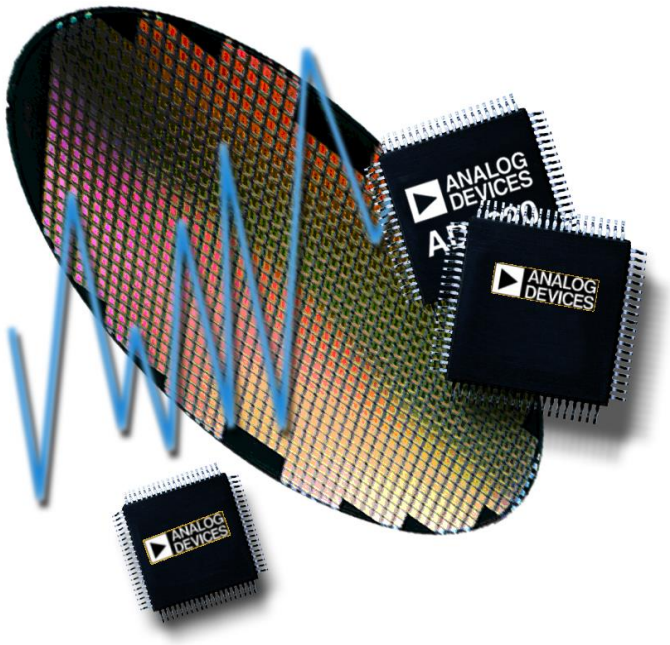

Reliability Report

Report Title: ADPM12160 New Product Qualification

Report Number: 23577

Revision: B

Date: 09 February 2026

Summary

This report documents the successful completion of the reliability qualification requirements for the release of the ADPM12160 product in a 14-MCML package. The ADPM12160 is a Non-Isolated Quarter-Brick DC/DC Power Module.

Package/Assembly Product Characteristics

Table 1: Package/Assembly Product Characteristics - 14-MCML at SUPLET

Product Characteristics	Product(s) to be qualified
Generic/Root Part #	ADPM12160
Package	14-MCML
Body Size (mm)	58.40 x 36.80 x 15.10
Assembly Location	SUPLET
Substrate Material	BT
SMD Attach Material	Alpha OM-338
Heat Sink Material	Al 6061-T6
Lead Finish	Au

Package/Assembly Test Results

Table 2: Package/Assembly Test Results - MCML at SUPLET

Test Name	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS
High Temperature Operating Life (HTOL)	JESD22-A108	Ta=85°C, Biased, 1,000 Hours	ADPM12160	Q23577.1.HO1	0/77
High Temperature Operating Bias (HTOB)	IPC 9592 5.2.5	Tj=103C, Biased, Load=95% +/-5%, Power Cycled, 1,000 Hours	ADPM12160	Q23577.1.HTOB1	0/30
High Temperature Operating Bias (HTOB)[1]	IPC 9592 5.2.5	Tj=103C, Biased, Load=95% +/-5%, Power Cycled, 1,000 Hours	ADPM12160	Q24155.1.HTOB1	0/30
High Temperature Storage Life (HTSL)	JESD22-A103	130C, 1,000 Hours	ADPM12160	Q23577.1.HS1	0/3
Power and Temp Cycling (PTC)	IPC 9592 5.2.7	-40C/+85C, 3000 Cycles, Biased, 50% Load	ADPM12160	Q23577.1.PT1	0/3
Power and Temp Cycling (PTC)[1]	IPC 9592 5.2.7	-40C/+85C, 3000 Cycles, Biased, 50% Load	ADPM12160	Q24155.1.PT1	0/3
Temperature Cycling (TC)	IPC 9592 5.2.6	-40C to 125C, 700 Cycles	ADPM12160	Q23577.1.TC1	0/30
				Q23577.2.TC2	0/30
				Q23577.3.TC3	0/30
Temperature Cycling (TC)[1]	IPC 9592 5.2.6	-40C to 125C, 700 Cycles	ADPM12160	Q24155.1.TC1	0/30
Temperature Humidity Bias (THB)	IPC 9592 5.2.4	85°C, 85%RH, Biased, 1,000 Hours	ADPM12160	Q23577.1.TH1	0/30
				Q23577.2.TH2	0/30
				Q23577.3.TH3	0/30
Temperature Humidity Bias (THB)[1]	IPC 9592 5.2.4	85°C, 85%RH, Biased, 1,000 Hours	ADPM12160	Q24155.1.TH1	0/30
Vibration	JESD22-B103	Condition 1, 20-2000Hz, 20g	ADPM12160	Q23577.1.Vib1	0/3
Mechanical Shock	JESD22-B110	Condition A, 500g	ADPM12160	Q23577.1.Mech1	0/3

[1] These samples were subjected to preconditioning at MSL 3 with 3x reflow peak temp of 245°C prior to the start of the stress test.

ESD and Latch-Up Test Results

Table 3: ESD Test Result

ESD Model	Generic/Root Part #	Package	ESD Test Spec	RC Network	Highest Pass Level	Class
FICDM	ADPM12160	14-MCML	JS-002	1Ω, Cpkg	±500V	C2a
HBM	ADPM12160	14-MCML	ESDA/JEDEC JS-001	1.5kΩ, 100pF	±2000V	2

Table 4: Latch Up Test Result

LU Test Spec	Generic/Root Part #	Passing Current	Passing Over-Voltage	Temperature (T_A)	Class
JESD78	ADPM12160	+100mA, -100mA	+75V	85°C	II

Approvals

Reliability Engineer: Kristen Perron