

Automotive Qualification Report
MAX9209EUM

Programmable
DC-Balanced
21-Bit Serializer

Grade 3

48-Lead TSSOP

		✓	✓	✓	□	✓	✓												
		Lot # 1 (QFE0AQ003C)	Lot # 2 (Q43ACQ001B)	Lot # 3 (QFE2AQ001Q)	Lot # 4 (QWB2AQ001A)	Lot # 5 (QFB6AQ002C)	Lot # 6 (QIO0BQ002E)												
Maxim Part Number		MAX9209EUM	MAX1499EHJ	MAX9213EUM+	MAX9234EUM	MAX9222EUM	MAX1471ATJ												
Description (Note 1)		AEC-Q100	Maxim	Maxim (Note 2)	AEC-Q100	AEC-Q100	AEC-Q100												
Operating Temperature		-40C to +85C	-40C to +85C	-40C to +85C	-40C to +85C	-40C to +85C	-40 to +125C												
Temperature Grade		3	3	3	3	3	1												
Fab Location		TSMC Fab 9	TSMC Fab 9	TSMC Fab 9	TSMC Fab 9	TSMC Fab 9	TSMC Fab 9												
Fab Process		.35um 2P4M	.35um 2P4M	.35um 2P4M	.35um 1P4M	.35um 1P4M	.35um 2P3M												
Die		HS30Z	AC12Y	HS30Z-2Z	HS37Z-2Z	HS31Z-6Z	SC71Z												
Assembly Location		Anam/Amkor Philippines	Carsem-S Malaysia	Anam/Amkor Philippines	Anam/Amkor Philippines	Anam/Amkor Philippines	NSEB Thailand												
Die size (mils)		88 x 117	85 x 87	88 x 117	97 x 139	92 x 108	90 x 78												
Package		48-Lead TSSOP	32-Lead TQFP	48-Lead TSSOP	48-Lead TSSOP	48-Lead TSSOP	32-Lead TQFN												
Wire Bond Material		Au .001"	Au .001"	Au .001"	Au .001"	Au .001"	Au .001"												
Mold Compound		G700K	EME7320CR	G700K	G700K	G700K	G770HC												
Die Attach		8290	84-1LMISR4	8290	8290	8290	AB8200T												
Lead Frame		Copper	Copper	Copper	Copper	Copper	Copper												
Lead Finish		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		A050002	R020068B	R040020	A050012	A050010	A050005												
		Fails/Sample Size		Fails/Sample Size		Fails/Sample Size													
AEC-Q100 Rev. F Tests		#	Conditions	+25C	+125C	-40C	+25C	+85C	-40C	+25C	+85C	-40C	+25C	+125C	-40C				
MSL 3 - Preconditioning (PC)		A1	240C (Sn/Pb)	0/215			0/150			0/215			0/22						
			260C (100% Sn)						0/449				0/22						
			=>CSAM	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	0/45	0/45				0/135		0/48	0/48							
Autoclave (AC)		A3	121C/85%RH 168 Hours				0/77		0/231										
Unbiased HAST (UHAST)		A3	130C/85%RH 96 Hours	0/45						0/50	0/50								
Temperature Cycle (TC)		A4	-65 to +150C 1000 Cycles	0/77	0/77				0/231		0/80	0/80							
			=>Wirebond Pull (WBP)	0/240						0/200									
High Temperature Storage (HTSL)		A6	+150C 1000 Hours	0/77	0/77		0/71		0/231		0/79	0/79							
High Temperature Op Life (HTOL)		B1	+135C 1000 Hours	0/45	0/45	0/45	0/78		0/134		428 Hrs. 0/47	428 Hrs. 0/47	428 Hrs. 0/47	+115C 0/47	+115C 0/47	+115C 0/47	0/48	0/48	0/48
Early Life Failure (Note 4) (ELFR)		B2	+135C 48 Hours				(Note 4) 0/845	(Note 4) 0/845											
			Maxim Infant Mortality				0/2637												
		C1	Wire Bond Shear (WBS)	(Note 3)						(Note 3)									
		C2	Wire Bond Pull (WBP)	(Note 3)					0/678		(Note 3)								
		C3	Solderability (SD)	0/15					0/45		0/15								
		C4	Physical Dimensions (PD)	0/15					0/45		Pending								
		C6	Lead Integrity (LI)	0/15					0/15		0/10								
		D1-3	(EM, TDDb, HCI)	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
Human Body Model ESD (HBM)		E2		2000V	2000V														
Machine Model ESD (MM)		E2																	
Charged Device Model ESD (CDM)		E3		750V	750V														
Latch-Up (LU)		E4		0/6	0/6														
Electrothermal Gate Leakage (GL)		E8																	

(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, per AEC-Q100 ELFR requirements.

✓ = Complete

□ = Open