

MODEL : DR-60-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 12 mVp-p (Max)
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 11.1V~ 13.2V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	10.94 V~ 13.49 V/ 230 VAC 10.94 V~ 13.49 V/ 115 VAC
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %~ -1 % (Max)	I/P: 85 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.4 %~ -0.4 %
4	LINE REGULATION	V1: 1 %~ -1 % (Max)	I/P: 85VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~ 0 %
5	LOAD REGULATION	V1: 1 %~ -1 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.4 %~ -0.4 %
6	SET UP TIME	230VAC: 100 ms (Max) 115 VAC: 200 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 85 ms 115VAC/ 137 ms
7	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/ 22 ms 115VAC/ 22 ms
8	HOLD UP TIME	230VAC: 50 ms (TYP) 115VAC: 18 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 127 ms 115VAC/ 28 ms
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: <5 %
10	DYNAMIC LOAD	V1: 1200 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	219 mVp-p

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	88VAC~264 VAC)	I/P:TESTING O/P:FULL LOAD Ta:25°C	59 V~264V
			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	I/P: 85 VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	EFFICIENCY	82 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	82.5 %
4	INPUT CURRENT	230V/ 0.8 A (TYP) 115V/ 1.2 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.57 A/ 230 VAC I = 0.89 A/ 115 VAC
5	INRUSH CURRENT	230V/ 36 A (TYP) 115V/ 18 A (TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 35 A/ 230 VAC I = 17 A/ 115 VAC

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105 %~ 160 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	133 %/ 230 VAC 137 %/ 115 VAC Constant current limiting, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	CH1: 13.8 V~ 16.2 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	15.1 V/ 230 VAC 15.1 V/ 115 VAC Shunt down Re- power ON
3	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, recovers automatically after fault condition is removed

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab
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
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
6	SURGE	IEC61000-4-5 INDUSTRY L-N :2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	CAPACITOR LIFE CYCLE	SUPPOSE C 107 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 84146 HRS I/P: 230VAC O/P:FULL LOAD Ta= 45 °C LIFE TIME= 23333 HRS I/P: 230VAC O/P:75% LOAD Ta= 45 °C LIFE TIME= 38446 HRS I/P: 230VAC O/P:50% LOAD Ta= 45 °C LIFE TIME= 75925 HRS		
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 216.2K HRS		

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q 1 Rated : 700 V 10A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 680 V (2) 670 V (3) 608 V
2	Diode Peak Voltage	D100 Rated : 100 V 10 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) 60 V (2) 66 V (3) 52 V
3	Clamp Diode Peak Voltage	D1 Rated: 600V 2A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 382 V (2) 386 V
4	Input Capacitor Voltage	C 5 Rated : 180u / 400 V/ 105°C	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off	(1) 384 V (2) 384 V



			(2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(3) 384 V
5	Control IC Voltage Test	U1 Rated : 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 Ta:25°C	(1) 16 V (2) 17 V (30) 16 V

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2005/1/7	RD SAMPLE	PASS	VINCENT TSENG	MAX
2005/4/25	PRODUCT SAMPLE W0503C02	PASS	VINCENT TSENG	MAX

2003/12/12 A50-F023