DALLAS SEMICONDUCTOR MAXIM

Automotive Qualification Report

MAX2140ETH

			□			✓			✓			✓			✓		
			Lot # 1 (NEZ0C2037A)			Lot # 2 (N7N1A3256)			Lot # 3 (N7N1AA418A)			Lot # 4 (N7N1A4433C)			Lot # 5 (N7N1AA416A)		
Complete SDARS Receiver		Maxim Part Number	**MAX2140ETH**			MAX2821ETM (Note 2)			MAX2821ETM			MAX2821ETM			MAX2821ETM		
		Description (Note 1)	**AEC-Q100**			Maxim			Maxim			Maxim			Maxim		
		Operating Temperature	**-40C to +85C**			-40C to +85C			-40C to +85C			-40C to +85C			-40C to +85C		
		Temperature Grade	**3**			3			3			3			3		
Grade 3		Fab Location	**Maxim, Beaverton**			Maxim, Beaverton			Maxim, Beaverton			Maxim, Beaverton			Maxim, Beaverton		
		Fab Process	**G4MDBG**			G4MDBG			G4MDBG			G4MDBG			G4MDBG		
		Die	**WG18Z**			WD05Y			WD05Y			WD05Y			WD05Y		
44-Lead TQFN		Assembly Location	**ASAT**			ASAT			Anam-AICL Korea			Anam-AICL Korea			Anam-AICL Korea		
7 x 7 mm		Die Size (mils)	**128 x 115**			142 x 166			142 x 166			142 x 166			142 x 166		
		Package	**44-Lead TQFN (7x7)**			48-Lead TQFN (7x7)			48-Lead TQFN (7x7)			48-Lead TQFN (7x7)			48-Lead TQFN (7x7)		
		Wire Bond Material	**Au .001" (w/downbond)**			Au .001" (w/downbond)			Au .001" (w/downbond)			Au .001" (w/downbond)			Au .001" (w/downbond)		
		Mold Compound	**G770C**			G770C			G700			G700			G700		
		Die Attach	**AB2200D**			AB2200D			8290			8290			8290		
		Lead Frame	**Copper**			Copper			Copper			Copper			Copper		
		Lead Finish	**85/15 Sn/Pb**			100% Matte Sn			85/15 Sn/Pb			85/15 Sn/Pb			85/15 Sn/Pb		
		Reliability Lot Number	A050013, DC 0523			R030134A/B/C, DC 0336			R030096FQ, DC 0331			R030096FQ, DC 0331			R030096FQ, DC 0331		
			Failures/Sample Size			**Failures/Sample Size**			**Failures/Sample Size**			**Failures/Sample Size**			**Failures/Sample Size**		
AEC-Q100 Rev. F Tests	**#**	**Conditions**	**+25C**	**+85C**	**-40C**	**+25C**	**+85C**	**-40C**	**+25C**	**+85C**	**-40C**	**+25C**	**+85C**	**-40C**	**+25C**	**+85C**	**-40C**
MSL 1 - Preconditioning (PC)	A1	240C (Sn/Pb)	0/215														
		260C (100% Sn)				0/350											
=>CSAM		J-STD-020C (1 lot)	0/22														
Temperature Humidity-Bias (THB)	A2	85C/85%RH 1000 Hours	Feb. '06	Feb. '06		0/135											
Biased HAST (HAST)	A2	130C/85%RH 96 Hours							0/44			0/45			0/45		
Autoclave (AC)	A3	121C/85%RH 168 Hours				0/231											
Unbiased HAST (UHAST)	A3	130C/85%RH 96 Hours	0/80	0/80													
Temperature Cycle (TC)	A4	-65 to +150C 1000 Cycles	0/80	0/80		0/231											
=>Wirebond Pull (WBP)		>3 grams	Jan. '06														
High Temperature Storage (HTSL)	A6	+150C 1000 Hours	0/80	0/80		0/135			0/45			0/45			0/45		
High Temperature Op Life (HTOL)	B1	+135C 1000 Hours	0/48	0/48	0/48	0/135			0/45			0/42			0/45		
Early Life Failure (ELFR)	B2	+135C 48 Hours															
Maxim Infant Mortality (IME)		+135C 12 Hours															
Wire Bond Shear (WBS)	C1		(Note 3)														
Wire Bond Pull (WBP)	C2		(Note 3)														
Solderability (SD)	C3		0/15			0/45											
Physical Dimensions (PD)	C4		0/10			0/45											
Lead Integrity (LI)	C6		N/A			N/A											
(EM, TDDB, HCI)	D1-3																
Pre- and Post-Stress Electrical (TEST)	E1		All	All	All	All			All			All			All		
Human Body Model ESD (HBM)	E2	JESD22/A114	600V	600V													
Machine Model ESD (MM)	E2	JESD22/A115	50V	50V													
Charged Device Model ESD (CDM)	E3	AEC-Q100-011	200V	200V													
Latch-Up (LU)	E4	JESD78, Class I	0/6	0/6													

(Note 1) AEC-Q100 test performed per Rev. F guidelines. Maxim tests performed to internal specification 10-3006.
(Note 2) Tests performed on three assembly lots.
(Note 3) Monitor data from assembly subcontractor.

✓ = Complete
□ = Open