

Automotive Qualification Report
MAX16800ATE+

		□	✓	✓	✓	✓	✓							
		Lot # 1 (NZ10BAQ004A)	Lot # 2 (NZ10BAQ001E)	Lot # 3 (N6Y0FA039B)	Lot # 4 (NEZ0C2037A)	Lot # 5 (TRS0F3049Q)								
High-Voltage, 350mA, Adjustable Linear High-Brightness LED (HB LED) Driver	Maxim Part Number	MAX16800ATE+	MAX16800ATE+	MAX5035AASA	MAX2821ETM+ (Note 2)	MAX1526ETM+ (Note 2)								
	Description (Note 1)	AEC-Q100	AEC-Q100	AEC-Q100	Maxim	Maxim								
	Operating Temperature	-40C to +125C	-40C to +125C	-40C to +125C	-40C to +85C	-40C to +85C								
	Temperature Grade	1	1	1	3	3								
	Fab Location	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, Beaverton	Maxim, San Antonio								
	Fab Process	BCD80N (BiCMOS)	BCD80N (BiCMOS)	BCD80N (BiCMOS)	G4MDBG (SiGe 0.5 um)	B8 (0.8 um CMOS)								
	Die	SP01Z	SP01Z	NP25V	WD05Y-1Z	PN79Y								
	Assembly Location	NSEB Thailand	ASAT, Hong Kong	Unisem	NSEB Thailand	NSEB Thailand								
	Die Size (mils)	136 x 60	136 x 60	85 x 145	142 x 166	160x152								
	Package	16-Lead TQFN-EP (5x5)	16-Lead TQFN-EP (5x5)	8-Lead NSOIC	48-Lead TQFN (7x7)	48-Lead TQFN-EP (6x6)								
	Wire Bond Material	Au .001"	Au .001"	Au .001"	Au .001" (w/downbond)	Au .001"								
	Mold Compound	G770HCD	G770C	EME6300H	G770HCD	G770HCD								
	Die Attach	AB8200T	AB2200	84-1LMISR4	AB8200T	AB8200T								
	Lead Frame	Copper	Copper	Copper	Copper	Copper								
Lead Finish	100% Matte Sn	100% Matte Sn	85/15 Sn/Pb	100% Matte Sn	100% Matte Sn									
Reliability Lot Number	A060007, DC 0609	A050039, DC 0549	A050017, DC 0527	R050139, DC 0527	R050191, DC 0531									
	Failures/Sample Size	Failures/Sample Size	Failures/Sample Size	Failures/Sample Size	Failures/Sample Size									
AEC-Q100 Rev. F Tests	#	Conditions	+25C	+125C	-40C	+25C	+125C	-40C	+25C	+85C	-40C	+25C	+85C	-40C
MSL 1 - Preconditioning (PC)	A1	240C (Sn/Pb)												
		260C (100% Sn)	0/200											
=>CSAM		J-STD-020C (1 lot)	0/22											
		85C/85%RH 1000 Hours												
Temperature Humidity-Bias (THB)	A2													
Biased HAST (HAST)	A2	130C/85%RH 96 Hours	0/48	0/48										
		121C/85%RH 168 Hours												
Autoclave (AC)	A3													
Unbiased HAST (UHAST)	A3	130C/85%RH 96 Hours	0/50	0/50										
		-65 to +150C 1000 Cycles	0/78	0/78										
Temperature Cycle (TC)	A4													
=>Wirebond Pull (WBP)		>3 grams												
		500 Hrs. 0/80	500 Hrs. 0/80											
High Temperature Storage (HTSL)	A6	+150C 1000 Hours												
		500 Hrs. 0/48	500 Hrs. 0/48	500 Hrs. 0/48										
High Temperature Op Life (HTOL)	B1	+135C 1000 Hours												
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)											
Solderability (SD)	C3		0/15											
Physical Dimensions (PD)	C4		0/10											
Lead Integrity (LI)	C6		N/A											
(EM, TDDb, HCI)	D1-3													
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												
Charged Device Model ESD (CDM)	E3	AEC-Q100-011	750V	750V										
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