

Automotive Qualification Report
MAX9244EUM

		□			✓			✓			✓			✓			✓					
		Lot # 1 (QR31BQ001A)			Lot # 2 (QFE0AQ003C)			Lot # 3 (QWB2AQ001A)			Lot # 4 (QFE2AQ001Q)			Lot # 5 (QFB4BQ001AA)			Lot # 6 (QIO0BQ002E)			Lot # 7 (Q43ACQ001B)		
Programmable Spread Spectrum DC-Balanced 21-Bit Deserializer	Maxim Part Number	MAX9244EUM			MAX9209EUM			MAX9234EUM			MAX9213EUM+ (Note 2)			MAX9222EUM			MAX1471ATJ			MAX1499EHJ		
	Description (Note 1)	AEC-Q100			AEC-Q100			AEC-Q100			Maxim			AEC-Q100			AEC-Q100			Maxim		
	Operating Temperature	-40C to +85C			-40C to +85C			-40C to +85C			-40C to +85C			-40C to +85C			-40 to +125C			-40C to +85C		
	Temperature Grade	3			3			3			3			3			1			3		
	Fab Location	TSMC Fab 9			TSMC Fab 9			TSMC Fab 9			TSMC Fab 9			TSMC Fab 9			TSMC Fab 9			TSMC Fab 9		
	Fab Process	.35um 1P4M			.35um 2P4M			.35um 1P4M			.35um 2P4M			.35um 1P4M			.35um 2P3M			.35um 2P4M		
	Die	HS39Z-1Z			HS30Z			HS37Z-2Z			HS30Z-2Z			HS31Z-6Z			SC71Z			AC12Y		
	Assembly Location	Anam/Amkor Philippines			Anam/Amkor Philippines			Anam/Amkor Philippines			Anam/Amkor Philippines			Anam/Amkor Philippines			NSEB Thailand			Carsem-S Malaysia		
	Die Size (mils)	108 x 159			88 x 117			97 x 139			88 x 117			92 x 108			90 x 78			85 x 87		
	Package	48-Lead TSSOP			48-Lead TSSOP			48-Lead TSSOP			48-Lead TSSOP			48-Lead TSSOP			32-Lead TQFN			32-Lead TQFP		
	Wire Bond Material	Au .001"			Au .001"			Au .001"			Au .001"			Au .001"			Au .001"			Au .001"		
	Mold Compound	G700K			G700K			G700K			G700K			G700K			G770HC			EME732OCR		
	Die Attach	8290			8290			8290			8290			8290			AB8200T			84-1LMISR4		
	Lead Frame	Copper			Copper			Copper			Copper			Copper			Copper			Copper		
Lead Finish	85/15 Sn/Pb			85/15 Sn/Pb			85/15 Sn/Pb			100% Matte Sn			85/15 Sn/Pb			85/15 Sn/Pb			85/15 Sn/Pb			
Reliability Lot Number	A050038, DC 0551			A050002, DC 0451			A050012, DC 0534			R040020, DC 0404			A050010, DC 0453			A050005, DC 0517			R020068B, DC 0309			
		Failures/Sample Size			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	+125C	-40C	+25C	+85C	-40C	
MSL 3 - Preconditioning (PC)		A1	240C (Sn/Pb)	0/330			0/215						0/22								0/150	
			260C (100% Sn)									0/449										
=>CSAM			J-STD-020C (1 lot)	0/22			0/22						0/22									
Temperature Humidity-Bias (THB)		A2	85C/85%RH 1000 Hours																			0/44
Biased HAST (HAST)		A2	130C/85%RH 96 Hours	0/78	0/78		0/45	0/45		0/48	0/48		0/135									
Autoclave (AC)		A3	121C/85%RH 168 Hours										0/231									0/77
Unbiased HAST (UHAST)		A3	130C/85%RH 96 Hours	0/50	0/50		0/45			0/50	0/50											
Temperature Cycle (TC)		A4	-65 to +150C 1000 Cycles	0/80	0/80		0/77	0/77		0/80	0/80		0/231									
=>Wirebond Pull (WBP)			>3 grams	0/240			0/240			0/200												
High Temperature Storage (HTSL)		A6	+150C 1000 Hours	0/80	0/80		0/77	0/77		0/79	0/79		0/231									0/71
High Temperature Op Life (HTOL)		B1	+115C 1000 Hours	0/80	0/80	0/80	0/45	0/45	0/45	0/47	0/47	0/47	0/134		0/47	0/47	0/47	+135C 0/48	+135C 0/48	+135C 0/48	+135C 0/78	
Early Life Failure Rate (ELFR)		B2	+115C 24 Hours	Pending /800	Pending /800																	(Note 4) 0/845
Maxim Infant Mortality Evaluation			+135C 12 Hours																			0/2637
Wire Bond Shear (WBS)		C1		(Note 3)			(Note 3)															
Wire Bond Pull (WBP)		C2		(Note 3)			(Note 3)					0/678										
Solderability (SD)		C3		0/15			0/15			0/15		0/45										
Physical Dimensions (PD)		C4		0/10			0/15			0/15		0/45										
Lead Integrity (LI)		C6		0/5			0/15			0/10		0/15										
(EM, TDDb, HCI)		D1-3		TSMC			TSMC			TSMC		TSMC		TSMC		TSMC		TSMC		TSMC		TSMC
Pre- and Post-Stress Electrical (TEST)		E1		All	All	All	All	All	All	All	All	All	All	All	All	All	All	All	All	All	All	All
Human Body Model ESD (HBM)		E2	JESD22/A114	2500V	2500V																	
Machine Model ESD (MM)		E2	JESD22/A115																			
Charge Device Model ESD (CDM)		E3	AEC-Q100-011	500V	500V																	
Latch-Up (LU)		E4	JESD78, Class II	0/12	0/12																	

(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.
 (Note 4) Data from Lot Q43ACQ002B, Ta = 135C, per AEC-Q100 ELFR requirements.
 ✓ = Complete
 □ = Open