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Sherman, TX 75090

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Texas Instruments Enhanced Plastic Products Reliability Report

(Subject To Attached Disclaimers)

Device Type/Device Family:	INA193AMDBVREP
Package Type:	5/DBV
Wafer Fabrication Facility:	HIJI FAB (Hiji, Japan)
Assembly/Test Facility:	Carsem M
Compiled:	04/11

Biased Life Test

Test Method:	JESD22-A108
Test Condition:	125°C / 1000 hours or equivalent
Sample Size:	6822
Rejects:	3
Activation Energy (eV):	0.5
Equivalent Device Hours:	1.12E+08
Failure Rate (FIT)*:	37.26

*Derated to +55°C with a 60% Confidence Level

Package Related Tests

Description	Condition	Referenced Method	Sample Size	Rejects		
Biased Humidity or HAST	85°C / 85% / 1000 hours or 130°C / 85% / 96 hours	JESD22-A101 or JESD22-A110	385	0	*	
Autoclave	121°C @ 2 atmospheres absolute for 96 hours	JESD22-A102	308	0	*	
Temperature Cycle	-65°C to +150°C non-biased for 500 cycles or equivalent	JESD22-A104	392	0	*	
High Temp Storage	150°C / 1,000 hours	JESD22-A103-A	49	0	*	(Also See E

* Preconditioning per JEDEC Std. 22, Method A112/A113

Initial Product Qualification

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

Description	Condition	Referenced Method	Sample Size	
Electrical Characterization	TI Data Sheet	N/A	1 lot(s)/30 Units	
Electrostatic Discharge Sensitivity	HBM MM CDM	EIA/JESD22-A114 EIA/JESD22-A115 JESD22-C101	3 Units/voltage 3 Units/voltage 3 Units/voltage	
Latch-up	Per Technology	EIA/JESD78	6/0	
Physical Dimensions	TI Data Sheet	EIA/JESD22- B100	15/0	
Thermal Impedance	Theta-JA on board	EIA/JESD51	Per Pin-Package	
Bias Life Test	125°C / 1000 hours or equivalent	JESD22-A108	385/0	
Biased Humidity or HAST	85°C / 85% / 1000 hours or 130°C / 85% / 96 hours	JESD22-A101 JESD22-A110	385/0	*
Autoclave	121°C @ 2 atmospheres absolute for 96 hours	JESD22-A102	308/0	*
Temperature Cycle	-65°C to +150°C non-biased for 500 cycles or equivalent	JESD22-A104	392/0	*
High Temp Storage	150°C / 1,000 hours	JESD22-A103-A	49/0	*
Solder Heat	260°C for 10 seconds	JESD22-B106	15/0	
Solderability	Condition A (steam age for 8 hours)	ANSI/J-STD-002-92	66/0	
Bond Strength	-	ASTM F-459	30/0	
Moisture Sensitivity	Surface Mount Only	J-STD-020-A	LVL2-260	

* Preconditioning per JEDEC Std. 22, Method A112/A113

Suplemental Device Characteristics

Master Die: JINA1820CAPZ
Wafer Fab: HIJI FAB (Hiji, Japan)
Fab Process: LBC-SOI
Fab Technology: BiCMOS
Die Revision: C
Passivation: 6kA SiO2 / 11kA +/- 1kA of SIN
Metal 1: 300A TIW / 4.6kA AlCu(.5%) / 3
Metal 2: 3kA TIW / 6kA AlCu(.5%) / 300A

Assembly Site: Carsem M
Pin/Package Type: 5/DBV
Lead Composition: Cu
Lead Finish: NiPdAu
Mount Compound: ABLESTIK 8290
Bond: Au/1.0 mil
Mold Compound: HITACHI CEL9220HF13
Die Thickness: 25 Mils BG @ CAR to 9.5Mils

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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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Enteprise Qualification Report)

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