

MODEL : MDR-10-15

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 18 mVp-p (Max)	P
2	OUTPUT VOLTAGE TOLERANCE	V1: 3 %- -3 % (Max)	I/P: 100VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.2 %- -0.2 %	P
3	LINE REGULATION	V1: 1 %- -1 % (Max)	I/P: 100VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.08 %- -0.08 %	P
4	LOAD REGULATION	V1: 3%- -3 % (Max)	I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0.2 %- -0.2 %	P
5	SET UP TIME	230VAC: 500 ms (Max) 115 VAC: 1000 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 324 ms 115VAC/ 648 ms	P
6	RISE TIME	230VAC: 30 ms (Max) 115VAC: 30 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 6 ms 115VAC/ 6 ms	P
7	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/ 141 ms 115VAC/ 31 ms	P
8	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: <5 %	P
9	DYNAMIC LOAD	V1: 1500 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	199 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	50V~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	80 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	81.89%	P
4	INPUT CURRENT	230V/ 0.21 A (TYP) 115V/ 0.33 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.14 A/ 230 VAC I = 0.23 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 70 A (TYP) 115V/ 35 A (TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 64 A/ 230 VAC I = 32 A/ 115 VAC	P
6	LEAKAGE CURRENT	< 1 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.64 mA N-FG: 0.66 mA	p

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	Above 105 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	213%/230 VAC 230%/ 115 VAC Hiccup mode	P
2	OVER VOLTAGE PROTECTION	CH1: 17.25 V~ 20.25 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	18.5V/ 230 VAC 18.5V/ 115 VAC Shut down Re- power ON	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE Hiccup mode	p

**CONTROL FUNCTION TESTP**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	NO LOAD POWER CON SUMPTION	<0.75W	I/P: 230 VAC I/P: 115 VAC O/P:NO LOAD Ta:25°C	230 VAC/ 0.49W 115 VAC/ 0.41W	p
2	DC OK ACTIVE SIGNAL (max)	11.5V~16.5V / 40mA	I/P: 230 VAC I/P: 115 VAC O/P: 50mA Ta:25°C	230 VAC/ 14.51V 115 VAC/ 14.52V	p

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : MDR-10-24 1. ROOM AMBIENT BURN-IN : 2HRS I/P: 230VAC O/P: FULL LOAD Ta=27.5°C 2. HIGH AMBIENT BURN-IN : 18HRS I/P: 230VAC O/P: FULL LOAD Ta=57.7°C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 177% 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= -20°C	TEST : OK	P
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60°C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 60°C HUMIDITY= 95 %R.H	TEST : OK	P
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.005 %(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: 4.18 mA I/P-FG: 5 mA O/P-FG: 2.459 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: 2.04 GΩ O/P-FG: 30 GΩ NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : UL: File NO : E215312			p

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 EN55011 EN61204-3 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 EN55011 EN61204-3 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 LIGHT 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 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :1KV L,N-PE:2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
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-10-24 : SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25°C LIFE TIME=490972HRS I/P: 230VAC O/P:FULL LOAD Ta= 60°C LIFE TIME=69032 HRS			p
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 584KHRS			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> Diode Peak <b>Voltage</b>	Q 1 Rated 2SK2628LS 6A/600V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 546 V (2) 546 V	P
2	Clamp Diode Peak <b>Voltage</b> Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	D100 Rated BYQ28X-200 10A/200V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 158 V (2) 140 V	P
3	Diode Peak <b>Voltage</b>	D1 Rated 1A/1KV 1N4007GP	I/P:High-Line +3V = 267 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 412 V	P
4	<b>Input Capacitor Voltage</b>	C 5 Rated 33u/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) 380 V (2) 384 V (3) 384 V	P
5	<b>Control IC Voltage Test</b>	U 1 Rated 1230D65R2G0: 18 V	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) 11.73 V (2) 10.987 V (3) 11.73 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/2/22	RD SAMPLE	PASS	SANFODR SU	VINCENT TSENG
2008/4/29	PRODUCT SAMPLE W0803D94	PASS	SANFODR SU	VINCENT TSENG
2008/6/17	PRODUCT SAMPLE W0805B10	PASS	SANFODR SU	VINCENT TSENG

2003/12/12 A50-F023