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Texas Instruments High Rel Products Reliability Report

Device Type/Device Family: SNJ54HCT540J
 Package Type: 20 CDIP (Ti Designator J)
 Wafer Fabrication Facility: Ti Sherman
 Assembly/Test Facility: Millennium MicroTech
 Compiled: 05/11

Biased Life Test

Test Method: JESD22-A108
 Test Condition: 125°C / 1000 hours & 150° / 500 hours
 Sample Size: 4041
 Rejects: 0
 Activation Energy (eV): .5
 Equivalent Device Hours: 106.3
 Failure Rate (FIT)*: 8.68
 *Derated to +55°C with a 60% Confidence Level

Group B Tests (Weekly by Package Family)

<u>Description</u>	<u>Condition</u>	<u>Referenced Method</u>	<u>Sample Size/Rejects</u>
B1 Resistance to Solvents		Mil Std 883 Method 2015	3/0
B2 Bond strength	Test condition F (FC)	Mil Std 883 Method 2011/2019/2027	22/0-3/0
B3 Solderability	Soldering temperature of 245C±5	Mil Std 883 Method 2003	22/0

Group C Test (Per 3 Month Period by Family)

<u>Description</u>	<u>Condition</u>	<u>Referenced Method</u>	<u>Sample Size/Rejects</u>
C1 Steady-state life test	125C/1000Hrs 4.6V	Mil Std 883 Method 1005	45/0
End point electrical			

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<u>Group D Tests (Annually by Package Family)</u>				
<u>Description</u>	<u>Condition</u>	<u>Referenced Method</u>	<u>Sample Size/Rejects</u>	
D1 Physical Dimensions		Mil Std 883 Method 2016	15/0	*
D2 Lead Integrity		Mil Std 883 Method 2004 & 2028	45/0	*
Seal(Fine and Gross)		Mil Std 883 Method 1014	45/0	*
D3 Thermal Shock	-65°C to +150°C 15 cycles	Mil Std 883 Method 1011		
Temperature Cycle	-65°C to +150°C 100 cycles	Mil Std 883 Method 1010		*
Moisture Resistance		Mil Std 883 Method 1004		
Seal(Fine and Gross)		Mil Std 883 Method 1014		*
Visual examination		Mil Std 883 Method 1004 & 1010		
End point electrical D4			15/0	*
Mechanical Shock		Mil Std 883 Method 2002		
Variable Freq Vibration		Mil Std 883 Method 2007		*
Constant acceleration		Mil Std 883 Method 2001		
Seal		Mil Std 883 Method 1014		*
Visual Examination		Mil Std 883 Method 2009		
End point electrical D5			15/0	*
Salt Atmosphere		Mil Std 883 Method 1009		
Seal		Mil Std 883 Method 1014		*
Visual Examination		Mil Std 883 Method 1009	15/0	
D6 Internal Water Vapor		Mil Std 883 Method 1018	3/0	
D7 Adhesion of Lead Finish		Mil Std 883 Method 2025	15/0	

Supplemental Device Characteristics

Die Revision:	G	Assembly Site:	Ti Taiwan
Master Die:	SHCTN540GPN	Package Type:	J
Wafer Fab:	Ti Sherman	Pin Count:	20
Fab Technology:	HCT	Mold Compound:	Ceramic
Fab Process:	74HC-H	Mount Compound:	N/A
Process Code:	N/A	Bond:	Al
Lead Finish:	Pb/Sn	Lead Composition:	Alloy 42
Metal 1:	TiW/AICu2	Metal II	TiW/AICu2

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