



Automotive Qualification Report
DS1080LU/T+A00

**Spread Spectrum
Crystal Multiplier**

Grade 1

8-Lead uSOP (Pb-Free)

		Lot #2 (IJ549628BD)	Lot #1 (IJ549628BE)	Family data - Assembly			Family data - Assembly							
		Lot #2 (QJ636608AHA)	Lot #1 (QJ636608AHB)											
Maxim Part Number		DS1080LU+, Rev A1	DS1080LU+, Rev A1	DS1086H+C01			DS1086H+C01							
Description		AEC-Q100	AEC-Q100	AEC-Q100			AEC-Q100							
Operating Temperature		-40°C to +125°C	-40°C to +125°C	-40°C to +85°C			-40°C to +85°C							
Temperature Grade		1	1	3			3							
Fab Location		Dallas	Dallas	Dallas			Dallas							
Fab Process		E35D (8" 0.35um BiCMOS)	E35D (8" 0.35um BiCMOS)	E6 (8", 0.6um CMOS)			E6 (8", 0.6um CMOS)							
Die		E10L80A	E10L80A	EC10H86A			EC10H86A							
Assembly Location		UTL UTAC Thailand	ATP (Amkor, PI)	UTL UTAC Thailand			UTL UTAC Thailand							
Die Size (mils)		35 x 46	35 x 46	58 x 84			58 x 84							
Package		8-Lead uSOP (Pb-Free)	8-Lead uSOP (Pb-Free)	8-Lead uSOP (Pb-Free)			8-Lead uSOP (Pb-Free)							
Wire Bond Material		Au .001"	Au .001"	Au .001"			Au .001"							
Mold Compound		Sum. G600	Sum. G700K	Sum. G600			Sum. G600							
Die Attach		8200T	8290	8200T			8200T							
Lead Frame		Copper	Copper	Copper			Copper							
Lead Finish		100% Matte Sn	100% Matte Sn	100% Matte Sn			100% Matte Sn							
Reliability Lot Number		45785 & 45784, DC 0732	42333 & 42332, DC 0607	45373, DC 0651			45374, DC 0652							
		Failures/Sample Size		Failures/Sample Size			Failures/Sample Size							
AEC-Q100 Rev. G Tests	#	Conditions	+25C	+125C	-40C	+25C	+125C	-40C	+25C	+85C	-40C	+25C	+85C	-40C
MSL 1 - Preconditioning (PC)	A1	240C (Sn/Pb)												
		260C (100% Sn)	0/286	0/286		0/308	0/308		0/276	0/276		0/276	0/276	
	=>CSAM	J-STD-020C	0/8			0/22			0/8			0/8		
Temperature Humidity-Bias (THB)	A2	85C/85%RH/3.5V 1000 Hours												
Biased HAST (HAST)	A2	130C/85%RH/5.5V 96 Hours	0/77 (3)	0/77 (3)					0/45	0/45		0/45	0/45	
Autoclave (AC)	A3	121C/2 ATM Steam 168 Hours	0/77			0/75			0/77			0/77		
Temperature Cycle (TC)	A4	-55 to +125C 1000 Cycles		0/77 (2)			0/77 (2)			0/77			0/77	
=>Wirebond Pull (WBP)		>3 grams	0/40											
High Temperature Storage (HTSL)	A6	+150C 1000 Hours	0/52	0/52		0/77	0/77							
High Temperature Storage (HTSL)	A6	+150C 500 Hours							0/77	0/77		0/77	0/77	
High Temperature Op Life (HTOL)	B3	+125C 3.5V 1000 Hours				0/42 (4)	0/42 (4)	0/42 (4)						
High Temperature Op Life (HTOL)	B3	+125C 5.25V 408 Hours	0/45 (4)	0/45 (4)	0/45 (4)				0/45	0/45	0/45	0/45	0/45	0/45
Early Life Failure Rate (ELFR)	B2	See separate report												
Wire Bond Shear (WBS)	C1		(1)						(Note 1)					
Wire Bond Pull (WBP)	C2		(1)						(Note 1)					
Solderability (SD)	C3		0/15						0/15			0/15		
Physical Dimensions (PD)	C4		0/10						0/30			0/30		
Lead Integrity (LI)	C6													
(EM, TDDB, HCI)	D1-3													
Pre- and Post-Stress Electrical (TEST)	E1		All	All	All	All	All	All	All	All	All	All	All	All
Human Body Model ESD (HBM)	E2	JESD22/A114	8000V	8000V		8000V	8000V							
Machine Model ESD (MM)	E2	JESD22/A115	400V	400V		400V	400V							
Charged Device Model ESD (CDM)	E3	AEC-Q100-011	1000V	1000V		1000V	1000V							
Latch-Up (LU)	E4	JESD78, Class II	0/6	0/6		0/6	0/6							

Note (1) In-Line data from assembly subcontractor.
Note (2) -65 to +150C 500 Cycles
Note (3) 130C/85%RH/3.5V 96 Hours
Note (4) +125C 3.6V



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		Family data - Assembly			Family data - Fab Process			Family data - Fab Process			Family data - Fab Process		
		Lot #3 (QJ636608AHC)			Lot #1 (QK702288AA)			Lot #2 (QK702289AA)			Lot #3 (QK649285AA)		
Spread Spectrum Crystal Multiplier	Maxim Part Number	DS1086H+C01			DS2155, Rev B1-8"			DS2155, Rev B1-8"			DS2155, Rev B1-8"		
	Description	AEC-Q100			Maxim			Maxim			Maxim		
	Operating Temperature	-40°C to +85°C			-40°C to +85°C			-40°C to +85°C			-40°C to +85°C		
	Temperature Grade	3			3			3			3		
	Fab Location	Dallas			Dallas			Dallas			Dallas		
	Fab Process	E6 (8", 0.6um CMOS)			E35D (8" 0.35um BiCMOS)			E35D (8" 0.35um BiCMOS)			E35D (8" 0.35um BiCMOS)		
	Die	EC10H86A			E2156A			E2156A			E2156A		
	Assembly Location	UTL UTAC Thailand			ATP (Amkor, PI)			ATP (Amkor, PI)			ATP (Amkor, PI)		
	Die Size (mils)	58 x 84			380 x 261			380 x 261			380 x 261		
	Package	8-Lead μSOP (Pb-Free)			100-Lead LQFP			100-Lead LQFP			100-Lead LQFP		
	Wire Bond Material	Au .001"			Au .0012"			Au .0012"			Au .0012"		
	Mold Compound	Sum. G600			Sum. 7320CR			Sum. 7320CR			Sum. 7320CR		
	Die Attach	8200T			LM 2500AN			LM 2500AN			LM 2500AN		
	Lead Frame	Copper			Copper			Copper			Copper		
	Lead Finish	100% Matte Sn			SnPb Plate			SnPb Plate			SnPb Plate		
	Reliability Lot Number	45375, DC 0701			45198, DC 0702			45457, DC 0709			45516, DC 0712		
			Failures/Sample Size			Failures/Sample Size			Failures/Sample Size			Failures/Sample Size	
AEC-Q100 Rev. G Tests	#	Conditions			+25C	+85C	-40C	+25C	+85C	-40C	+25C	+85C	-40C
MSL 1 - Preconditioning (PC)	A1	240C (Sn/Pb)											
		260C (100% Sn)			0/275	0/275		0/199			0/122		0/120
		=>CSAM			0/8								
Temperature Humidity-Bias (THB)	A2	85C/85%RH/3.5V 1000 Hours											
Biased HAST (HAST)	A2	130C/85%RH/5.5V 96 Hours			0/45	0/45		0/45 (3)			0/45 (3)		0/45 (3)
Autoclave (AC)	A3	121C/2 ATM Steam 168 Hours			0/77								
Temperature Cycle (TC)	A4	-55 to +125C 1000 Cycles				0/77		0/77			0/77		0/75
		=>Wirebond Pull (WBP)											
High Temperature Storage (HTSL)	A6	+150C 1000 Hours											
High Temperature Storage (HTSL)	A6	+150C 500 Hours			0/77	0/77							
High Temperature Op Life (HTOL)	B3	+125C 3.5V 1000 Hours						0/77			0/77		0/76
High Temperature Op Life (HTOL)	B3	+125C 5.25V 408 Hours			0/45	0/45	0/45						
Early Life Failure Rate (ELFR)	B2	See separate report											
Wire Bond Shear (WBS)	C1												
Wire Bond Pull (WBP)	C2												
Solderability (SD)	C3				0/15								
Physical Dimensions (PD)	C4				0/30								
Lead Integrity (LI)	C6												
(EM, TDDB, HCI)	D1-3												
Pre- and Post-Stress Electrical (TEST)	E1				All	All	All	All			All		All
Human Body Model ESD (HBM)	E2	JESD22/A114						2000V					
Machine Model ESD (MM)	E2	JESD22/A115											
Charged Device Model ESD (CDM)	E3	AEC-Q100-011											
Latch-Up (LU)	E4	JESD78, Class II						0/6					

Note (1) In-Line data from assembly subcontractor.
Note (2) -65 to +150C 500 Cycles
Note (3) 130C/85%RH/3.5V 96 Hours
Note (4) +125C 3.6V