

MODEL : DRT-960-24

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max)	I/P: 400VAC O/P:FULL LOAD Ta:25°C	V1: 15 mVp-p (Max))	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 24 V~ 28 V	I/P: 400 VAC O/P:MIN LOAD Ta:25°C	21.32 V~ 29.42 V/ 400 VAC 21.32 V~ 29.42 V/ 500 VAC	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: 0.05 %~ -0.05 %	P
5	LOAD REGULATION	V1: -0.5 %~ 0.5 % (Max)	I/P: 400 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.15 %~ -0.15 %	P
6	SET UP TIME	400VAC: 200 ms (Max) 500VAC: 200 ms (Max)	I/P: 400 VAC I/P: 500 VAC O/P:FULL LOAD Ta:25°C	400VAC/ 122 ms 500VAC/ 91 ms	P
7	RISE TIME	400VAC: 60 ms (Max) 500VAC: 60 ms (Max)	I/P: 400 VAC I/P: 500 VAC O/P:FULL LOAD Ta:25°C	400VAC/ 34 ms 500VAC/ 28 ms	P
8	HOLD UP TIME	400VAC: 10 ms (TYP) 500VAC: 30 ms(TYP)	I/P: 400 VAC I/P: 500 VAC O/P:FULL LOAD Ta:25°C	400VAC/ 14 ms 500VAC/ 31 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	1249 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	340VAC-550 VAC)	I/P:TESTING O/P:FULL LOAD Ta:25°C	270 V-550V	P
			I/P: LOW-LINE-3V= 337 V HIGH-LINE+10V= 560 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: 340 VAC ~ 550 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	91 % (TYP)	I/P: 400 VAC O/P:FULL LOAD Ta:25°C	91.2 %	P
4	INPUT CURRENT	400V/ 2 A (TYP) 500V/ 1.6 A (TYP)	I/P: 400 VAC I/P: 500 VAC O/P:FULL LOAD Ta:25°C	I = 1.91 A/400 VAC I = 1.54 A/ 500 VAC	P
5	INRUSH CURRENT	400V/ 50 A(TYP) COLD START	I/P: 400 VAC O/P:FULL LOAD Ta:25°C	I = 30 A/400AC	P
6	LEAKAGE CURRENT	< 3.5 mA/ 530 VAC	I/P: 530 VAC O/P:Min LOAD Ta:25°C	L1-FG: 0.7 mA L2-FG: 0.7 mA L3-FG: 0.7 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %- 125 %	I/P: 400 VAC I/P: 500 VAC O/P:TESTING Ta:25°C	112 %/ 400 VAC 112 %/ 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	32.7 V/ 400 VAC 32.7 V/ 500 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: TSW1: 110±5 °C O.T.P. TSW2: 85±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 ,unit will Shut down o/p voltage after 3 sec, Re-power on to recover	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : DRT-960-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 400VAC O/P: FULL LOAD Ta= 29 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 400VAC O/P: FULL LOAD Ta= 47.4 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 400 VAC O/P: 110 % 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= -20 °C	TEST : OK	P
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 45 °C NO DAMAGE	I/P: 567 VAC O/P:FULL LOAD Ta= 45 °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 (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: 4.11 mA I/P-FG: 2.74 mA O/P-FG: 5.76 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: 12 GΩ O/P-FG: 18 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	14 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50061104 UL: File NO : E215312/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	EN55022 EN55011 CLASS B	I/P: 400 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 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 205 IS THE MOST CRITICAL COMPONENT I/P: 400VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 98254 HRS I/P: 400VAC O/P:FULL LOAD Ta= 45 °C LIFE TIME= 47122 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 122.5K 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 50 Rated 15NK90Z : 900V 15A	I/P:High-Line +3V = 553 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 788 V (2) 748 V (3) 368 V	P
2	Diode Peak Voltage	D201 Rated 60CPQ150 : 150 V 60A	I/P:High-Line +3V = 553 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 96 V (2) 100 V (3) 100 V	P
3	Input Capacitor Voltage	C5 Rated : 470u / 420V/ 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 Ta:25°C	(1) 414 V (2) 388 V (3) 388 V	P
4	Control IC Voltage Test	U102 Rated UCC2895N : 17 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 Ta:25°C	(1) 15.4 V (2) 15.4 V (3) 15.4 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2005/3/2	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2005/6/1	PRODUCT SAMPLE W0504A02	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023