

Product Details:

Supplier:	Taiwan Semiconductor Co., Ltd.						
Test Vehicle/s:	TSM60NE069CIT, TSM60NE084CIT, TSM60NE145CIT, TSM60NE285CIT						
Reason for Rel:	New Product Qualification						
Part Description:	600V N-Channel Power MOSFET						
Package Type:	ITO-220TL						
Assembly Site:	China (3864)	General Specification:	JESD22				

Product Series Covered:

TSM60NE069CIT, TSM60NE084CIT, TSM60NE145CIT, TSM60NE285CIT, TSM60NE200CIT, TSM60NE180CIT, TSM60NE110CIT

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	-	485	4	0/2196	PASS
Extrenal Visual	EV	JESD22-B101	per reference standard	-	485	4	0/2196	PASS
Temperature Cycle	TC	JESD22-A104	-65°C to +150°C; 15 mins dwell	500 cycs	77	4	0/308	PASS
Unbiased HAST	UHAST	JESD22-A118	130°C/85% RH; unbiased	96 hrs	77	4	0/308	PASS
Highly Accelerated Stress Test	HAST	JESD22-A110	130°C/85% RH; V=80% VR; 42V max	96 hrs	77	4	0/308	PASS
Resistance to Solder Heat	RSH	JESD22-B106	SMD (Pb free): 260°C; 10 sec	10 secs	10	4	0/40	PASS
High Temp Storage Life	HTSL	JESD22-A103	150°C	1000 hrs	77	4	0/308	PASS
High Temp Reverse Bias	HTRB	MIL-STD-750-1	150°C; V=80% rated V	1000 hrs	77	4	0/308	PASS
High Temp Gate Bias	HTGB	JESD22-A108	150°C; V=100% rated Vgs	1000 hrs	77	4	0/308	PASS
Intermittent Operating Life	IOL	MIL-STD-750	Ta=25°C; ΔTj=100°C; 3.5 min on/off	8572 cycs	77	4	0/308	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	28	1	0/28	PASS
Wire Bond Shear	WBS	AEC Q101-003	per assembly spec	results	56	1	0/56	PASS
Solderability	SD	J-STD-002	260°C	results	10	4	0/40	PASS
Terminal Strength	TS	JESD22-B105	per reference standard	results	10	1	0/10	PASS
Die Shear	DS	MIL-STD-750-2	per assembly spec	results	14	1	0/14	PASS
Electrical Verification Tests								
Parametric Verification	PV	TSC Datasheet	per product datasheet	results	25	4	0/25	PASS
ESD - Human Body Model	ESD - HBM	AEC-Q101-001	per product spec	results	30	4	1kV	PASS
ESD - Charged Device Model	ESD - HBM	AEC-Q101-005	per product spec	results	30	4	1kV	PASS

Conclusion: TSM60NE069CIT, TSM60NE084CIT, TSM60NE145CIT, TSM60NE285CIT successfully passed commercial-grade qualification per JESD22

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