

Automotive Qualification Report
MAX1655ESE

		✓	✓	✓	✓	✓		
		Lot # 1 (NPMDE3149C)	Lot # 2 (NHLETU088B)	Lot # 3 (NHLATA393C)	Lot # 4 (NSD4BA993C)	Lot # 5 (NYTBLA382B)		
High-Efficiency, PWM, Step-Down DC-DC Controller	Maxim Part Number	MAX1655ESE	MAX1634EAI (Note 2)	MAX1630EAI (Note 2)	MAX1634EAI	MAX691ACSE		
	Description (Note 1)	AEC-Q100	Maxim	Maxim	AEC-Q100	Maxim		
	Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	0°C to +70°C		
	Temperature Grade	3	3	3	3	4		
	Fab Location	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton		
	Fab Process	S12E, (6", 1.2 um MOS)	S12E, (6", 1.2 um MOS)	S12E, (6", 1.2 um MOS)	S12E, (6", 1.2 um MOS)	SG3		
	Die	PW86Y-1Z	PW57S-4Z	PW57S	PW57S-4Z	PS46V-1Z		
	Assembly Location	Carsem-S	Anam/Amkor Philippines	Anam/Amkor Philippines	Unisem, Thailand	Carsem-S		
	Die Size (mils)	107 x 80	92 x 128	92 x 128	92 x 128	70 x 110		
	Package	16NSOIC	28-Lead SSOP (die coat)	28-Lead SSOP (die coat)	28-Lead SSOP (die coat)	16NSOIC		
	Wire Bond Material	Au .0013"	Au .0013"	Au .0013"	Au .0013"	Au .0013"		
	Mold Compound	EME6300HR	EME6600CS	EME6600CS	EME6730B	EME6300H		
	Die Attach	84-1LMISR4	84-1LMISR4	84-1LMISR4	84-1LMISR4	84-1LMISR4		
	Lead Frame	Copper	Copper	Copper	Copper	Copper		
	Lead Finish	85/15 Pb/Sn	85/15 Pb/Sn	85/15 Pb/Sn	85/15 Pb/Sn	100% Matte Sn		
Reliability Lot Number	A050029, DC 0539	R020046A/B/C, DC 0214	R020046A/B/C, DC 0319	A050036, DC 0546	R020060A/B/C, DC 0206			
		Failures/Sample Size		Failures/Sample Size		Failures/Sample Size		
AEC-Q100 Rev. F Tests	#	Conditions	+25C	+85C	-40C	+25C	+85C	-40C
MSL 1 - Preconditioning (PC)	A1	240C (Sn/Pb)	0/215			0/215		
		260C (100% Sn)						0/450
=>CSAM		J-STD-020C (1 lot)	0/22			0/22		
Temperature Humidity-Bias (THB)	A2	85C/85%RH 1000 Hours						
Biased HAST (HAST)	A2	130C/85%RH 96 Hours	0/49	0/49		0/49	0/49	
Autoclave (AC)	A3	121C/85%RH 168 Hours						
Unbiased HAST (UHAST)	A3	130C/85%RH 96 Hours	0/45	0/45		0/44	0/44	
Temperature Cycle (TC)	A4	-65 to +150C 1000 Cycles	0/80	0/80		0/79	0/79	
=>Wirebond Pull (WBP)		>3 grams	0/80			0/125		
High Temperature Storage (HTSL)	A6	+150C 1000 Hours	0/78	0/78		0/75	0/75	
High Temperature Op Life (HTOL)	B1	+135C 1000 Hours	0/79	0/79	0/79	0/78	0/78	0/78
Early Life Failure Rate (ELFR)	B2	+135C 48 Hours	0/924	0/924				
Wire Bond Shear (WBS)	C1		(Note 3)			(Note 3)		
Wire Bond Pull (WBP)	C2		(Note 3)			(Note 3)		0/600
Solderability (SD)	C3		0/15			0/15		0/45
Physical Dimensions (PD)	C4		0/15			0/10		0/45
Lead Integrity (LI)	C6		0/5			0/5		0/45
(EM, TDDb, HCl)	D1-3							
Pre- and Post-Stress Electrical (TEST)	E1		All	All	All	All	All	All
Human Body Model ESD (HBM)	E2	JESD22/A114	500V	500V				
Machine Model ESD (MM)	E2	JESD22/A115						
Charged Device Model ESD (CDM)	E3	AEC-Q100-011	500V	500V				
Latch-Up (LU)	E4	JESD78, Class II	0/11	0/11				

(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) No preconditioning.

✓ = Complete

□ = Open