



Test report:MGR060-24F

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Output function test

NO.	Test item	Specication	Test condition	Result	Verdict
1	Ripple & noise	V1:150mVp-p(Max)	I/P:230VAC O/P:Full load Ta:25°C	20mVp-p	P
2	Output voltage adjust range	CH1:24V~30V	I/P:230VAC I/P:115VAC O/P:Min load Ta:25°C	23-32V/230VAC 23-32V/115VAC	P
3	Output voltage tolerance	V1:1% ~ -1%(Max)	I/P:100VAC/264VAC O/P:Full/min load Ta:25°C	V1:0.08%~-0.08%	P
4	Line regulation	V1:1% ~ -1%(Max)	I/P:100VAC ~ 264VAC O/P:Full load Ta:25°C	V1:0%~-0%	P
5	Load regulation	V1:1% ~ -1%(Max)	I/P:230VAC O/P:Full/min load Ta:25°C	V1:0.08%~-0.08%	P
6	Set up time	230VAC/500ms(Max) 115VAC/500ms(Max)	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	270ms/230VAC 185ms/115VAC	P
7	Rise time	230VAC/30ms(Max) 115VAC/30ms(Max)	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	12ms/230VAC 12ms/115VAC	P
8	Hold up time	230VAC/50ms(TYP) 115VAC/20ms(TYP)	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	100ms/230VAC 22ms/115VAC	P
9	Over/undershot 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 ~ 264VAC	I/P:Testing O/P:Full load Ta:25°C	51VAC - 264VAC	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 damage)	ok	
2	Input frequency range	47Hz ~ 63Hz NO damage	I/P:85AC ~ 264VAC O/P:Full/min load Ta:25°C	ok	P
3	Efficiency	88%(TYP)	I/P:230VAC O/P:Full load Ta:25°C	88.50%	P
4	Input current	230V/1A(TYP) 115V/1.8A(TYP)	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	I=0.7A/230VAC I=1.1A/115VAC	P
5	Inrush current	230V/60A(TYP) 115V/30A(TYP) cold start	I/P:230VAC I/P:115VAC O/P:Full load Ta:25°C	I=52.5A/230VAC I=25.5A/115VAC	P
6	Leakage current	< 1 mA / 230VAC	I/P: 230 VAC O/P:Min load Ta:25°C	L-FG: 0.62 mA N-FG: 0.62 mA	P

Protection function test

NO.	Test item	Specication	Test condition	Result	Verdict
1	Over load protection	105~150%	I/P:230VAC I/P:115VAC O/P:Testing Ta:25°C	122%/115VAC 121%/230VAC Constant current limiting	P
2	Over voltage protection	CH1:31.2V ~ 36V	I/P:230VAC I/P:115VAC O/P:Min load Ta:25°C	34V/115VAC 34V/230VAC Shunt down Re-power ON	P
3	Short protection	Short every output 1 hour NO damage	I/P:264VAC O/P:Full load Ta:25°C	NO damage Constant current limiting	P

Environment test

NO.	Test item	Specication	Test condition	Result	Verdict	
1	Temperature rise test	Model : MGR060-24F			P	
		1.Room ambient burn-in : 2HRS				
		I/P:230VAC O/P:Full load Ta=29.5°C				
		2.High ambient burn-in : 2HRS				
		I/P:230VAC O/P:Full load Ta=55.6°C				
		NO.	P/N	Room ambient Ta= 31.4°C		High ambient Ta= 44.6°C
		1	Q1	71.5		100
		2	D1	70		97.6
		3	ZD1	61.3		88
		4	TI COIL	77.9		104
		5	C5	47.9		73.9
		6	BD1	50		75.8
		7	C36	58.5		84.9
		8	C200	60.8		85.5
		9	D100	66.3		90.3
		10	C105	57.9		82.9
		10	L100	56.9		81.9
		11	LF1	44.8		71.5
12	U1	57.5	83.5			
13	U100	54.9	79.5			
14	RY1	51.9	77			
2	Over load burn-in test	NO damage 1 Hours(min)	I/P:230VAC O/P:124%load Ta:25°C	ok	P	
3	Low temperature turn on test	Turn-in after 2 hour	I/P:230VAC O/P:100%load Ta:-20°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:3.0KVAC/min I/P-FG:1.5KVAC/min O/P-FG:0.5KVAC/min	I/P-O/P:3.6KVAC/min I/P-FG:1.8KVAC/min O/P-FG:0.6KVAC/min Ta:25°C	I/P-O/P:6.1mA I/P-FG:5mA O/P-FG:3.3mA No damage	P
2	Isolation resistance	I/P-O/P:500VDC>100MΩ I/P-FG:500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P:500VDC I/P-FG:500VDC O/P-FG:500VDC Ta:25°C	I/P-O/P:4.5GΩ I/P-FG:5GΩ O/P-FG:6GΩ No damage	P

Componment stress tset

NO.	Test item	Specication	Test condition	Result	Verdict
1	Power transistor peak voltage	7.5A/700V	I/P:High-line +3V = 267V O/P:(1)Full load turn on (2)Output short Ta:25°C	579V 575V	P
2	Diode peak voltage	10A/200V	I/P:High-line +3V = 267V O/P:(1)Full load turn on (2)Output short Ta:25°C	185V 185V	P
3	Input capacitor voltage	150uF/400V	I/P:High-line +3V = 267V O/P:(1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	377V 377V 377V	P
4	Control IC voltage test	IC:16V	I/P:High-line +3V = 267V O/P:(1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	12V 11V 12V	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: 1KV	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 :1KV L,N-PE: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	GL YAO	YX CHEN	PASS