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Texas Instruments Enhanced Plastic Products Reliability Report

(Subject To Attached Disclaimers)

Device Type/Device Family:	REF50**MDREP
Package Type:	8/D
Wafer Fabrication Facility:	DM5
Assembly/Test Facility:	MLA
Compiled:	05/11

Biased Life Test

Test Method:	JESD22-A108
Test Condition:	125°C / 1000 hours or equivalent
Sample Size:	542
Rejects:	0
Activation Energy (eV):	0.7
Equivalent Device Hours:	1.29E+07
Failure Rate (FIT)*:	71.4

*Derated to +55°C with a 6

Package Related Tests

Description	Condition	Referenced Method	Sample Size
Biased Humidity or HAST	85°C / 85% / 1000 hours or 130°C / 85% / 96 hours	JESD22-A101 or JESD22-A110	231
Autoclave	121°C @ 2 atmospheres absolute for 96 hours	JESD22-A102	231
Temperature Cycle	-65°C to +150°C non-biased for 500 cycles or equivalent	JESD22-A104	231
High Temp Storage	150°C / 1,000 hours	JESD22-A103-A	77

* Preconditioning per JEDEC Std. 22

Initial Product Qualification

The subject Enhanced Plastic device, device family, and/or package family have passed Texas Instruments product qualification as

Description	Condition	Referenced Method	Sampl
Electrical Characterization	TI Data Sheet	N/A	3 lot(s)/
Electrostatic Discharge Sensitivity	HBM MM CDM	EIA/JESD22-A114 EIA/JESD22-A115 JESD22-C101	3 Units/ N/ N/
Latch-up	Per Technology	EIA/JESD78	6/
Physical Dimensions	TI Data Sheet	EIA/JESD22- B100	15
Thermal Impedance	Theta-JA on board	EIA/JESD51	Per Pin-I
Bias Life Test	125°C / 1000 hours or equivalent	JESD22-A108	77
Biased Humidity or HAST	85°C / 85% / 1000 hours or 130°C / 85% / 96 hours	JESD22-A101 JESD22-A110	77
Autoclave	121°C @ 2 atmospheres absolute for 96 hours	JESD22-A102	77
Temperature Cycle	-65°C to +150°C non-biased for 1000 cycles or equivalent	JESD22-A104	77
High Temp Storage	150°C / 1,000 hours	JESD22-A103-A	77
Solder Heat	260°C for 10 seconds	JESD22-B106	N/
Solderability	Condition A (steam age for 8 hours)	ANSI/J-STD-002-92	22
Bond Strength	-	ASTM F-459	30
Moisture Sensitivity	Surface Mount Only	J-STD-020-A	12

* Preconditioning per JEDEC Std. 2

Suplemental Device Characteristics

Master Die: CREF5020CGNP, CREF5040CJNP,CREF5050CLNP
Wafer Fab: DM5
Fab Process: 50HPA07
Fab Technology: CMOS
Die Revision: C
Passivation: Nitride
Metal 1: Ti/TiN/AlCu/TiN
Metal 2: Ti/TiN/AlCu/TiN

Assembly Site: MLA
Pin/Package Type: 8/D
Lead Composition: CU
Lead Finish: NIPDAU
Mount Compound: ABLESTIK 829(
Bond: 0.96 MILS
Mold Compound: SUMITOMO EM
Die Thickness: 10.00 ± 0.500 M

Quality and Reliability Data Disclaimer

The attached quality and reliability information is specific to the TI Enhanced Plastic product family of plastic encapsulated commercial-off-the-shelf (COTS) semiconductor products and components. Due to possible differences in product assembly and test baselines, this information is NOT APPLICABLE to TI standard, industrial, or automotive catalog commercial products.

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2, Method A112/A113

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