

MODEL : DRP-480S-24

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 6 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 24V ~ 28V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	21.2V~29.78 V/230 VAC 21.2V~29.78 V/115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %~ -1 % (Max)	I/P: 190 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.1%~ -0.1 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 190 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.05 %~ -0.05 %	P
5	LOAD REGULATION	V1: 1 %~ -1 % (Max)	I/P:230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.1%~ -0.1 %	P
6	SET UP TIME	230 VAC/ 1200 ms (Max) 115 VAC/ 1200 ms (Max)	I/P:230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 1001 ms 115 VAC/ 314 ms	P
7	RISE TIME	230 VAC/ 40 ms (Max) 115 VAC/ 40 ms (Max)	I/P:230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 15 ms 115 VAC/ 14 ms	P
8	HOLD UP TIME	230 VAC/ 20 ms (Min) 115 VAC/ 20 ms (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 28 ms 115 VAC/ 30 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	662 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	180VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	159 V~ 264 V	P
			I/P: LOW-LINE-3V= 177 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	47 HZ ~ 63 HZ NO DAMAGE OSC	I/P: 190 VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	POWER FACTOR	0.7/ 230 VAC (Min)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	PF= 0.78 / 230 VAC	P
4	EFFICIENCY	89 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	89.6 %	P
5	INPUT CURRENT	230 V/ 4 A (Max) 115 V/ 11 A (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 3.1 A/ 230 VAC I = 8 A/ 115 VAC	P
6	INRUSH CURRENT	230 V/ 50 A (Max) 115 V/ 30 A (Max) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 35 A/ 23 VAC I = 20 A/ 115 VAC	P
7	LEAKAGE CURRENT	< 3.5 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.3 mA N-FG: 0.4 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C	121% / 230 VAC 121% / 115 VAC Constant Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1: 30 V~36 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	34.9V / 230 VAC 34.9V / 115 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 100°C±5 °C O.T.P. NO DAMAGE	I/P: 230 VAC O/P: FULL LOAD	O.T.P. Active Shut down o/p voltage , recovers automatically after temperature goes down	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

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																
1	TEMPERATURE RISE TEST	MODEL : DRP-480S-24 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 230 VAC O/P: FULL LOAD Ta=31.5 °C 2. HIGH AMBIENT BURN-IN : HRS I/P: 230 VAC O/P: FULL LOAD Ta=52.1 °C			P																																																																																
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 117% 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 50 °C NO DAMAGE	I/P: 230 VAC O/P: FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																
5	TEMPERATURE COEFFICIENT	± 0.03 %(0~50°C)	I/P: 230 VAC O/P: FULL LOAD	± 0.01 %(0~50°C)	P																																																																																
6	VIBRATION TEST	1 Carton & 1 Set Operating at I/P: 230 VAC NO LOAD (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: 6.76 mA I/P-FG: 6.21 mA O/P-FG: 4.25 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: 13 G Ω I/P-FG: 6 G Ω O/P-FG: 7 G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	30 A / 2min Ta:25°C	4 mΩ	P
4	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	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 20 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	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C 53 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta=25 °C LIFE TIME=277460 I/P:230 VAC O/P:FULL LOAD Ta=50 °C LIFE TIME=67964		HRS HRS	P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 187.9K HRS			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q 1 Rated 24N50 : 500 V 24 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 202 V (2) 352 V (3) 472 V	P
2	Diode Peak Voltage	D 54 Rated D9202 : 200 V 20 A D 51 Rated 20CTQ150 : 150 V 20 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 152 V (2) 168 V (3) 185 V (1) 34.4 V (2) 104 V (3) 97.2 V	P
3	Input Capacitor Voltage	C 5 Rated Rubycon : 1000 u / 200 V 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 (4)Burn-IN Hour Ta:25°C	(1) 202 V (2) 191 V (3) 191 V (4) 187 V	P
4	Control IC Voltage Test	U 1 Rated IC 2842 : 30 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 (4) Output Short Ta:25°C	(1) 23.4 V (2) 23.5 V (3) 24.8 V (4) 18.3 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/2/6	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/3/12	PRODUCT SAMPLE A402A02	PASS	VINCENT TSENG	MAX LIN
2004/5/6	PRODUCT SAMPLE A404B38	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023