

MODEL : DRT-480-24

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max)	I/P: 400 VAC O/P:FULL LOAD Ta:25°C	V1: 20 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 28 V~ 24 V	I/P: 400 VAC O/P:MIN LOAD Ta:25°C	23.38V~ 29.81 V/400VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -1 %~ 1 % (Max)	I/P: 340 VAC / 550 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
4	LINE REGULATION	V1: -0.5%~ 0.5 % (Max)	I/P: 340 VAC ~ 550 VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~ 0 %	P
5	LOAD REGULATION	V1: -0.5 %~ 0.5 % (Max)	I/P: 400 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
6	SET UP TIME	400 VAC/ 1200 ms (Max) 500 VAC/ 800 ms (Max)	I/P: 400 VAC I/P: 500 VAC O/P:FULL LOAD Ta:25°C	400 VAC/ 800 ms 500 VAC/ 750 ms	P
7	RISE TIME	400 VAC/ 40 ms (Max) 500 VAC/ 40 ms (Max)	I/P: 400 VAC I/P: 500 VAC O/P:FULL LOAD Ta:25°C	400 VAC/ 27 ms 500 VAC/ 27 ms	P
8	HOLD UP TIME	400 VAC/ 16 ms (TYP) 500 VAC/ 35 ms (TYP)	I/P: 400 VAC I/P: 500 VAC O/P:FULL LOAD Ta:25°C	400 VAC/ 21 ms 500 VAC/ 42 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 400 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5 %	P
10	DYNAMIC LOAD	V1: 2400 mVp-p	I/P: 400 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	562 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	340VAC~ 550VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	275 V~550V	P
			I/P: LOW-LINE-3V= 337 V HIGH-LINE+15%= 600 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST: OK	
2	EFFICIENCY	89 % (TYP)	I/P: 400 VAC O/P:FULL LOAD Ta:25°C	89.2 %	P
3	INPUT CURRENT	400 V/ 1.7 A (TYP) 500 V/ 1.3 A (TYP)	I/P: 400 VAC I/P: 500 VAC O/P:FULL LOAD Ta:25°C	I = 0.9 A/ 400 VAC I = 0.7 A/ 500 VAC	P
4	INRUSH CURRENT	400 V/ 50 A(TYP) COLD START	I/P: 400 VAC O/P:FULL LOAD Ta:25°C	I = 23 A/ 400 VAC	P
5	LEAKAGE CURRENT	< 3.5 mA / 530 VAC	I/P: 562 VAC O/P:Min LOAD Ta:25°C	L1-FG: 0.8 mA L2-FG: 0.8 mA L3-FG: 0.8 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %~ 150 %	I/P: 400 VAC I/P: 500 VAC O/P: TESTING Ta:25°C	120 %/ 400 VAC 120 %/ 500 VAC Constant Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1: 30 V~ 36 V	I/P: 400 VAC I/P: 500 VAC O/P: MIN LOAD Ta:25°C	35.3 V/ 400 VAC 35.3 V/ 500 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 110±5 °C O.T.P. NO DAMAGE	I/P: 400 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: 550 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 : DRT-480-24 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 400 VAC O/P: FULL LOAD Ta=30.3 °C 2. HIGH AMBIENT BURN-IN : 3.5 HRS I/P: 400 VAC O/P: FULL LOAD Ta=47.9 °C <table><thead><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= °C</th><th>HIGH AMBIENT Ta= °C</th></tr></thead><tbody><tr><td>1</td><td>LF2</td><td>TR-423</td><td>62.0°C</td><td>72.2°C</td></tr><tr><td>2</td><td>D6</td><td>BY228GP 1.5KV/5A PH</td><td>79.5°C</td><td>89.2°C</td></tr><tr><td>3</td><td>ZD1</td><td>BZY97C100 100V/1.5W</td><td>62.9°C</td><td>72.7°C</td></tr><tr><td>4</td><td>C6</td><td>330U/450V RUB 105°C MXC</td><td>55.7°C</td><td>66.8°C</td></tr><tr><td>5</td><td>Q2</td><td>2SK2082 9A/800V FUJI</td><td>89.7°C</td><td>102.3°C</td></tr><tr><td>6</td><td>Q1</td><td>2SK2082 9A/800V FUJI</td><td>81.1°C</td><td>90.1°C</td></tr><tr><td>7</td><td>TSW1</td><td>ST-110°C</td><td>80.9°C</td><td>93.5°C</td></tr><tr><td>8</td><td>U1</td><td>2842 ON</td><td>65.9°C</td><td>76.1°C</td></tr><tr><td>9</td><td>C34</td><td>220U/25V NCC 105°C KY</td><td>56.5°C</td><td>66.6°C</td></tr><tr><td>10</td><td>Q8</td><td>TIP122 5A/100V FIR</td><td>50.6°C</td><td>58.6°C</td></tr><tr><td>11</td><td>L1</td><td>TR-422</td><td>48.0°C</td><td>57.8°C</td></tr><tr><td>12</td><td>L4</td><td>PFC-CHOCK</td><td>57.5°C</td><td>68.2°C</td></tr><tr><td>13</td><td>D15</td><td>SF5408 3A/1KV LT</td><td>76.7°C</td><td>89.8°C</td></tr><tr><td>14</td><td>T1 COIL</td><td>TF-985-C LS</td><td>71.8°C</td><td>83.8°C</td></tr><tr><td>15</td><td>C53</td><td>1500U/35V NIPP 105°C KY</td><td>72.3°C</td><td>82.6°C</td></tr></tbody></table>			NO	Position	P/N	ROOM AMBIENT Ta= °C	HIGH AMBIENT Ta= °C	1	LF2	TR-423	62.0°C	72.2°C	2	D6	BY228GP 1.5KV/5A PH	79.5°C	89.2°C	3	ZD1	BZY97C100 100V/1.5W	62.9°C	72.7°C	4	C6	330U/450V RUB 105°C MXC	55.7°C	66.8°C	5	Q2	2SK2082 9A/800V FUJI	89.7°C	102.3°C	6	Q1	2SK2082 9A/800V FUJI	81.1°C	90.1°C	7	TSW1	ST-110°C	80.9°C	93.5°C	8	U1	2842 ON	65.9°C	76.1°C	9	C34	220U/25V NCC 105°C KY	56.5°C	66.6°C	10	Q8	TIP122 5A/100V FIR	50.6°C	58.6°C	11	L1	TR-422	48.0°C	57.8°C	12	L4	PFC-CHOCK	57.5°C	68.2°C	13	D15	SF5408 3A/1KV LT	76.7°C	89.8°C	14	T1 COIL	TF-985-C LS	71.8°C	83.8°C	15	C53	1500U/35V NIPP 105°C KY	72.3°C	82.6°C	P
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 400 VAC O/P: 109% LOAD Ta:25°C	TEST : OK	P																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 400 VAC O/P: 100 % LOAD Ta=-30°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: 567VAC O/P:FULL LOAD Ta=50°C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																
5	TEMPERATURE COEFFICIENT	± 0.03 %(0~50°C)	I/P: 400 VAC O/P:FULL LOAD	± 0.01 %(0~50°C)	P																																																																																
6	VIBRATION TEST	1 Carton & 1 Set Operating at I/P: 400 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: 3.97 mA I/P-FG: 3.15 mA O/P-FG: 2.31 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: 2GΩ I/P-FG: 3GΩ O/P-FG: 4GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	4 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50045858 UL: File NO : E183223			P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 400 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55011 CLASS B	I/P: 400 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55011 CLASS B	I/P: 400 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: 400 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 400 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: 400 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: 400 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 170363 HRS I/P: 400 VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 49898 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 91.1K 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 2SK2082: 900 V 9 A	I/P:High-Line +3V = 553 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 528 V (2) 600 V (3) 808 V	P
2	Diode Peak Voltage	D 53 Rated D9202 : 200 V 20 A	I/P:High-Line +3V = 553 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 111 V (2) 181 V (3) 190 V	P
3	Input Capacitor Voltage	C 6 Rated HITACH: 330 u / 400 V 105 °C	I/P:High-Line +3V = 553 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change (4)Burn-IN 1 Hour Ta:25°C	(1) 398 V (2) 398 V (3) 398 V (4) 376 V	P
4	Control IC Voltage Test	U 1 Rated 2842 : 30 V	I/P:High-Line +3V = 553 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) 18.8 V (2) 18.8 V (3) 18.8 V (4) 18.0 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/2/11	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/5/6	PRODUCT SAMPLE A403A04	PASS	VINCENT TSENG	MAX LIN
2004/8/16	PRODUCT SAMPLE A407C191	PASS	VINCENT TSENG	MAX LIN
2004/8/19	PRODUCT SAMPLE A408A03	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023