

Oscillator Qualification Report

Reliability By Design

Qualification Description:

The information contained herein represents proof of product Reliability and Performance for the Quartz Crystal Oscillators listed below in accordance with the generic specification after exposure to a variety of environmental and mechanical events that occur during the installation and operational lifetime of the product. Upon conclusion of the testing the Quartz Crystal Oscillators continued to operate within specification limits, demonstrating its capability of reliable operation throughout its lifetime.

The purpose of this report is to present the Qualification test results of the Quartz Crystal Oscillators. These lead-free crystal oscillators utilize a proven, low cost, package technology and universal contact configuration. The product series is suited for Telecom, Multimedia, Network Adapter Cards, Routers, Modems, and other hand held products. In specific cases, qualification may be presumed by similarity, e.g. When a group of devices is in the same functional category, manufactured with the same design rules, crystal fabrication and processing line/location, oscillator assembly, and the same packaged with the same packaging technology, and on the same packaging line/location, they can be qualified by extension.

Lot Background Information:

Qual Test Date:	Aug-2007	Qual By Extension:	none
Product Type:	Seam Seal CXO	Qual Part Numbers:	FD3600006 (S1633A-36.0000)
Package & Series:	Cer 5.0x3.2mm FD Series		FD5000021 (S1634B-50.0000)
Supplier Code - COO:	A - Taiwan		FD6660006 (S1633B-66.6667)
Qual Test Number:	FD Series L1 Qual Test		

Pericom's Qualification Test Results:

Stress Test	Test Procedure	Test Conditions	Duration	# of Lots	Samples per Lot	Results Pass/Fail
Electrical Characterization	per Datasheet	over operating temperature range		3	10	10 / 0
Dynamic High Temp	JESD22-A108	1008 hrs 3.465V 125°C	168 hrs	3	80	80 / 0
Operating Life		1008 hrs 3.465V 125°C	500 hrs	3	80	80 / 0
(DHTOL)		1008 hrs 3.465V 125°C	1000 hrs	3	80	80 / 0
	Based on 240 units completing 1,008 hours of DHTOL	FIT Rate (55C, eV=0.8, CL=60%, 3.465V)	16.7			
		Calculated MTBF (hours)	59,970,010			
Temp Cycle Test	JESD22-A104	-55°C to 120°C, 1000cyc	1000 cycles	3	25	25 / 0
High Temp Storage	JESD22-A103	1000hrs, 150°C, unpowered	168 hrs	3	15	15 / 0
(HTS)		1000hrs, 150°C, unpowered	500 hrs	3	15	15 / 0
		1000hrs, 150°C, unpowered	1000 hrs	3	15	15 / 0
Biased HAST	JESD22-A110	130°C, 85% R.H., 33.3psia, Vmax	96 hours	3	15	15 / 0
Vibration	JESD22-B103	20g peak, 10-2Khz, 1.52mm, 20 minutes/sweep, 3 axis	6 sweep /axis	3	15	15 / 0
Mechanical Shock	JESD22-B104	1500g peak, 0.5ms pulse, 6 axis	5 pulse/axis	3	15	15 / 0
Physical Dimensions	MIL-STD-883	Method 2016		3	5	5 / 0
External Visual	MIL-STD-883	Method 2009		3	5	5 / 0
Solderability	JESD22-B102	260°C, >95% coverage	5 seconds	3	5	5 / 0
Low Temp Storage	JESD22-A108	-55°C	100 hours	3	10	10 / 0
Resistance to Solder Heat	J-STD-020	260°C for 10 seconds		3	10	10 / 0
Latch Up Test	EIA JESD78	Report available by Device				
ESD-HBM Test	JESD22-A114	Report available by Device				

Qualification by Extension Information:

It is valid to use the reliability data of a particular process technology and apply to all products within this process technology family. All parts within the same family are designed to the same rules (layout & electrical), and manufacturing is controlled by SPC. Within a product family, a device can only be fabricated on one process technology option.

If there are any questions about this qualification, please contact Quality Support at: customerquestion@pericom.com

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*** A company of  **PERICOM Semiconductor Corporation** ***

Qual Test Date: Aug-2007
 Qual Test Product: Seam Seal CXO
 Mfg-Fab-Process: Cer 5.0x3.2mm FD Series
 Qual Device(s): FD3600006 (S1633A-36.0000) FD5000021 (S1634B-50.0000) FD6660006 (S1633B-66.6667)

Qual By Extension: Active Part Numbers using the Mfg/Process at the time of the Qualification:

FD0100001	FD1600016	FD2700022	FD4000140	FD6660026		
FD0100003	FD1600018	FD2700032	FD4000141	FD6660029		
FD0100004	FD1630007	FD2700033	FD4000142	FD6750002		
FD0150001	FD1630010	FD2700035	FD4000143	FD7100001		
FD0180009	FD1800003	FD2700038	FD4000145	FD7200006		
FD0180010	FD1920006	FD2700041	FD4000150	FD7420005		
FD0200013	FD1940002	FD2900001	FD4100002	FD7420007		
FD0200015	FD2000001	FD3000015	FD4470001	FD7500010		
FD0200016	FD2000044	FD3040002	FD4755000	FD7500014		
FD0240001	FD2000052	FD3120001	FD4800004	FD7770001		
FD0350006	FD2000055	FD3330001	FD4800005	FD7770006		
FD0350009	FD2210002	FD3330025	FD4800038	FD7770009		
FD0360006	FD2210005	FD3430004	FD4800040	FD8500001		
FD0360016	FD2250001	FD3460001	FD4800045	FDA000007		
FD0400001	FD2400024	FD3600008	FD4800048	FDA000008		
FD0400005	FD2400025	FD3600010	FD4800049	FDA000009		
FD0400017	FD2400027	FD3840001	FD4800052	FDA000018		
FD0440004	FD2450017	FD3840006	FD4910004	FDA000019		
FD0500003	FD2450019	FD3840015	FD5000007	FDA800001		
FD0600005	FD2450023	FD4000001	FD5000008			
FD0610002	FD2490002	FD4000005	FD5000011			
FD0670002	FD2500002	FD4000006	FD5000021			
FD0730013	FD2500009	FD4000007	FD5000023			
FD0960002	FD2500024	FD4000018	FD5000033			
FD1000011	FD2500028	FD4000027	FD5000035			
FD1000016	FD2500040	FD4000032	FD5000040			
FD1100008	FD2500051	FD4000057	FD5400002			
FD1120009	FD2500057	FD4000058	FD5400005			
FD1200028	FD2500061	FD4000071	FD5400012			
FD1200030	FD2500063	FD4000075	FD5400018			
FD1200033	FD2500064	FD4000081	FD6000002			
FD1200034	FD2500066	FD4000096	FD6000015			
FD1220016	FD2500067	FD4000101	FD6250011			
FD1280002	FD2500068	FD4000109	FD6250012			
FD1300015	FD2600001	FD4000115	FD6600009			
FD1300023	FD2600003	FD4000118	FD6600012			
FD1430011	FD2600033	FD4000120	FD6600016			
FD1430016	FD2600034	FD4000128	FD6660004			
FD1430020	FD2600036	FD4000130	FD6660006			
FD1440001	FD2660003	FD4000133	FD6660012			