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## Texas Instruments Enhanced Plastic Products Reliability Report

(Subject To Attached Disclaimers)

Device Type/Device Family: TPS76901SDBVR  
Package Type: 5 / DBV  
Wafer Fabrication Facility: DFAB  
Assembly/Test Facility: Lensen  
Compiled: 12/11

### Biased Life Test

Test Method: JESD22-A108  
Test Condition: 125°C / 1000 hours or equivalent  
Sample Size: 9204  
Rejects: 2  
Activation Energy (eV): 0.7  
Equivalent Device Hours: 3.04E+08  
Failure Rate (FIT)\*: 10.22

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

### Package Related Tests

<u>Description</u>	<u>Condition</u>	<u>Referenced Method</u>	<u>Sample Size</u>	<u>Rejects</u>	
Biased Humidity or HAST	85°C / 85% / 1000 hours or 130°C / 85% / 96 hours	JESD22-A101 JESD22-A110	231	0	*
Autoclave	121°C @ 2 atmospheres absolute for 96 hours	JESD22-A102	231	0	*
Temperature Cycle	-65°C to +150°C non-biased for 1000 cycles or equivalent	JESD22-A104	231	0	*
High Temp Storage	150°C / 1,000 hours	JESD22-A103-A	231	0	*

\* 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:

<u>Description</u>	<u>Condition</u>	<u>Referenced Method</u>	<u>Sample Size</u>	
Electrical Characterization	TI Data Sheet	N/A	3 lot(s)/90 Units	
Electrostatic Discharge Sensitivity	HBM	EIA/JESD22-A114	3 Units/voltage	
	MM	EIA/JESD22-A115	N/A	
	CDM	JESD22-C101	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	77/0	
Biased Humidity or HAST	85°C / 85% / 1000 hours or	JESD22-A101	77/0	*
	130°C / 85% / 96 hours	JESD22-A110		
Autoclave	121°C @ 2 atmospheres absolute for 96 hours	JESD22-A102	77/0	*
Temperature Cycle	-65°C to +150°C non-biased for 1000 cycles or equivalent	JESD22-A104	77/0	*
High Temp Storage	150°C / 1,000 hours	JESD22-A103-A	77/0	*
Solder Heat	260°C for 10 seconds	JESD22-B106	N/A	
Solderability	Condition A (steam age for 8 hours)	ANSI/J-STD-002-92	22/0	
Bond Strength	-	ASTM F-459	30/0	
Moisture Sensitivity	Surface Mount Only	J-STD-020-A	12/0	

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

### Supplemental Device Characteristics

Master Die: BLBDPX76901AW	Assembly Site: LEN
Wafer Fab: DFAB	Pin/Package Type: 5 / DBV
Fab Process: LBC-3S	Lead Composition: Cu
Fab Technology: BiCMOS	Lead Finish: NIPDAU
Die Revision: B	Mount Compound: SUMITOMO CRM-1033BF
Passivation: 12KACN	Bond: Au / 1.0 Mil
Metal 1: TiW/AISiCu.5	Mold Compound: Sumitomo G600
Metal 2: TiW/AISiCu.5	Die Thickness: 8mils

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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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