

Product Details:

Supplier:	Taiwan Semiconductor Co., Ltd.		
Test Vehicle/s:	TSM60NE084PW, TSM60NE069PW, TSM60NE048PW		
Reason for Rel:	New Product Qualification		
Part Description:	600V N-Channel Power MOSFET		
Package Type:	TO-247		
Assembly Site:	(3083) China	General Specification:	JESD22

Product Series Covered:

TSM60NE084PW, TSM60NE069PW, TSM60NE048PW

Reliability Test Results Summary:

Stress Test	Abbrev	Test Methods	Test Conditions	Final Readpoint	Requirements		Results	
					SS	# Lots	Rej/SS	Remarks
Environmental and Lifetime Stress Tests								
Pre- and Post-Stress Electrical Test	TEST	Product Datasheet	Test at room temp	-	634	3	0/1902	PASS
Extrenal Visual	EV	JESD22-B101	per reference standard	-	634	3	0/1902	PASS
Temperature Cycle	TC	JESD22-A104	-65°C to +150°C; 15 mins dwell	500 cycs	77	3	0/231	PASS
Unbiased HAST	UHAST	JESD22-A118	130°C/85% RH; unbiased	96 hrs	77	3	0/231	PASS
Highly Accelerated Stress Test	HAST	JESD22-A110	130°C/85% RH; V=80% VR; 42V max	96 hrs	77	3	0/231	PASS
Resistance to Solder Heat	RSH	JESD22-B106	PTH (Pb free): 270°C; 7 sec	7 secs	10	3	0/231	PASS
High Temp Storage Life	HTSL	JESD22-A103	150°C	1000 hrs	77	3	0/231	PASS
High Temp Reverse Bias	HTRB	MIL-STD-750-1	150°C; V=80% rated V	1000 hrs	77	3	0/231	PASS
High Temp Gate Bias	HTGB	JESD22-A108	150°C; V=100% rated Vgs	1000 hrs	77	3	0/231	PASS
Intermittent Operating Life	IOL	MIL-STD-750	Ta=25°C; ΔTj=100°C; 3.5 min on/off	6000 cycs	77	3	0/231	PASS
Package Assembly Integrity Tests								
Destructive Physical Analysis	DPA	AEC-Q101-004	Post-TC	results	2	3	0/6	PASS
Wire Bond Pull	WBP	MIL-STD-750-2	per assembly spec	results	10	3	0/30	PASS
Wire Bond Shear	WBS	AEC Q101-003	per assembly spec	results	15	3	0/45	PASS
Solderability	SD	J-STD-002	260°C	results	10	3	0/30	PASS
Electrical Verification Tests								
Parametric Verification	PV	TSC Datasheet	per product datasheet	results	25	3	0/75	PASS
ESD - Human Body Model	ESD - HBM	AEC-Q101-001	per product spec	results	30	3	1kV	PASS
ESD - Charged Device Model	ESD - HBM	AEC-Q101-005	per product spec	results	30	3	1kV	PASS

Conclusion: TSM60NE084PW, TSM60NE069PW, TSM60NE048PW successfully passed commercial-grade qualification per JESD22

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