

**Automotive Qualification Report**  
**MAX16803ATE+**

**High-Voltage, 350mA, High-Brightness LED Driver with PWM Dimming and 5V Regulator**  
**Grade 1**  
**16-Lead TQFN-EP**

		□	□	✓	✓	✓	✓										
		Lot # 1 (NZI0BAQ004A)	Lot # 2 (NZI0BAQ004A)	Lot # 3 (NZI0BAQ001E)	Lot # 4 (N6Y0FA039B)	Lot # 5 (NEZ0C2037A)	Lot # 6 (TRS0F3049Q)										
Maxim Part Number		MAX16803ATE+	MAX16800ATE+	MAX16800ATE+	MAX5035AASA	MAX2821ETM+ (Note 2)	MAX1526ETM+ (Note 2)										
Description (Note 1)		AEC-Q100	AEC-Q100	AEC-Q100	AEC-Q100	Maxim	Maxim										
Operating Temperature		-40C to +125C	-40C to +125C	-40C to +125C	-40C to +125C	-40C to +85C	-40C to +85C										
Temperature Grade		1	1	1	1	3	3										
Fab Location		Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, San Antonio										
Fab Process		BCD80N (BiCMOS)	BCD80N (BiCMOS)	BCD80N (BiCMOS)	BCD80N (BiCMOS)	G4MDBG (SiGe 0.5 um)	B8 (0.8 um CMOS)										
Die		SP01Z-2Z	SP01Z	SP01Z	NP25V	WD05Y-1Z	PN79Y										
Assembly Location		NSEB Thailand	NSEB Thailand	ASAT, Hong Kong	Unisem	NSEB Thailand	NSEB Thailand										
Die Size (mils)		136 x 60	136 x 60	136 x 60	85 x 145	142 x 166	160x152										
Package		16-Lead TQFN (5x5)	16-Lead TQFN (5x5)	16-Lead TQFN (5x5)	8-Lead NSOIC	48-Lead TQFN (7x7)	48-Lead TQFN-EP (6x6)										
Wire Bond Material		Au .001"	Au .001"	Au .001"	Au .001"	Au .001" (w/downbond)	Au .001"										
Mold Compound		G770HCD	G770HCD	G770HCD	EME6300H	G770HCD	G770HCD										
Die Attach		AB8200T	AB8200T	AB2200	84-1LMISR4	AB8200T	AB8200T										
Lead Frame		Copper	Copper	Copper	Copper	Copper	Copper										
Lead Finish		100% Matte Sn	100% Matte Sn	100% Matte Sn	85/15 Sn/Pb	100% Matte Sn	100% Matte Sn										
Reliability Lot Number		A060009, DC 0609	A060007, DC 0609	A050039, DC 0549	A050017, DC 0527	R050139, DC 0527	R050191, DC 0531										
		Failures/Sample Size			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>+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)						0/200								
			260C (100% Sn)						0/200								
=>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			0/48	0/48	0/48	0/48	0/48	0/48	(Note 4) 0/135			0/135		
Autoclave (AC)		A3	121C/85%RH 168 Hours									No Prec 0/231			No Prec 0/231		
Unbiased HAST (UHAST)		A3	130C/85%RH 96 Hours			0/50	0/50	0/47	0/47	0/50	0/50						
Temperature Cycle (TC)		A4	-65 to +150C 1000 Cycles			0/78	0/78	0/80	0/80			(Note 4) 0/231			0/231		
=>Wirebond Pull (WBP)			>3 grams					0/65									
High Temperature Storage (HTSL)		A6	+150C 1000 Hours			500 Hrs. 0/80	500 Hrs. 0/80	0/80	0/80	0/80	0/80	(Note 4) 0/135			0/231		
High Temperature Op Life (HTOL)		B1	+135C 1000 Hours			500 Hrs. 0/48	500 Hrs. 0/48	500 Hrs. 0/48	0/48	0/48	0/48						
Early Life Failure Rate (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)				0/602			0/600		
Solderability (SD)		C3						0/15	0/15			0/45			0/45		
Physical Dimensions (PD)		C4						0/10	0/10			0/45					
Lead Integrity (LI)		C6						N/A	N/A			N/A					
(EM, TDDb, HCI)		D1-3															
Pre- and Post-Stress Electrical (TEST)		E1				All	All								All		
Human Body Model ESD (HBM)		E2	JESD22/A114	1500V	1500V												
Machine Model ESD (MM)		E2	JESD22/A115														
Charged Device Model ESD (CDM)		E3	AEC-Q100-011	Pending	Pending												
Latch-Up (LU)		E4	JESD78, Class	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) Post stress Sn whisker inspection (50 um)

✓ = Complete

□ = Open