



MODEL : MDR-100-24

## OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 150 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 18 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 24 V~ 30V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	22.74 V~ 31.5 V/ 230 VAC 22.74 V~ 31.5 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %- -1 % (Max)	I/P: 100VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.3 %- -0.3 %	P
4	LINE REGULATION	V1: 1 %- -1 % (Max)	I/P: 100VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0 %- -0.03 %	P
5	LOAD REGULATION	V1: 1 %- -1 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.2 %- -0.2 %	P
6	SET UP TIME	230VAC: 3000 ms (Max) 115 VAC: 3000 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 1383 ms 115VAC/ 1383 ms	P
7	RISE TIME	230VAC: 50 ms (Max) 115VAC: 50 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 15 ms 115VAC/ 16 ms	P
8	HOLD UP TIME	230VAC: 50 ms (TYP) 115VAC: 20 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 70 ms 115VAC/ 21 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5 %	P
10	DYNAMIC LOAD	V1: 2400 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	291 mVp-p	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	85VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	58V~264V	P
			I/P: LOW-LINE-3V= 82 V HIGH-LINE+15%=300 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN ( AC POWER ON/OFF NO DAMAGE )	TEST: OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P: 85 VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	87 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	87 %	P
4	INPUT CURRENT	230V/ 0.8 A (TYP)	P	I = 0.4 A/ 230 VAC 6	P
		115V/ 1.3 A (TYP)		I = 0.9 A/ 115 VAC	
5	INRUSH CURRENT	230V/ 60 A (TYP)	P	I = 53.4 A/230VAC	P
		115V/ 30 A(TYP) COLD START		I = 27 A/115VAC	
6	LEAKAGE CURRENT	< 1 mA/ 240 VAC	P	L-FG: 0.74 mA N-FG: 0.74 mA	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	124 %/ 230 VAC 122 %/ 115 VAC Constant Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1: 31.2V~ 36V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	34.7 V/ 230 VAC 34.6 V/ 115 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 90°C± 10°C O.T.P. NO DAMAGE	I/P: 230 VAC O/P:FULL LOAD	O.T.P. Active Shunt down Re- power ON	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE Constant Current Limiting	P

**CONTROL FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	NO LOAD POWER CON SUMPTION	<1W	I/P: 230 VAC I/P: 115 VAC O/P:NO LOAD Ta:25°C	230 VAC/ 0.8 W 115 VAC/ 0.49 W	P
2	DC OK SIGNAL	30V/ 1A	I/P: 230 VAC O/P: FULL LOAD Ta:25°C	OK	P

**ENVIRONMENT TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : MDR-100-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 24.8 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 41.1 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P:118 % LOAD Ta:25°C	TEST : OK	P
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100 % LOAD Ta= -10°C	TEST : OK	P
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 40°C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 40°C HUMIDITY= 95 %R.H	TEST : OK	P
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.0026 %(0-50°C)	P
6	VIBRATION TEST	1 Carton & 1 Set (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) (6) Ta:25°C		TEST : OK	P

**SAFETY TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C	I/P-O/P: 5.77 mA I/P-FG: 5.2 mA O/P-FG: 2.6 mA 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: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: 30 GΩ I/P-FG: 3.45 GΩ O/P-FG: 30 GΩ NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : UL: File NO :			N/A

**E.M.C TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A CLASS D	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 INDUSTRY AIR:8KV / Contact:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 INDUSTRY L-N :2KV L,N-PE:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
7	Test by certified Lab & Test Report Prepare				

**M.T.B.F & LIFE CYCLE CALCULATION**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	MDR-100-24: SUPPOSE C106	IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25°C LIFE TIME= 171687.6 HRS I/P: 230VAC O/P:FULL LOAD Ta= 40°C LIFE TIME= 69287.4 HRS		P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 346KHRS			P

**COMPONENT STRESS TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) <b>Peak Voltage</b>	Q1 Rated SPA11N65C3 11A/650V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 598 V (2) 470 V	P
2	Diode <b>Peak Voltage</b>	Q100 Rated IRF3415 43A/150V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 123 V (2) 121 V	P
3	Clamp Diode <b>Peak Voltage</b>	D2 Rated 1N5406: 600V 3A	I/P:High-Line +3V = 267 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 536 V	P
4	<b>Input Capacitor Voltage</b>	C5 Rated 100u/400V 105°C	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 386 V (2) 370 V (3) 386 V	P
5	<b>Control IC Voltage Test</b>	U2 Rated TEA1552 : 20V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 17.9 V (2) 17.67 V (3) 17.9 V	P
6	Power Transistor (D to S) or (C to E) <b>Peak Voltage</b>	Q2 Rated 2SK2843 10A/600V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 442 V (2) 396 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2007/12/17	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2008/3/3	PRODUCT SAMPLE W0801A63	PASS	SANFORD SU	VINCENT TSENG
2008/4/1	PRODUCT SAMPLE W0802C12	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023