL	YES	500 KHz - 40 MHz	
XH6N	2.5 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH6R	1.8 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH40A	5.0 VDC	HCMOS/TTL	YES	500 KHz - 40 MHz	 7 x 9 mm "J" Leads
XH40L	3.3 VDC	HCMOS/LVTTL	YES	500 KHz - 40 MHz	
XH40N	2.5 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH40R	1.8 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH41A	5.0 VDC	HCMOS/TTL	YES	500 KHz - 40 MHz	 7 x 9 mm "Formed" Leads
XH41L	3.3 VDC	HCMOS/LVTTL	YES	500 KHz - 40 MHz	
XH41N	2.5 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH41R	1.8 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH42A	5.0 VDC	HCMOS/TTL	YES	500 KHz - 40 MHz	7 x 9 mm
XH42L	3.3 VDC	HCMOS/LVTTL	YES	500 KHz - 40 MHz	

XH42N	2.5 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH42R	1.8 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH43A	5.0 VDC	HCMOS/TTL	YES	500 KHz - 40 MHz	<p>7 x 9 mm</p> 
XH43L	3.3 VDC	HCMOS/LVTTL	YES	500 KHz - 40 MHz	
XH43N	2.5 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH43R	1.8 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH30A	5.0 VDC	HCMOS/TTL	YES	500 KHz - 40 MHz	<p>9 x 14 mm</p> 
XH30L	3.3 VDC	HCMOS/LVTTL	YES	500 KHz - 40 MHz	
XH30N	2.5 VDC	HCMOS	YES	500 KHz - 40 MHz	
XH30R	1.8 VDC	HCMOS	YES	500 KHz - 40 MHz	

"Gull Wing" Leads

"Straight" Leads

"J" Leads

Updated Mar 16, 2018

QPL (M55310)

Xsis is qualified on the following QPL (M55310) Products:

[M55310/08](#), [M55310/09](#), [M55310/11](#), [M55310/14](#), [M55310/15](#), [M55310/16](#) [M55310/17](#),
[M55310/18](#), [M55310/19](#), [M55310/21](#), [M55310/26](#), [M55310/27](#), [M55310/30](#) [M55310/33](#), [M55310/34](#),
[M55310/35](#), [M55310/36](#), [M55310/37](#), [M55310/38](#), [M55310/39](#), & [M55310/40](#).

QPL (M55310) OSCILLATORS

Click "Type Number" to open a Detail (pdf Version) Specification Sheet

Type Number	Supply Voltage	Output Type	Output Enable	Frequency Range	Package Outline
M55310/08	5.0 VDC	TTL	No	100.0 Hz - 50.0 MHz	14 Pin  DIP
M55310/09	5.0 VDC	TTL	No	400.0 KHz - 60.0 MHz	8 Pin  Round
M55310/11	5 to 15 VDC	CMOS	No	50 KHz - 10.0 MHz	14 Pin  DIP
M55310/14	5.0 VDC	TTL	No	100.0 Hz - 25.0 MHz	14 Pin  DIP
M55310/15	5 to 15 VDC	CMOS	No	5.25 Hz - 10.0 MHz	14 Pin  DIP
M55310/16	5.0 VDC	TTL	No	100.0 Hz - 80.0 MHz	14 Pin  DIP
M55310/17	5.0 VDC	TTL (GATED)	Yes	250.0 KHz - 50.0 MHz	14 Pin  DIP
M55310/18	5 to 15 VDC	CMOS	No	5.25 Hz - 15.0 MHz	14 Pin  DIP
M55310/19	5.0 VDC	TTL	No	1.0 MHz - 60.0 MHz	.485" Sq.  LCC

M55310/21	5.0 VDC	TTL	No	1.0 MHz - 60.0 MHz	20 Leads FP 
M55310/26 (14 Pin)	5.0 VDC	HCMOS	No	10.0 KHz - 65.0 MHz	14 Pin DIP 
M55310/26 (4 Pin)	5.0 VDC	HCMOS	No	10.0 KHz - 65.0 MHz	4 Pin DIP 
M55310/27	5.0 VDC	HCMOS	Yes	1.0 MHz - 85.0 MHz	 9 x 14mm "J" Leads
M55310/30	3.3 VDC	HCMOS	Yes	450.0 KHz - 85.0 MHz	
M55310/33	5.0 VDC	HCMOS	Yes	500 KHz - 85.0 MHz	 7 x 9 mm "J" Leads
M55310/34	3.3 VDC	HCMOS	Yes	500 KHz - 85.0 MHz	
M55310/35	2.5 VDC	HCMOS	Yes	1.0 MHz - 100.0 MHz	
M55310/36	1.8 VDC	HCMOS	Yes	1.0 MHz - 100.0 MHz	
M55310/37	5.0 VDC	HCMOS	Yes	500 KHz - 85.0 MHz	 7 x 9 mm "Formed" Leads
M55310/38	3.3 VDC	HCMOS	Yes	500 KHz - 85.0 MHz	
M55310/39	2.5 VDC	HCMOS	Yes	1.0 MHz - 100.0 MHz	
M55310/40	1.8 VDC	HCMOS	Yes	1.0 MHz - 100.0 MHz	

Updated Sep 04, 2018

Standard - Military


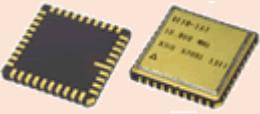

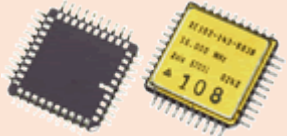
Xsis Electronics Standard Crystal Oscillators utilize advanced designs and hybrid microcircuit technology as per MIL-PRF-55310 and MIL-PRF-38534. These oscillators are designed and processed for Military and Aerospace applications and can withstand high shock and vibration. Exceptionally good frequency aging characteristics are achieved by the use of precision quartz crystals manufactured using in-house proprietary processes. Contact Xsis Engineering for your special requirements.

MILITARY / AEROSPACE OSCILLATORS

Click "Type Number" to open a Detail (pdf Version) Specification Sheet

Type Number	Supply Voltage	Output Type	Output Enable	Frequency Range	Package Outline
XC5A	5.0 VDC	HCMOS/TTL	YES	500 KHz - 105 MHz	5 x 7 mm  Lead Less
XC5L	3.3 VDC	HCMOS/TTL	YES	500 KHz - 160 MHz	
XC5N	2.5 VDC	HCMOS	YES	500 KHz - 135 MHz	
XC5R	1.8 VDC	HCMOS	YES	500 KHz - 100 MHz	
XE51A	5.0 VDC	HCMOS/TTL	Yes	500 KHz - 100 MHz	5 x 7 mm  "Formed" Leads
XE51L	3.3 VDC	HCMOS/TTL	Yes	500 KHz - 160 MHz	
XE51N	2.5 VDC	HCMOS	Yes	500 KHz - 135 MHz	
XE51R	1.8 VDC	HCMOS	Yes	500 KHz - 100 MHz	
XE52A	5.0 VDC	HCMOS/TTL	Yes	500 KHz - 100 MHz	5 x 7 mm  "Gull Wing" Leads
XE52L	3.3 VDC	HCMOS/TTL	Yes	500 KHz - 160 MHz	
XE52N	2.5 VDC	HCMOS	Yes	500 KHz - 135 MHz	
XE52R	1.8 VDC	HCMOS	Yes	500 KHz - 100 MHz	
XE53A	5.0 VDC	HCMOS/TTL	Yes	500 KHz - 100 MHz	5 x 7 mm  "Straight" Leads
XE53L	3.3 VDC	HCMOS/TTL	Yes	500 KHz - 160 MHz	
XE53N	2.5 VDC	HCMOS	Yes	500 KHz - 135 MHz	
XE53R	1.8 VDC	HCMOS	Yes	500 KHz - 100 MHz	
XE40 - 100	5 VDC	TTL	Yes	450 KHz - 100 MHz	7 x 9 mm  "J" Leads
XE40 - 200	5 VDC	HC/ACMOS	Yes	450 KHz - 100 MHz	
XE40 - L00	3.3 VDC	HC/ACMOS/LV TTL	Yes	450 KHz - 160 MHz	
XE40 - N00	2.5 VDC	LVHCMOS	Yes	450 KHz - 135 MHz	
XE40 - R00	1.8 VDC	LVHCMOS	Yes	450 KHz - 100 MHz	

XE41 - 100	5 VDC	TTL	Yes	450 KHz - 100 MHz	 <p>7 x 9 mm "Formed" Leads</p>
XE41 - 200	5 VDC	HC/ACMOS	Yes	450 KHz - 100 MHz	
XE41 - L00	3.3 VDC	LVHCMOS	Yes	450 KHz - 160 MHz	
XE41 - N00	2.5 VDC	LVHCMOS	Yes	450 KHz - 135 MHz	
XE41 - R00	1.8 VDC	LVHCMOS	Yes	450 KHz - 100 MHz	
XE42 - 100	5 VDC	TTL	Yes	450 KHz - 100 MHz	 <p>7 x 9 mm "Gull Wing" Leads</p>
XE42 - 200	5 VDC	HC/ACMOS	Yes	450 KHz - 100 MHz	
XE42 - L00	3.3 VDC	LVHCMOS	Yes	450 KHz - 160 MHz	
XE42 - N00	2.5 VDC	LVHCMOS	Yes	450 KHz - 135 MHz	
XE42 - R00	1.8 VDC	LVHCMOS	Yes	450 KHz - 100 MHz	
XE43 - 100	5 VDC	TTL	Yes	450 KHz - 100 MHz	 <p>7 x 9 mm "Straight" Leads</p>
XE43 - 200	5 VDC	HC/ACMOS	Yes	450 KHz - 100 MHz	
XE43 - L00	3.3 VDC	HC/ACMOS/LV TTL	Yes	450 KHz - 160 MHz	
XE43 - N00	2.5 VDC	LVHCMOS	Yes	450 KHz - 135 MHz	
XE43 - R00	1.8 VDC	LVHCMOS	Yes	450 KHz - 100 MHz	
XE30 - 100	5 VDC	TTL	Yes	400 KHz - 90 MHz	 <p>9 x 14 mm "J" Leads</p>
XE30 - 200A	5 VDC	HC/ACMOS	Yes	400 KHz - 90 MHz	
XE30 - L00	3.3 VDC	HC/ACMOS/TTL	Yes	400 KHz - 100 MHz	
XE20 - 100	5 VDC	TTL	Yes	400 KHz - 90 MHz	 <p>TO (Round)</p>
XE20 - 200A	5 VDC	HC/ACMOS	Yes	400 KHz - 90 MHz	
XE20 - L00A	3.3 VDC	HC/ACMOS/TTL	Yes	400 KHz - 100 MHz	
XE15 - 100	5 VDC	TTL	Yes	100 KHz - 90 MHz	 <p>4 Pin Half DIP</p>
XE15 - 200A	5 VDC	HC/ACMOS	Yes	100 KHz - 90 MHz	
XE15 - L00	3.3 VDC	HC/ACMOS/TTL	Yes	100 KHz - 100 MHz	
X100	5 VDC	TTL	Yes	60 Hz - 100 MHz	 <p>14 Pin DIP</p>
M100	5 VDC	TTL	No	60 Hz - 60 MHz	
E100	5 VDC	TTL	No	60 Hz - 25 MHz	
X200	5 to 15 VDC	CMOS	No	1.5Hz - 12 MHz	
X200A (B)	5 VDC	HC/ACMOS	Yes	5 Hz - 100 MHz	
X3200	3.3 VDC	LVHCMOS	Yes	100 KHz - 160 MHz	
XN00	2.5 VDC	LVHCMOS	Yes	100 KHz - 135 MHz	
XR00	1.8 VDC	LVHCMOS	Yes	100 KHz - 100 MHz	
X300	- 5.2 VDC	ECL	No	10 MHz - 220 MHz	

X300A	- 4.5 VDC	ECL	No	10 MHz - 220 MHz	<p>4 Pin DIP</p> 
T100	5 VDC	TTL	Yes	60 Hz - 100 MHz	
T200	5 to 15 VDC	CMOS	No	1.5 Hz - 12 MHz	
T200A (B)	5 VDC	HC/ACMOS	Yes	5 Hz - 100 MHz	
T3200	3.3 VDC	LVHCMOS	Yes	100 KHz - 160 MHz	
TN00	2.5 VDC	LVHCMOS	Yes	100 KHz - 135 MHz	
TR00	1.8 VDC	LVHCMOS	Yes	100 KHz - 100 MHz	
T300	-5.2 VDC	ECL	No	10 MHz - 220 MHz	
T300A	-4.5 VDC	ECL	No	10 MHz - 220 MHz	
XE10 - 100	5 VDC	TTL	Yes	200 KHz - 90 MHz	<p>LCC</p> 
XE10 - 200A	5 VDC	HC/ACMOS	Yes	200 KHz - 90 MHz	
XE10 - L00	3.3 VDC	HC/ACMOS	Yes	200 KHz - 100 MHz	<p>Surface Mount</p>
XE101 - 100	5 VDC	TTL	Yes	200 KHz - 90 MHz	<p>"J" Leads</p> 
XE101 - 200A	5 VDC	HC/ACMOS	Yes	200 KHz - 90 MHz	
XE101 - L00	3.3 VDC	HC/ACMOS	Yes	400 KHz - 100 MHz	<p>Surface Mount</p>
XE102 - 100	5 VDC	TTL	Yes	400 KHz - 90 MHz	<p>Gull Wing Leads</p> 
XE102 - 200A	5 VDC	HC/ACMOS	Yes	400 KHz - 90 MHz	
XE102 - L00	3.3 VDC	HC/ACMOS	Yes	400 KHz - 100 MHz	

Surface Mount

Updated Dec 15, 2015

QPL Crystal Units

Xsis is qualified on the following QPL (MIL-PRF-3098) Crystal Units:

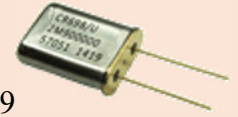
[CR55/U](#), [CR60/U](#), [CR61/U](#), [CR64/U](#), [CR67/U](#), [CR69/U](#) [CR72/U](#),
[CR76/U](#), [CR77/U](#), [CR78/U](#), [CR79/U](#), [CR81/U](#) [CR84/U](#), [CR97/U](#),
[CR106/U](#), [CR117/U](#), [CR130/U](#), [CR152/U](#)

QPL (MIL-PRF-3098) CRYSTAL UNITS

Click "Type Number" to open a Detail (pdf Version) Specification Sheet

Type Number	Slash Sheet	Mode	Load (pF)	Frequency Range (MHz)	Package Outline
CR55/U	33	3rd	Series	17.000 - 61.000	 HC-49
CR60/U	38	Fund.	Series	5.000 - 20.000	
CR61/U	39	3rd	Series	17.000 - 61.000	
CR64/U	42	Fund.	30	2.900 - 20.000	
CR67/U	45	3rd	Series	17.000 - 61.000	
CR69/U	47	Fund.	30	2.900 - 25.000	
CR72/U	50	3rd	Series	17.000 - 61.000	 HC-50
CR76/U	53	3rd	Series	16.000 - 61.000	 HC-49
CR77/U	55	3rd	Series	17.000 - 61.000	 HC50
CR78/U	62	Fund.	30	2.900 - 20.000	
CR79/U	63	Fund.	Series	2.900 - 20.000	
CR81/U	58	3rd	Series	17.000 - 61.000	
CR84/U	61	3rd	Series	17.000 - 61.000	
CR97/U35	72	Fund.	32	8.000 - 10.000	 HC-49
CR106/U	82	Fund.	32	10.500 - 11.500	
CR117/U	93	3rd	Series	30.000 - 61.000	 HC-50

CR139/U	118	Fund.	30	20.000 - 22.000
CR152/U	133	3rd	Series	16.000 - 61.000



HC-49

Updated Apr 15, 2016

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