



Test report:MLR150-24

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Output function test

NO.	Test item	Specication	Test condition	Result	Verdict
1	Ripple & noise	V1:150mVp-p	I/P:230VAC O/P:Full load Ta:25°C	58mVp-p	P
2	Output voltage tolerance	CH1: 21.6V ~ 29V	I/P:230VAC O/P:Min load Ta:25°C	CH1:20.2V ~ 30.5V	P
3	Output voltage tolerance	V1:-1%~1%	I/P:85VAC/277VAC O/P:Full/min load Ta:25°C	V1:-0.14%~-0.14%	P
4	Line regulation	V1:-1%~1%	I/P:85VAC/277VAC O/P:Full load Ta:25°C	V1:-0.02%~0.04%	P
5	Load regulation	V1:-1%~1%	I/P:230VAC O/P:Full/min load Ta:25°C	V1:-0.14%~-0.14%	P
6	Set up time	230VAC/500ms(Max) 115VAC/500ms(Max)	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	65.5ms/230VAC 73.6ms/115VAC	P
7	Rise time	230VAC/60ms(Max) 115VAC/60ms(Max)	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	30.5ms/230VAC 26.8ms/115VAC	P
8	Hold up time	230VAC/30ms(Typ) 115VAC/12ms(Typ)	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	78ms/230VAC 15.6ms/115VAC	P
9	Over/undershoot test	< ±5%	I/P:230VAC O/P:Full load Ta:25°C	Test: < 5%	P

Input function test

NO.	Test item	Specication	Test condition	Result	Verdict
1	Input voltage range	85VAC~277VAC 120VDC~390VDC	I/P:Testing O/P:Full load I/P:DC Test (L:+ N:-) O/P:Full/50% load I/P:DC Test (L:- N:+) O/P:Full/50% load Ta:25°C	(1) 81V~277V (2) 107.7~390Vdc/full load 107.7~390Vdc/50%load (3) 107.6~390Vdc/full load 107.6~390Vdc/50%load	P
			I/P: Low-line-3V=82V High-line+15%=300V O/P:Full/min load ON:30Sec. OFF:30Se 10MIN (AC power ON/OFF NO	ok	
2	Input frequency range	47Hz~63Hz NO damage	I/P:85AC~277VAC O/P:Full/min load Ta:25°C	ok	P
3	Efficiency	90.5%	I/P:230VAC O/P:Full load Ta:25°C	91.00%	P
4	Input current	230V/1.6A 115V/3A	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	I=1.2A/230VAC I=2.1A/115VAC	P
5	Inrush current	230V/70A 115V/35A cold start	I/P:230VAC O/P:Full load Ta:25°C	I=66.5A/230VAC I=31.5A/115VAC	P

Protection function test

NO.	Test item	Specication	Test condition	Result	Verdict
1	Over load protection	105-135%	I/P:277VAC I/P:230VAC I/P:115VAC O/P:Testing Ta:25°C	117.21%/277VAC 117.21%/230VAC 117.21%/115VAC See specification	P
2	Over voltage protection	CH1:30V~36V	I/P:277VAC I/P:230VAC I/P:85VAC O/P:Min load Ta:25°C	33.7V/277VAC 33.7V/230VAC 33.7V/85VAC Shut down Re-power ON	P
3	Short protection	Short every output 1 hour NO damage	I/P:277VAC I/P:85VAC O/P:Full load Ta:25°C	NO damage Hiccup mode	P

Environment test

NO.	Test item	Specication	Test condition	Result	Verdict	
1	Temperature rise test	Model:MLR150-24			P	
		1.Room ambient burn-in: 2HS				
		I/P:230VAC O/P:Full load Ta=24.5°C				
		2.High ambient burn-in: 2HS				
		I/P:230VAC O/P:Full load Ta=45.3°C				
		NO.	P/N	Room ambient Ta=24.5°C		High ambient Ta=45.3°C
		1	U1	77.5		92.6
		2	LF1	48.4		66.7
		3	LF2	65.8		79.5
		4	BD1	76.5		91.9
		5	T2	68.9		89.5
		6	C5	62.4		81.5
		7	RTH2	78.9		95.9
		8	C10	75.9		95.9
		9	T1 COIL	88.1		109.5
		10	Q4	88.5		107.5
		11	L100	57.6		76.9
12	Q100	70.5	88.6			
13	D10	74.6	96.4			
14	R1	88.9	102.6			
15	C103	62.8	83.6			
16	C105	60.9	80.2			
2	Over load burn-in test	NO damage 1 Hours	I/P:230VAC O/P:120% load Ta:25°C	ok	P	
3	Low temperature turn on test	Turn-in after 2 hour	I/P:277VAC/100VAC O/P:100% load Ta:-30°C	ok		
4	Vibration test	(1) Waveform: Sine wave (2) Frequency:10~500Hz (3) Sweep time:10min/sweep cycle (4) Acceleration:2G (5) Test time:1 hour in each axis (X.Y.Z) Ta:25°C		ok	P	

Safety test

NO.	Test item	Specication	Test condition	Result	Verdict
1	Withstand voltage	I/P-O/P:4.0KVAC/min	I/P-O/P:4.4KVAC/min Ta:25°C	I/P-O/P:1.51mA No damage	P
2	Isolation resistance	I/P-O/P:500VDC>100M Ω	I/P-O/P:600VDC Ta:25°C/70%RH	I/P-O/P:9999M Ω No damage	P

Componment stress tset

NO.	Test item	Specication	Test condition	Result	Verdict
1	Power transistor peak voltage	650V	I/P:280VAC O/P:(1)Full load turn on (2)Output short (3)Full load continue Ta:25°C	VDS: 536V 496V 537V	P
2	Output MOSFET	150V	I/P:280VAC O/P:(1)Full load turn on (2)Output short (3)Full load continue Ta:25°C	131V 108V 131V	P
3	Input capacitor voltage	120uF/400V	I/P:280VAC O/P:(1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load (4)Full load continue Ta:25°C	398V 395V 395V 387V	P
4	Control IC voltage test	U100:37V (max) 0V (min) U1:35V (max) 0V (min)	I/P:280VAC O/P:(1)Full Load (2)Output short (3)O.L.P Change (4)O.V.P (5)Low Line No Load Ta:25°C	U100 U1 25.5V 20.2V 2.6V 12.3V 5.4V 12.3V 33.3V 20.1V 22.4V 15.9V	P

E.M.C test

NO.	Test item	Specication	Test condition	Result	Verdict
1	HARMONIC	EN IEC 61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	/	P
2	CONDUCTION	EN 55032 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS	P
3	RADIATION	EN 55032 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS	P
4	E.S.D	EN 61000-4-2 LIGHT INDUSTRY AIR:8KV	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN 61000-4-4 LIGHT INDUSTRY INPUT: 2KV	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	EN 61000-4-5 LIGHT INDUSTRY L-N :2KV	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	CRITERIA A	P

Date	TEST	Check	Approver	Result
2023-9-6	JH HUANG	GQ Z	YX CHEN	PASS