

Automotive Qualification Report
MAX7042ATJ+

		Lot # 1 (QYK0BQ001D)	Lot # 2 (Q43ACQ001B)	Lot # 3 (Q4ABAQ001A)	Lot # 4 (QFE0AQ003C)	Lot # 5 (QFB6AQ002C)	Lot # 6 (QFE2AQ001Q)							
308MHz/315MHz/ 418MHz/433.92MHz Low-Power, FSK Superheterodyne Receiver	Maxim Part Number	MAX7042ATJ+C1R	MAX1499EHJ	MAX1421ECM	MAX9209EUM	MAX9222EUM	MAX9213EUM+ (Note 2)							
	Description (Note 1)	AEC-Q100 (Note 4)	Maxim	Maxim	AEC-Q100	AEC-Q100	Maxim							
	Operating Temperature	-40 to +125C	-40C to +85C	-40C to +85C	-40C to +85C	-40C to +85C	-40C to +85C							
	Temperature Grade	1	3	3	3	3	3							
	Fab Location	TSMC Fab 9	TSMC Fab 9	TSMC Fab 9	TSMC Fab 9	TSMC Fab 9	TSMC Fab 9							
	Fab Process	.35um 2P3M	.35um 2P4M	.35um 2P4M	.35um 2P4M	.35um 1P4M	.35um 2P4M							
	Die	LF12Z	AC12Y	AC07X-1Z	HS30Z	HS31Z-6Z	HS30Z-2Z							
	Assembly Location	ASAT Hong Kong	Carsem-S Malaysia	Carsem-S Malaysia	Anam/Amkor Philippines	Anam/Amkor Philippines	Anam/Amkor Philippines							
	Die Size (mils)	90 x 72	85 x 87	117 x 106	88 x 117	92 x 108	88 x 117							
	Package	32-Lead TQFN (5x5)	32-Lead TQFP	48-Lead TQFP	48-Lead TSSOP	48-Lead TSSOP	48-Lead TSSOP							
	Wire Bond Material	Au .001" (w/down bonds)	Au .001"	Au .001"	Au .001"	Au .001"	Au .001"							
	Mold Compound	G770C	EME7320CR	EME7320AR	G700K	G700K	G700K							
	Die Attach	AB2200D	84-1LMISR4	84-1LMISR4	8290	8290	8290							
	Lead Frame	Copper	Copper	Copper	Copper	Copper	Copper							
	Lead Finish	100% Matte Sn	85/15 Sn/Pb	85/15 Sn/Pb	85/15 Sn/Pb	85/15 Sn/Pb	100% Matte Sn							
Reliability Lot Number	A0500023, DC 0520	R020068B, DC 0309	R020068A, DC 0219	A050002, DC 0451	A050010, DC 0453	R040020, DC 0404								
		Failures/Sample Size		Failures/Sample Size		Failures/Sample Size								
AEC-Q100 Rev. F Tests	#	Conditions	+25C	+125C	-40C	+25C	+85C	-40C	+25C	+85C	-40C	+25C	+85C	-40C
MSL 1 - Preconditioning (PC)	A1	240C (Sn/Pb)	0/215			0/150			0/215					
	A1	260C (100% Sn)												0/449
=>CSAM		J-STD-020B	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	0/47	0/47				0/45	0/45					0/135
Autoclave (AC)	A3	121C/85%RH 168 Hours				0/77		0/77						0/231
Unbiased HAST (UHAST)	A3	130C/85%RH 96 Hours	0/80	0/80				0/45						
Temperature Cycle (TC)	A4	-65 to +150C 1000 Cycles	0/90	0/90				0/77	0/77					0/231
=>Wirebond Pull (WBP)		>3 grams	0/155					0/240						
High Temperature Storage (HTSL)	A6	+150C 1000 Hours	0/80	0/80		0/71		0/76						0/231
High Temperature Op Life (HTOL)	B1	+135C 1000 Hours	0/48	0/48	0/48	0/78		0/79				+115C 0/45	+115C 0/45	+115C 0/45
Early Life Failure (Note 5) (ELFR)	B2	+135C 48 Hours				0/845	0/845							
Maxim Infant Mortality (IME)		+135C 12 Hours				0/2637		0/2393						
Wire Bond Shear (WBS)	C1		(Note 3)											
Wire Bond Pull (WBP)	C2		(Note 3)											
Solderability (SD)	C3		0/15											
Physical Dimensions (PD)	C4		0/10											
Lead Integrity (LI)	C6		N/A											
(EM, TDDb, HCI)	D1-3		TSMC			TSMC		TSMC				TSMC		TSMC
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	1000V	1000V										
Machine Model ESD (MM)	E2	JESD22/A115												
Charge Device Model ESD (CDM)	E3	AEC-Q100-011	750V	750V										
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.

(Note 4) C1R version, RSSI tested to 60 dB.

(Note 5) Data from Lot Q43ACQ002B, per AEC-Q100 ELFR requirements.

✓ = Complete

□ = Open

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MAX7042ATJ+

		✓	✓	✓
		Lot # 7 (QIO0BQ002E)	Lot # 8 (N9J0BA185QA/B/C)	Lot # 9 (SML3DZ005QA/B/C)
308MHz/315MHz/ 418MHz/433.92MHz Low-Power, FSK Superheterodyne Receiver Grade 1 32-Lead TQFN 5 x 5 mm	Maxim Part Number	MAX1471ATJ	MAX2538ETI+ (Note 2)	MAX1782ETM+ (Note 2)
	Description (Note 1)	AEC-Q100	Maxim	Maxim
	Operating Temperature	-40 to +125C	-40C to +85C	-40C to +85C
	Temperature Grade	1	3	3
	Fab Location	TSMC Fab 9	Maxim, Beaverton	Maxim, San Jose
	Fab Process	.35um 2P3M	G4, SiGe BiCMOS (0.5 um)	EB8, .8 um CMOS
	Die	SC71Z	WC19Y	UC03Y-3Z
	Assembly Location	NSEB Thailand	ASAT Hong Kong	ASAT Hong Kong
	Die Size (mils)	90 x 78	89 x 87	220 x 220
	Package	32-Lead TQFN (5x5)	28-Lead TQFN (5x5)	48-Lead TQFN (7x7)
	Wire Bond Material	Au .001" (w/down bonds)	Au .001" (w/down bonds)	Au .001"
	Mold Compound	G770HC	G770C	G770C
	Die Attach	AB8200T	AB2200D	AB2200D
	Lead Frame	Copper	Copper	Copper
	Lead Finish	85/15 Sn/Pb	100% Matte Sn	100% Matte Sn
	Reliability Lot Number	A050005, DC 0517	R040075A/B/C, DC 0422	R040023A/B/C, DC 0432
AEC-Q100 Rev. F Tests		Failures/Sample Size		
	#	Conditions		
		+25C	+125C	-40C
		+25C	+85C	-40C
		+25C	+85C	-40C
MSL 1 - Preconditioning (PC)	A1	240C (Sn/Pb)	0/215	
	A1	260C (100% Sn)		0/450
=>CSAM		J-STD-020B	0/22	
Temperature Humidity-Bias (THB)	A2	85C/85%RH 1000 Hours		
Biased HAST (HAST)	A2	130C/85%RH 96 Hours	0/47	0/47
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
=>Wirebond Pull (WBP)		>3 grams	0/160	
High Temperature Storage (HTSL)	A6	+150C 1000 Hours	0/78	0/78
High Temperature Op Life (HTOL)	B1	+135C 1000 Hours	0/48	0/48
Early Life Failure (Note 5) (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	
(EM, TDDb, HCI)	D1-3		TSMC	
Pre- and Post-Stress Electrical (TEST)	E1		All	All
Human Body Model ESD (HBM)	E2	JESD22/A114	1000V	1000V
Machine Model ESD (MM)	E2	JESD22/A115		
Charge Device Model ESD (CDM)	E3	AEC-Q100-011	250V	250V
Latch-Up (LU)	E4	JESD78, Class I	0/6	0/6

(Note 1) AEC-Q100 test performed per Rev. F guidelines. Maxim test

(Note 2) Tests performed on three assembly lots.

(Note 3) Monitor data from assembly subcontractor.

(Note 4) C1R version, RSSI tested to 60 dB.

(Note 5) Data from Lot Q43ACQ002B, per AEC-Q100 ELFR requirem

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