

**Automotive Qualification Report**  
**MAX3490EESA+**

		✓ Lot # 1 (NGQCDA1B5D)	✓ Lot # 2 (NIKGCA970B)	✓ Lot # 3 (NDNACA596A)	✓ Lot # 4 (NDNACA481D)	✓ Lot # 5 (NDNACA497A)	✓ Lot # 6 (SOBAEQ001Q)				
<b>3.3V Powered, 10Mbps and Slew-Rate Limited, True RS-485/RS-422 Transceiver</b>	Maxim Part Number	MAX3490EESA+	MAX488EESA+	MAX603CSA+ (Note 2)	MAX603ESA	MAX603ESA	MAX1977EEI+ (Note 2)				
	Description (Note 1)	AEC-Q100	AEC-Q100	Maxim	Maxim	Maxim	Maxim				
	Operating Temperature	-40C to +85C	-40C to +85C	0C to +70C	-40C to +85C	-40C to +85C	-40C to +85C				
	Temperature Grade	3	3	4	3	3	3				
	Fab Location	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, San Jose				
	Fab Process	S3E, (6", 3 um MOS)	S3E, (6", 3 um MOS)	S3E, (6", 3 um MOS)	S3E, (6", 3 um MOS)	S3E, (6", 3 um MOS)	B8 (8", 0.8 um MOS)				
	Die	RS17Y-2Z	RS29Y-6Z	PW50Z	PW50Z	PW50Z	PX65Y				
	Assembly Location	NSEB Thailand	NSEB Thailand	Anam/Amkor Philippines	Anam/Amkor Philippines	Anam/Amkor Philippines	NSEB Thailand				
	Die Size (mils)	86 x 146	85 x 128	104 x 100	104 x 100	104 x 100	86 x 169				
	Package	8-Lead NSOIC	8-Lead NSOIC	8-Lead NSOIC	8-Lead NSOIC	8-Lead NSOIC	28-Lead QSOP (Note 6)				
	Wire Bond Material	Au .0013"	Au .0013"	Au .0013"	Au .0013"	Au .0013"	Au .0013"				
	Mold Compound	G600	G600	G600	EME6600CS	EME6600CS	G600				
	Die Attach	AB2200D	AB2200D	84-3J	84-3J	84-3J	AB2200D				
	Lead Frame	Copper	Copper	Copper	Copper	Copper	Copper				
	Lead Finish	100% Matte Sn	100% Matte Sn	100% Matte Sn	85/15 Sn/Pb	85/15 Sn/Pb	100% Matte Sn				
Reliability Lot Number	A050040, DC 0551	A050022, DC 0526	R040128A/B/C, DC 0439	R030036, DC 0318	R030099, DC 0328	R030168A/B/C, DC 0338					
		Failures/Sample Size			Failures/Sample Size						
<b>AEC-Q100 Rev. F Tests</b>	<b>#</b>	<b>Conditions</b>	<b>+25C</b>	<b>+125C</b>	<b>-40C</b>	<b>+25C</b>	<b>+85C</b>	<b>-40C</b>	<b>+25C</b>	<b>+85C</b>	<b>-40C</b>
MSL 1 - Preconditioning (PC)	A1	240C (Sn/Pb)				0/154			0/154		
		260C (100% Sn)	0/215								0/450
=>CSAM		J-STD-020C (1 lot)	0/22								
Temperature Humidity-Bias (THB)	A2	85C/85%RH 1000 Hours									
Biased HAST (HAST)	A2	130C/85%RH 96 Hours	0/50	0/50		0/45	0/45	0/95	0/77		0/135
Autoclave (AC)	A3	121C/85%RH 168 Hours							0/77		0/231
Unbiased HAST (UHAST)	A3	130C/85%RH 96 Hours	0/48	0/48		0/45	0/45				
Temperature Cycle (TC)	A4	-65 to +150C 1000 Cycles	0/80	0/80		0/77	0/77	0/239	0/77		0/231
=>Wirebond Pull (WBP)		>3 grams	0/47			0/40					
High Temperature Storage (HTSL)	A6	+150C 1000 Hours	0/80	0/80		0/77	0/77	0/231	0/77		0/231
High Temperature Op Life (HTOL)	B1	+135C 1000 Hours	(Note 4) 0/99	(Note 4) 0/99	(Note 4) 0/99	(Note 5) 0/95	(Note 5) 0/95	(Note 5) 0/95	0/129		0/77
Early Life Failure Rate (ELFR)	B2	+135C 48 Hours									
Wire Bond Shear (WBS)	C1								0/4010		0/4015
Wire Bond Pull (WBP)	C2		(Note 3)			(Note 3)					
Solderability (SD)	C3		(Note 3)			(Note 3)					0/600
Physical Dimensions (PD)	C4		0/15			0/15					0/45
Lead Integrity (LI)	C6		0/10			0/10					0/45
(EM, TDDB, HCI)	D1-3		0/5			0/5					0/45
Pre- and Post-Stress Electrical (TEST)	E1										
Human Body Model ESD (HBM)	E2	JESD22/A114	All	All	All	All	All	All	All	All	All
Machine Model ESD (MM)	E2	JESD22/A115	2500V	2500V							
Charged Device Model ESD (CDM)	E3	AEC-Q100-011									
Latch-Up (LU)	E4	JESD78, Class II	1000V	1000V							
Electrothermal Gate Leakage (GL)	E8		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) HTOL performed using MAX3490EEPA (PDIP), Lot NGQCDA1B5DA (DC 0344).

(Note 5) HTOL performed using MAX489ECPD (PDIP), Lot NIKHCA800A (Die RS29Y-7Z).

(Note 6) 16-Lead NSOIC and smaller qualified by extension from the 28-Lead QSOP due to similar body dimensions and identical materials.

✓ = Complete

□ = Open