MODEL：RQ-65C

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max) V2: 120 mVp-p (Max) V3: 80 mVp-p (Max) V4: 80 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	V1: 20 mVp-p (Max) V2: 8 mVp-p (Max) V3:9 mVp-p (Max) V4:10 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75 V~ 5.5 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	4.46V~ 5.83 V/ 230VAC 4.46V~ 5.83 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -2 %~ 2 % (Max) V2: -4 %~ 8 % (Max) V3: -5 %~ 5 % (Max) V4: -5 %~ 5 % (Max)	I/P: 115 VAC / 264 VAC O/P:FULL/ MIN 40 % LOAD Ta:25℃	V1: 0.2 %~-0.2 % V2: 2.2%~ -2.2 % V3: 0.2%~ -0.2 % V4: 0.1 %~-0.1 %	P
4	LINE REGULATION	V1: -0.5 %~ 0.5 % (Max) V2: -1.5 %~ 1.5 % (Max) V3: -0.5 %~ 0.5 % (Max) V4: -0.5 %~ 0.5 % (Max)	I/P: 115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25℃	V1: 0 %~ 0 % V2: 0.05 %~ -0.9 % V3: 0%~ 0% V4: 0%~ 0%	P
5	LOAD REGULATION	V1: -0.5 %~ 0.5 % (Max) V2: -3 %~ 3 % (Max) V3: -1 %~ 1 % (Max) V4: -1 %~ 1 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0%~-0.2 % V2: 0.3 %~ -0.8 % V3: 0.2%~ -0.2% V4: 0.1 %~ -0.1 %	P
6	CROSS REGULATION	V1: -0.5 %~ 0.5 % (Max) V2: -3 %~ 3 % (Max) V3: -1 %~ 1 % (Max) V4: -1 %~ 1 % (Max)	I/P: 230 VAC O/P: Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25℃	V1: 0 %~ 0 % V2: 1.5 %~ -1.5 % V3: 0.2%~ 0 % V4: 0.1 %~ -0.1 %	P
7	SET UP TIME	230 VAC/ 500 ms (Max) 115 VAC/ 1200 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230 VAC/ 195 ms 115 VAC/ 734 ms	P
8	RISE TIME	230 VAC/ 20 ms (Max) 115 VAC/ 20 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230 VAC/ 8.3 ms 115 VAC/ 8 ms	P
9	HOLD UP TIME	230 VAC/ 50 ms (TYP) 115 VAC/ 10 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230 VAC/ 78 ms 115 VAC/ 15 ms	P
10	OVER/UNDERSHOOT TEST	＜±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: ＜5 %	P
11	DYNAMIC LOAD	V1: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	205 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~ 264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25℃	57 V~ 264 V	P
			I/P: LOW-LINE-3V= 85 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: 88 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25℃	TEST: OK	P
3	EFFICIENCY	76 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	76.9 %	P
4	INPUT CURRENT	230 V/ 1.2 A (TYP) 115 V/ 2 A(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	I = 0.8 A/ 230 VAC I = 1.3 A/ 115 VAC	P
5	INRUSH CURRENT	230 V/ 40 A (TYP) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	I = 30.6 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / VAC	I/P: 254 VAC O/P:Min LOAD Ta:25℃	L-FG: 0.54 mA N-FG: 0.54 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110 %~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25℃	130%/ 230 VAC 131%/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 5.75 V~ 6.75 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	6.38V/ 230 VAC 6.38V/ 115 VAC Hiccup Model	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: Full LOAD Ta:25℃	NO DAMAGE Hiccup Mode	P

ENVIRONMENT TEST

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECICATION</th><th>TEST CONDITION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">MODEL：RQ-65C
1. ROOM AMBIENT BURN-IN： HRS
I/P: 230VAC O/P: FULL LOAD Ta= 27.2 ℃
2. HIGH AMBIENT BURN-IN： HRS
I/P: 230VAC O/P: FULL LOAD Ta=46.3 ℃

<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 27.2 ℃</th><th>HIGH AMBIENT Ta= 46.3 ℃</th></tr>
<tr><td>1</td><td>BD1</td><td>D4SB80 4A/800V SHI</td><td>71.5℃</td><td>85.7℃</td></tr>
<tr><td>2</td><td>LF1</td><td>TF-479</td><td>67.0℃</td><td>81.3℃</td></tr>
<tr><td>3</td><td>C5</td><td>150U/400V 105℃ HU4</td><td>64.9℃</td><td>79.7℃</td></tr>
<tr><td>4</td><td>Q1</td><td>K2545 6A/600V TOS</td><td>87.6℃</td><td>103.1℃</td></tr>
<tr><td>5</td><td>U1</td><td>1203</td><td>86.1℃</td><td>99.6℃</td></tr>
<tr><td>6</td><td>C10</td><td>100U/35V 105℃RUB YXF</td><td>78.6℃</td><td>92.3℃</td></tr>
<tr><td>7</td><td>D1</td><td>HER302 3A/200V REC</td><td>94.6℃</td><td>108.3℃</td></tr>
<tr><td>8</td><td>T1 COIL</td><td>TF-1037 LS</td><td>93.2℃</td><td>105.3℃</td></tr>
<tr><td>9</td><td>T1 CORE</td><td>TF-1037 LS</td><td>87.0℃</td><td>98.9℃</td></tr>
<tr><td>10</td><td>D55</td><td>MBR1545CT 15A/45V ON</td><td>99.1℃</td><td>112.6℃</td></tr>
<tr><td>11</td><td>D50</td><td>BYQ28X-200 10A/200V PH</td><td>98.6℃</td><td>112.2℃</td></tr>
<tr><td>12</td><td>D58</td><td>HER302 3A/100V REC</td><td>98.9℃</td><td>112.5℃</td></tr>
<tr><td>13</td><td>D56</td><td>HER302 3A/100V REC</td><td>95.7℃</td><td>109.7℃</td></tr>
<tr><td>14</td><td>C56</td><td>2200U/16V 105℃NCC KY</td><td>79.3℃</td><td>93.2℃</td></tr>
<tr><td>15</td><td>C53</td><td>560U/35V 105℃NCC KY</td><td>77.2℃</td><td>91.0℃</td></tr>
</table>
</td><td>P</td></tr>
<tr><td>2</td><td>OVER LOAD BURN-IN TEST</td><td>NO DAMAGE
1 HOUR (MIN)</td><td>I/P: 230 VAC
O/P: 130% LOAD
Ta:25℃</td><td>TEST：OK</td><td>P</td></tr>
<tr><td>3</td><td>LOW TEMPERATURE
TURN ON TEST</td><td>TURN ON AFTER 2 HOUR</td><td>I/P: 230VAC
O/P: 100% LOAD
Ta= -20℃</td><td>TEST：OK</td><td>P</td></tr>
<tr><td>4</td><td>HIGH HUMIDITY
HIGH TEMPERATURE
HIGH VOLTAGE
TURN ON TEST</td><td>AFTER 12 HOURS
IN CHAMBER ON
CONTROL 40 ℃
NO DAMAGE</td><td>I/P: 272VAC
O/P:FULL LOAD
Ta= 40℃
HUMIDITY= 95 %R.H</td><td>TEST：OK</td><td>P</td></tr>
<tr><td>5</td><td>TEMPERATURE
COEFFICIENT</td><td>± 0.03%(0~50℃)</td><td>I/P: 230 VAC
O/P:FULL LOAD</td><td>± 0.01 %(0~50℃)</td><td>P</td></tr>
<tr><td>6</td><td>VIBRATION TEST</td><td colspan="2">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:5G
(5) Test Time:1 hour in each axis (X.Y.Z)
(6) Ta:25℃</td><td>TEST： OK</td><td>P</td></tr>
</table>

SAFETY TEST

NO	TEST ITEM	SPECICATION	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℃	I/P-O/P: 3.65 mA I/P-FG: 3.44 mA O/P-FG: 2.05 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℃	I/P-O/P: 1.2G Ω I/P-FG: 1.7G Ω O/P-FG: 1.5 G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25℃	15 mΩ	P
4	APPROVAL	TUV: Certificate NO ：R50045775 UL: File NO ：E183223			P

E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25℃	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25℃	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℃	CRITERIA A	P
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	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℃	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 C56 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 ℃ LIFE TIME=82486 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 40 ℃ LIFE TIME=41839 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 245.5K 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 1 Rated 2SK2545: 600 V 6 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 474 V (2) 578 V (3) 586 V	P
2	Diode Peak **Voltage**	D 55 Rated MBR1545 : 45 V 15 A D 50 Rated BYQ28X-200 : 200 V 10 A D 58 Rated HER303 : 200 V 3 A D 56 Rated HER303 : 200 V 3 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 (1)Full Load Turn on (2) Full Load (3)Output Short (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	 (1) 32.2 V (2) 37.4 V (3) 32.2 V (1) 67.6 V (2) 77.2 V (3) 72.0 V (1) 104 V (2) 120 V (3) 104 V (1) 72.8 V (2) 48.4 V (3) 47.6 V	P
3	Clamp Diode Peak **Voltage**	D 1 Rated HER306 : 600 V 3 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25℃	(1) 568 V (2) 568 V	P
4	**Input Capacitor Voltage**	C 5 Rated HSTACH : 150 u / 400 V	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Min load (3)Full Load /Min load Change Ta:25℃	(1) 388 V (2) 370 V (3) 370 V	P
5	**Control IC Voltage Test**	U 1 Rated 1203 : 16 V	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Min load (3)Full Load /Min load Change Ta:25℃	(1) 12.8 V (2) 12.8 V (3) 10.5 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2003/10/7	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/6/17	PRODUCT SAMPLE A403C25	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023