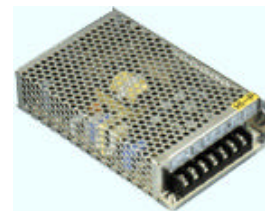




- .LOW COST, HIGH RELIABILITY
- .105°C OUTPUT CAPACITOR
- .INTERNATIONAL AC INPUT RANGE
- .HIGH EFFICIENCY, LOW WORKING TEMPERATURE
- .SOFT-START CIRCUIT, LIMITING AC SURGE CURRENT
- .SHORT CIRCUIT, OVERLOAD, OVER VOLTAGE PROTECTED
- .COMPACT SIZE, LIGHT WEIGHT
- .100% FULL LOAD BURN-IN TEST



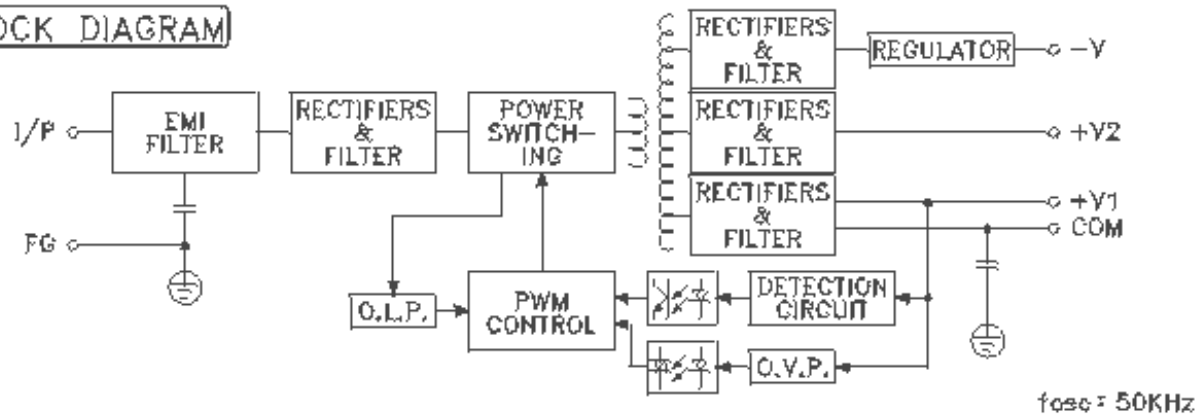
MODEL	VT-60A			VT-60B			VT-60C		
	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
SPECIFICATION									
DC OUTPUT VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V
OUTPUT V. TOLERANCE	±2%	±6%	±6%	±2%	±6%	±6%	±2%	±6%	±6%
OUTPUT RATED CURRENT	5A	2.5A	0.5A	5A	2.5A	0.5A	5A	2A	0.5A
OUTPUT CURRENT RANGE	0.5-7A	0.2-3.5A	0-1A	0.5-7A	0.2-3.5A	0-1A	0.5-7A	0.2-3A	0-1A
RIPPLE & NOISE(Vp-p)	100m	100m	100m	100m	100m	100m	100m	100m	100m
LINE REGULATION	±0.5%	±1%	±0.5%	±0.5%	±1%	±0.5%	±0.5%	±1%	±0.5%
LOAD REGULATION	±1%	±4%	±1%	±1%	±4%	±1%	±1%	±4%	±1%
RATED OUTPUT POWER	57.5W			61W			62.5W		
EFFICIENCY	72%			72%			72%		
DC VOLTAGE ADJ.	CH1:±10,-5%			CH1:±10,-5%			CH1:±10,-5%		
INPUT VOLTAGE RANGE	85~264VAC 47~63Hz ; 120~370VDC								
AC CURRENT	2A/115V 1A/230V								
INRUSH CURRENT	COLD START 30A/115V 60A/230V								
LEAKAGE CURRENT	<1mA/240VAC								
OVERLOAD PROTECTION	105%~150%/115VAC TYPE:PULSING HICCUP SHUTDOWN RESET:AUTO RECOVERY								
OVER VOLTAGE PROTECTION	CH1:5.75~6.75V								
TEMP. COEFFICIENT	±0.03% / °C (0~50°C) ON +5V OUTPUT								
SETUP,RISE,HOLD UP TIME	800ms, 50ms, 10ms / 115VAC 300ms, 50ms, 80ms / 230VAC								
VIBRATION	10~500Hz, 2G 3AXES 10min. / 1cycle (1 HOUR / EACH AXES)								
WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC 1min.								
ISOLATION RESISTANCE	I/P-O/P,I/P-FG,O/P-FG:500VDC / 100M Ohms								
WORKING TEMP., HUMIDITY	-10°C~+60°C(REFER TO OUTPUT DERATING CURVE), 20%-90% RH								
STORAGE TEMP., HUMIDITY	-20°C~+85°C, 10%~95% RH								
DIMENSION	159*97*38mm CASE:901								
WEIGHT	0.56Kgs								
SAFETY STANDARDS	UL1012, TUV EN60950, IEC950, UL1950 APPROVED								
EMC STANDARDS	CISPR22(EN55022) CLASS B, IEC801-2,3,4, IEC555-2 VERIFICATION								

NOTE : 1.ALL PARAMETERS ARE SPECIFIED AT 230VAC INPUT, RATED LOAD, 25°C 70% RH. AMBIENT.
2.TOLERANCE: INCLUDE SET UP TOLERANCE, LINE REGULATION, LOAD REGULATION.
3.RIPPLE & NOISE ARE MEASURED AT 20MHZ BY USING A 12" TWISTED PAIR TERMINATED WITH A 0.1uF & 47uF CAPACITOR.
4.LINE REGULATION IS MEASURED FROM LOW LINE TO HIGH LINE AT RATED LOAD.
5.LOAD REGULATION IS MEASURED FROM 20% TO 100% RATED LOAD, AND OTHER OUTPUT AT 60% RATED LOAD
6.EACH OUTPUT PROVIDE UP TO MAXIMUM CURRENT, BUT TOTAL LOAD CAN NOT EXCEED MAX. OUTPUT POWER.
7.C23,6 MUST BE REMOVED.

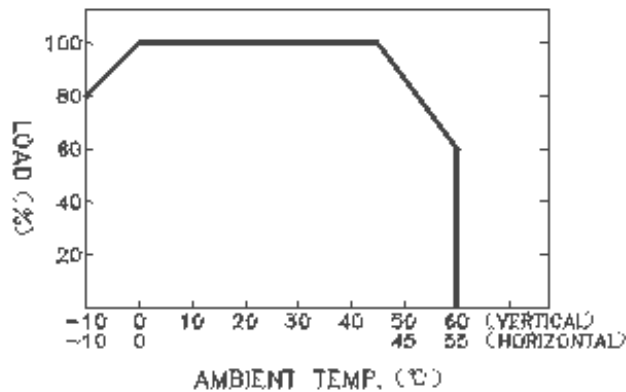
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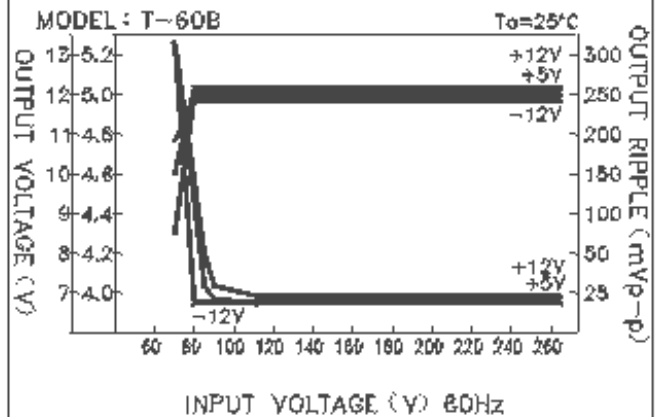
BLOCK DIAGRAM



OUTPUT DERATING

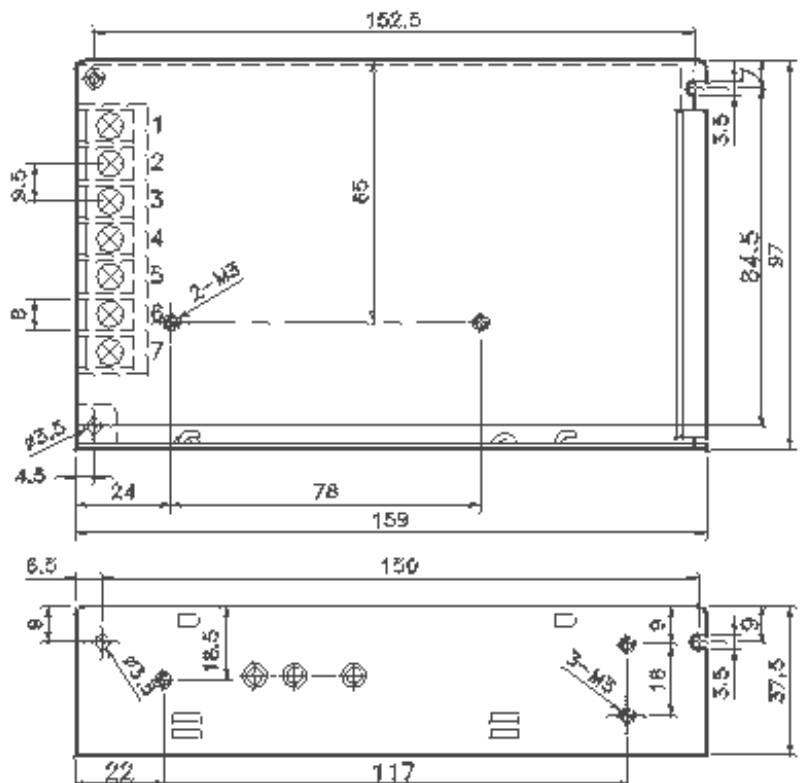


STATIC CHARACTERISTICS



DIMENSION (mm)

- ☒ CASE : 901
- ☒ TERMINAL PIN NO. ASSIGNMENT
 - ☒ PIN 1,2 : AC INPUT
 - ☒ PIN 3 : FG $\oplus$
 - ☒ PIN 4 : DC OUTPUT -V
 - ☒ PIN 5 : DC OUTPUT +V2
 - ☒ PIN 6 : DC OUTPUT COM
 - ☒ PIN 7 : DC OUTPUT +V1





Quality Engineering Test Report

SERIES: VT-60 60W AC-DC TRIPLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.VT-60A V1: 5V / 5A V2: 12V / 2.5A V3: -5V / 0.5A
B.VT-60B V1: 5V / 5A V2: 12V / 2.5A V3: -12V / 0.5A
C.VT-60C V1: 5V / 5A V2: 15V / 2A V3: -15V / 0.5A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:85~264VAC O/P:FULL LOAD	C:61.68VAC~267VAC	P
2	LINE REGULATION	I/P:85~264VAC SPEC: O/P:FULL LOAD A: V1: ±0.5% V2: ±1% V3: ±0.5% B: V1: ±0.5% V2: ±1% V3: ±0.5% C: V1: ±0.5% V2: ±1% V3: ±0.5%	A: V1: +0.12% ~ +0.12% V2: -0.05% ~ +0.41% V3: -0% ~ +0.12% B: V1: -0% ~ +0% V2: -0.05% ~ +0.20% V3: -0% ~ +0% C: V1: -0% ~ +0% V2: -0.04% ~ +0.04% V3: -0% ~ +0%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A: V1: ±0.5% V2: ±4% V3: ±1% B: V1: ±0.5% V2: ±4% V3: ±1% C: V1: ±0.5% V2: ±4% V3: ±1%	A: V1: -0.12% ~ +0% V2: -0.26% ~ +0.77% V3: -0.12% ~ +0.12% B: V1: -0.12% ~ +0% V2: +0.26% ~ +1.42% V3: -0% ~ +0% C: V1: -0.12% ~ +0% V2: -0.65% ~ +1.09% V3: -0% ~ +0%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: O/P:20% TO FULL LOAD A: V1: ±2% V2: ±6% V3: ±6% B: V1: ±2% V2: ±6% V3: ±6% C: V1: ±2% V2: ±6% V3: ±6%	A: V1: -0.06% ~ +0.2% V2: -1.2% ~ +4.16% V3: -0.14% ~ +0.24% B: V1: -0.06% ~ +0.3% V2: -1.25% ~ +4.06% V3: +0.725% ~ +0.93% C: V1: -0.12% ~ +0.12% V2: -0.09% ~ +5.50% V3: +0.79% ~ +0.91%	P
5	RIPPLE&NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A: V1: 100mV V2: 100mV V3: 100mV B: V1: 100mV V2: 100mV V3: 100mV C: V1: 100mV V2: 100mV V3: 100mV	A: V1: 29mV V2: 13mV V3: 13mV B: V1: 12mV V2: 14mV V3: 9mV C: V1: 11mV V2: 12mV V3: 13mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:1A O/P:FULL LOAD	C:0.79A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:50A O/P: FULL LOAD	C:37.7A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: O/P:MIN. LOAD A:V1 -5%~+10% B:V1 -5%~+10% C:V1 -5%~+10%	A: 4.47V~5.78V B: 4.50V~5.78V C: 4.41V~5.82V	P
9	SET UP TIME	I/P:230VAC SPEC:300mS O/P:FULL LOAD	C: 244.92mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:80mS O/P:FULL LOAD	C: 93mS	P
11	EFFICIENCY	I/P:230VAC SPEC: O/P:FULL LOAD A:72% B:72% C:72%	A:72.87% B:72.02% C:73.97%	P



NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT																																													
12	OVER LOAD PROTECTION	I/P:115VAC SPEC:105%~150% O/P:TESTING	A:143% B:137.7% C:128%	P																																													
13	OVER VOLTAGE PROTECTION	I/P:230VAC SPEC:V1:5.75~6.75V O/P:FULL LOAD	A : 6.12V B : 6.27V C : 6.13V	P																																													
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<3.5mA N-FG--<3.5mA	C: L-FG:1.95mA N-FG:1.96mA	P																																													
15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC/100M Ohms MIN. I/P-O/P 500VDC/100M Ohms MIN. I/P-FG 500VDC/100M Ohms MIN.	C: O/P-FG >100M Ohms I/P-O/P >100M Ohms I/P-FG >100M Ohms	P																																													
16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3000VAC/ 1 min. (10mA CUT-OFF) I/P - FG: 1500VAC/ 1 min. (10mA CUT-OFF) O/P - FG: 500VAC/ 1 min. (10mA CUT-OFF)	C: I/P-O/P :4.31mA I/P-FG :6.61mA O/P-FG :2.61mA	P																																													
17	EMS TEST	EFT TEST: EN50082-1 IEC1000-4-4	C: CRITERIA A OK	P																																													
		SURGE TEST: EN50082-1 IEC1000-4-5	C: CRITERIA A OK	P																																													
18	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:25.4°C BURN-IN DURATION : 2 hrs	NON BREAK	P																																													
19	ENVIRONMENT TEST (SAMPLE C:)	1.LOW TEMPERATURE TEST I/P:80 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-10°C	AFTER 1.5 hrs POWER ON OK	P																																													
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:43°C	AFTER 44.25 hrs NON BREAK																																														
		3.ACCELERATED LIFE TEST I/P:267VAC O/P:FULL LOAD POWER ON :3 min POWER OFF :5 sec AMBIENT TEMPERATURE:86.7°C AMBIENT HUMIDITY:95%	AFTER 4.25 hrs NON BREAK																																														
20	TEMPERATURE RISE TEST T rise OF PARTS	C: I/P :230VAC AFTER 2 hr BURN-IN O/P :FULL LOAD TA:25.4°C <table><tr><td></td><td>POSITION</td><td>P/N</td><td>TEMP</td><td>T rise</td></tr><tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>77.6°C</td><td>52.2°C</td></tr><tr><td></td><td>Q1</td><td>MAIN TRANSISTOR</td><td>81.9°C</td><td>56.5°C</td></tr><tr><td></td><td>T1</td><td>MAIN TRANSFORMER</td><td>87°C</td><td>61.6°C</td></tr><tr><td></td><td>D4</td><td>O/P DIODE</td><td>76.1°C</td><td>50.7°C</td></tr><tr><td></td><td>C21</td><td>O/P FILTER CAPACITOR</td><td>80°C</td><td>54.6°C</td></tr><tr><td></td><td>L2</td><td>O/P CHOCK</td><td>76°C</td><td>50.6°C</td></tr><tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>67.1°C</td><td>41.7°C</td></tr><tr><td>*</td><td>D1</td><td>FLY DIODE</td><td>92.7°C</td><td>67.3°C</td></tr></table>			POSITION	P/N	TEMP	T rise		BD1	BRIDGE DIODE	77.6°C	52.2°C		Q1	MAIN TRANSISTOR	81.9°C	56.5°C		T1	MAIN TRANSFORMER	87°C	61.6°C		D4	O/P DIODE	76.1°C	50.7°C		C21	O/P FILTER CAPACITOR	80°C	54.6°C		L2	O/P CHOCK	76°C	50.6°C		C5	I/P FILTER CAPACITOR	67.1°C	41.7°C	*	D1	FLY DIODE	92.7°C	67.3°C	* NOTE1
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*	D1	FLY DIODE	92.7°C	67.3°C																																													
21	LIFE CYCLE	C: SUPPOSE C21 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc21:79.6°C Life: 28659hrs I/P:230VAC O/P:FULL LOAD Ta:45°C Tc21:88.6°C Life: 15358hrs		P																																													
22	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	C: FUSE :3A/250V BRIDGE DIODE :D3SB60 LINE FILTER :EE-25 TF096C1 TRANSFOMER :EER-35 TF155-1-R1 POWER SWITCHER :2SK727 TO-3P OUTPUT DIODE :SF10SC4 OUTPUT CAPACITOR :ELNA 2200uF/10V RJH 105°C INPUT CAPACITOR :JAMICON 150uF/400V 85°C P.C.B :T-60N-R3 CEM-1 2 OZ SS																																															