

Quality Engineering Test Report

SERIES: TP-150 100W AC-DC TRIPLE OUTPUT SWITCHING POWER SUPPLY
SAMPLE: A.TP-150A V1 : 5V / 15A B.TP-150B V1 : 5V / 15A C.TP-150C V1 : 5V / 15A
 V2 : 12V / 6A V2 : 12V / 5.5A V2 : 15V / 4.5A
 V3 : -5V / 0.6A V3 : -12V / 0.6A V3 : -15V / 0.6A
D.TP-150D V1 : 5V / 15A
 V2 : 24V / 3A
 V3 : 12V / 0.6A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:90~264VAC O/P:FULL LOAD	A:72.7VAC~267VAC	P
2	LINE REGULATION	I/P:100~264VAC SPEC: O/P:FULL LOAD A: V1 :±1% V2 :±1% V3 :±1% B: V1 :±1% V2 :±1% V3 :±1% C: V1 :±1% V2 :±1% V3 :±1% D: V1 :±1% V2 :±1% V3 :±1%	A:V1: 0%~0% V2: -0.1%~-0.1% V3: 0%~0.12% B:V1: 0%~+0.22% V2: -0.15%~-0.09% V3: 0%~+0.05% C:V1: 0%~0% V2: -0.2%~0% V3: 0.1%~0% D:V1: 0%~0% V2: -0.05%~+0.5% V3: -0.25%~+0.47%	P
3	LOAD REGULATION	I/P : 230VAC SPEC : O/P : MIN. TO FULL LOAD A: V1 :±3% V2 :±6% V3 :±4% B: V1 :±3% V2 :±6% V3 :±4% C: V1 :±3% V2 :±6% V3 :±4% D: V1 :±3% V2 :±6% V3 :±4%	A: V1: -0.24% ~ +0.35% V2: +0.5% ~ +0.82% V3: -0.12% ~ +0% B: V1: -0.2% ~ +0.2% V2: -0.35% ~ +0.5% V3: 0% ~ +0.05% C: V1: -0.12% ~ 0% V2: -0.1% ~ +0.08% V3: 0% ~ +0.1% D: V1: 0% ~ 0% V2: -0.46% ~ +0.92% V3: -1% ~ -1.9%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: O/P:20% TO FULL LOAD A: V1 :±3% V2 :±8% V3 :±6% B: V1 :±3% V2 :±8% V3 :±6% C: V1 :±3% V2 :+10 ~ -6% V3 :±6% D: V1 :±3% V2 :±8% V3 :±6%	A:V1: +0%~+0.60% V2: -2.5%~+4.0% V3: -0.5%~+0.12% B:V1: 0%~+0.26% V2: -0.25%~-1.8% V3: -0.1%~+0.06% C:V1: -0.12%~+0.8% V2: -0.91%~+0.12% V3: -0.16%~%+0.2 D:V1: 0%~+0.26% V2: -1.25%~+4% V3: +0.9%~+4.5%	P
5	RIPPLE & NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A: V1 :100mV V2 :120mV V3 :100mV B: V1 :100mV V2 :120mV V3 :100mV C: V1 :100mV V2 :150mV V3 :100mV D: V1 :100mV V2 :150mV V3 :100mV	A: V1:39mV V2:68mV V3:20mV B: V1:42mV V2:61mV V3:23mV C: V1:61mV V2:42mV V3:24mV D: V1:54mV V2:23mV V3:21mV	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
6	AC INPUT CURRENT	I/P:230VAC SPEC:1.2A O/P:FULL LOAD	A:0.88A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:45A O/P: FULL LOAD	A:29A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC : V1: -5%~+10% O/P:MIN. LOAD	A: 4.397V~5.637V B: 4.47V~5.80V C: 4.53V~5.83V D: 4.47V~5.83V	P
9	SET UP TIME	I/P:230VAC SPEC:800mS O/P:FULL LOAD	A: 381mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	A: 28.1mS	P
11	EFFICIENCY	I/P:230VAC SPEC: O/P:FULL LOAD A:75% B:77% C:77% D:78%	A:76.3% B:78.3% C:78.25% D:78.5%	P
12	OVER LOAD PROTECTION	I/P:230VAC SPEC:105%~150% O/P:TESTING	A:135% B:138% C:132% D:135%	P
13	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<3.5mA N-FG--<3.5mA	A: L-FG:1.2mA N-FG:1.2mA	P
14	INSULATION RESISTANCE	SPEC : O/P-FG 500VDC/100MΩ MIN. I/P-O/P 500VDC/100MΩ MIN. I/P-FG 500VDC/100MΩ MIN.	A: O/P-FG >100MΩ I/P-O/P >100MΩ I/P-FG >100MΩ	P
15	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3KVAC/ 1 min. (10mA CUT-OFF) I/P - FG: 1.5KVAC/ 1 min. (10mA CUT-OFF) O/P - FG: 0.5KVAC/ 1 min. (10mA CUT-OFF)	A: I/P-O/P :6.81mA I/P-FG :7.5mA O/P-FG :8.45mA	P
16	BURN-IN TEST	I/P: 230VAC O/P: 100% LOAD TA25°C BURN-IN DURATION : 2 hrs	B:NON BREAK	P
17	ENVIRONMENT TEST	HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:100% LOAD AMBIENT TEMPERATURE:48.2°C	B:AFTER 4 hrs NON BREAK	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT																																				
18	TEMPERATURE RISE TEST ΔT OF PARTS	A: I/P :230VAC O/P : 100% LOAD AFTER 4 hr BURN-IN TA:48°C	<table border="1"> <thead> <tr> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>ΔT</th> </tr> </thead> <tbody> <tr> <td>BD1</td> <td>BRIDGE DIODE</td> <td>78°C</td> <td>30.0°C</td> </tr> <tr> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>97°C</td> <td>49°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER WIRE</td> <td>86°C</td> <td>38°C</td> </tr> <tr> <td>D55</td> <td>O/P DIODE</td> <td>95°C</td> <td>47°C</td> </tr> <tr> <td>C57</td> <td>O/P FILTER CAPACITOR</td> <td>82°C</td> <td>48°C</td> </tr> <tr> <td>LF1</td> <td>LINE FILTER TRANSFORMER</td> <td>81.2°C</td> <td>33.2°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>68.5°C</td> <td>20.5°C</td> </tr> <tr> <td>D2</td> <td>FLY DIODE</td> <td>84.4°C</td> <td>36.4°C</td> </tr> </tbody> </table>	POSITION	P/N	TEMP	ΔT	BD1	BRIDGE DIODE	78°C	30.0°C	Q1	MAIN TRANSISTOR	97°C	49°C	T1	MAIN TRANSFORMER WIRE	86°C	38°C	D55	O/P DIODE	95°C	47°C	C57	O/P FILTER CAPACITOR	82°C	48°C	LF1	LINE FILTER TRANSFORMER	81.2°C	33.2°C	C5	I/P FILTER CAPACITOR	68.5°C	20.5°C	D2	FLY DIODE	84.4°C	36.4°C	P
POSITION	P/N	TEMP	ΔT																																					
BD1	BRIDGE DIODE	78°C	30.0°C																																					
Q1	MAIN TRANSISTOR	97°C	49°C																																					
T1	MAIN TRANSFORMER WIRE	86°C	38°C																																					
D55	O/P DIODE	95°C	47°C																																					
C57	O/P FILTER CAPACITOR	82°C	48°C																																					
LF1	LINE FILTER TRANSFORMER	81.2°C	33.2°C																																					
C5	I/P FILTER CAPACITOR	68.5°C	20.5°C																																					
D2	FLY DIODE	84.4°C	36.4°C																																					
19	LIFE CYCLE	A: SUPPOSE C16 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P : 100% LOAD Ta:25°C Tc57:60°C Life: 32052 hrs I/P:230VAC O/P : 100% LOAD Ta:50°C Tc57:82°C Life: 19880 hrs		P																																				
20	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	A: FUSE :5A/250V BRIDGE DIODE :D3SB60 LINE FILTER :LINE FILTER TF-096 TRANSFORMER :TF471 POWER SWITCHER :2SK2652 OUTPUT DIODE :SBL3040PT OUTPUT CAPACITOR : 2200uF/10V 105°C INPUT CAPACITOR :RUBYCON 100uF/400V 85°C USP																																						

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
2002/04/22	PRODUCT SAMPLE A203A32E TP-150 A TP-150 B TP-150 C TP-150 D	PASS	VINCENT	Max Lin
2002/10/21	PRODUCT SAMPLE A210B27A TP-150 C	PASS	VINCENT	Max Lin
2002/12/05	PRODUCT SAMPLE A211C35G TP-150 A TP-150 D TP-150 B	PASS	VINCENT	Max Lin