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	REV	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE	01/10/01	PM
	B	REVISE FORMAT, RFS. 14569, BS	09/24/08	HM
	C	ADD MIN. LOAD REQUIREMENT, RFS. 19630, BS	09/23/10	HM
	D	REMOVE 'TUV', UPDATE LABEL, RFS. 21154, BS	06/27/11	HM



**USE TOSHIBA P/N: TK20A60V MOSFET FOR BOARD LOCATION Q1**



**1. NOTES:**

DIMENSIONS ARE IN MM UNLESS SPECIFIED OTHERWISE.

**2. ELECTRICAL SPECIFICATIONS:**

**INPUT VOLTAGE:** 90 VAC TO 264 VAC  
**INPUT CURRENT:** < 1.3 A RMS AT 90 VAC INPUT  
**INPUT FREQUENCY:** 47 HZ - 63 HZ  
  
**OUTPUT VOLTAGE / CURRENT:** + 5 VDC @ 0 - 5.0 A; +12 VDC @ 0-1.5A; -12VDC @ 0-0.5A  
**OUTPUT CURRENT :** MIN. LOAD REQUIRED AT LEAST 20% OF TYPICAL MAIN  
 OUTPUT CURRENT IS REQUIRED TO MAINTAIN STATED REGULATION  
**OUTPUT POWER (RATED):** 50 WATTS MAX  
**OUTPUT RIPPLE (PEAK TO PEAK):** ≤ 1% OR 100mV MAX, WHICHEVER IS SMALLER, FOR ALL OUTPUT  
**OUTPUT REGULATION (LINE/LOAD):** ± 5 % FOR MAIN OUTPUT, ±10% FOR SECOND AND  
 ± 1.5% FOR THIRD OUTPUT  
**TURN ON/ TURN OFF OVERTHOOT:** 4% MAX 500 uS MAX RECOVERY TIME FOR 25% STEP LOAD  
**TURN-ON DELAY:** 1 SEC MAX  
**HOLD-UP TIME:** 16 mSEC MIN AT NOMINAL INPUT AND FULL LOAD  
**INRUSH CURRENT:** 20 A MAX AT COLD START FOR N.A. (40A FOR EURO)  
**EFFICIENCY:** 75 % TYPICAL  
**SWITCHING FREQUENCY:** 44 KHZ TYPICAL  
**ADJUSTABILITY:** FACTORY SET  
**OVER-VOLTAGE PROTECTION:** VOLTAGE LIMITED LESS 130% OF NOMINAL VOLTAGE FOR MAIN  
 OUTPUT  
**OVER-CURRENT / SHORT CIRCUIT:** 1.1 - 1.3 I<sub>o</sub> HICCUP WITH AUTO RECOVERY  
**OTHER PROTECTION:** INPUT FUSING  
**SAFETY APPROVALS :** UL 60950 / 1950, CULTO 22.2 # 234, 950, CE CLASS I  
**DIELECTRIC WITHSTAND VOLTAGE:** 1500VAC PRIMARY-SECONDARY;1500 VAC PRIMARY- GROUND  
**LEAKAGE CURRENT:** 3.5 mA MAX  
**EMI:** COMPLIES WITH EN55022, CLASS B AND  
 FCC PART 15 CLASS B WHEN TESTED WITH A RESISTIVE  
 LOAD, BOTH CONDUCTED AND RADIATED  
**CE MARK :** TESTED TO COMPLY WITH EN61000-3-2, EN61000-3-3 AND EN50082-1  
 INCLUDING EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5,  
 EN61000-4-6, EN61000-4-11, UNIT IS ELIGIBLE FOR CE MARK.  
**MTBF:** 200,000 HOURS AT 25°C AMBIENT TEMPERATURE  
**OPERATING TEMPERATURE:** 0°C TO 40° C  
**STORAGE TEMPERATURE:** -20°C TO 85° C  
**HUMIDITY:** 0% TO 90% RELATIVE HUMIDITY  
**WEIGHT:** 531 g  
**ROHS:** COMPLIES WITH EU 2002/95/EC AND CHINA SJ/T 11363-2006

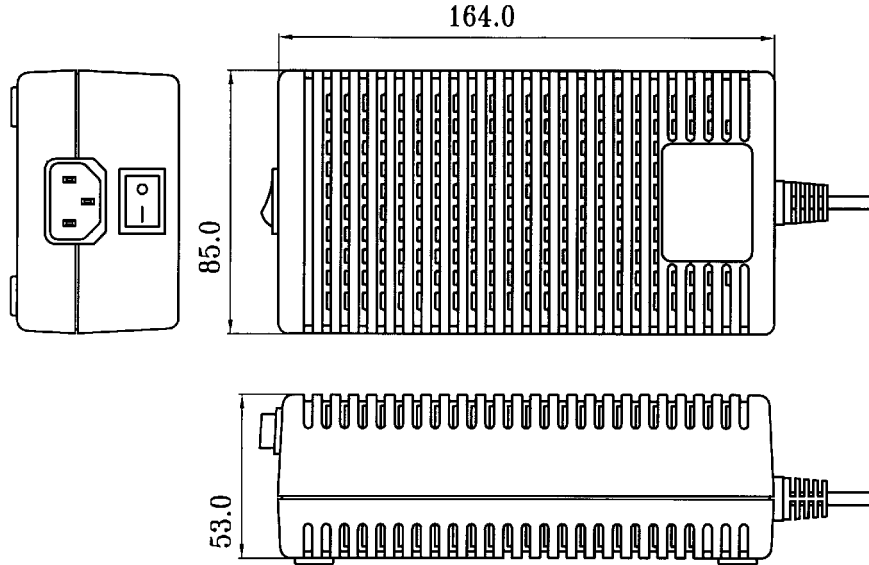
Foot Note: Globtek Inc. will not be liable for the safety and performance of these power supplies if unauthorized access and repair occurs. End user should consult applicable UL, CSA or EN standards for proper installation instructions	DASH NO.	PART NO	REV.	DESCRIPTION	NOTES	
	<b>TABULATION BLOCK</b>					
			<b>TOLERANCES:</b> DECIMALS ANGULAR .xx +/- 0.1 +/- 1° .xxx +/- .005		<b>186 Veterans Dr. Northvale, NJ 07647</b> <b>Tel. 201-784-1000 Fax 201.784.0111</b> <b>www.globtek.com</b>	
			<b>MILLIMETERS ANGULAR</b> .xx +/- 0.3 +/- 1° .xxx +/- .013			
Limitation of Use: Globtek product are not authorized for use as mission critical components in life support, hazardous environment, nuclear or aircraft applications without prior written approval from the CEO of Globtek Inc.	INIT.BY: BS	DATE: 09/24/08	FSCN No.: G, N	SIZE A	DWG TITLE: TRIPLE OUTPUT SWITCHING POWER SUPPLY 50 WATTS 5V@5A, +12V@1.5A, -12V@0.5A, DESKTOP, UNIVERSAL INPUT MODEL NO: HES61-30 REV. D	
Contents of this document are subject to change without prior notice	APRVD : HM	DATE: 09/24/08	SCALE: NONE	PART NO: TR9CV5000N05-R(R)	SHEET 1 OF 3	

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**3. ENCLOSURE**

UPPER HOUSING: HIGH IMPACT PLASTIC, 94V0 POLYCARBONATE, COLOR BLACK  
LOWER HOUSING: HIGH IMPACT PLASTIC 94V0 POLYCARBONATE, COLOR BLACK  
SIZE: 164 x 85 x 55 ± 1 mm



**4. INPUT CONNECTOR:**

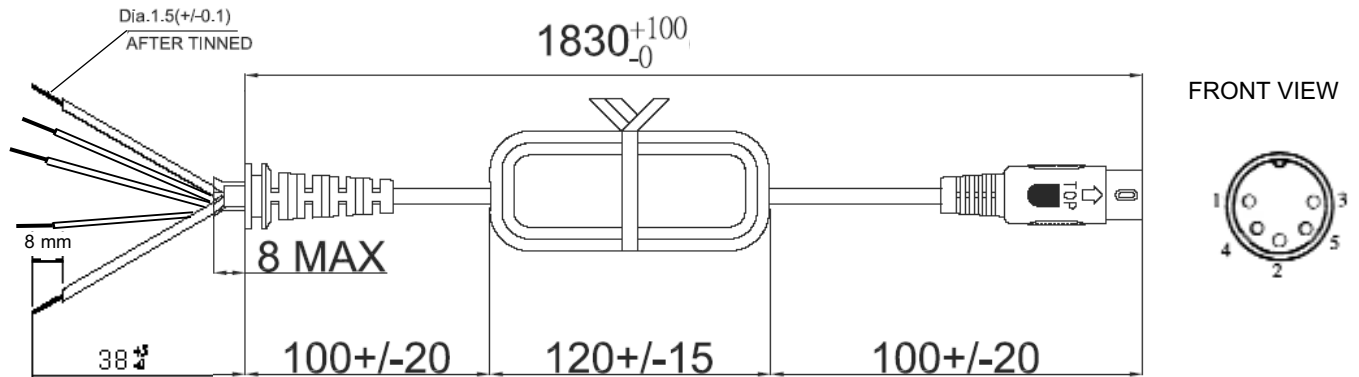
CONFIGURATION: CLASS 1 MODEL IEC320 / C14, AC POWER RECEPTACLE WITH 3 MALE PRONGS

**5. OUTPUT CORD:**


5 CONDUCTOR: 2 CONDUCTORS, 20 AWG STRANDED WIRE AND 3 CONDUCTORS, 18 STRANDED WIRE, ROUND UL 2464 CORD TYPE, COLOR BLACK , LENGTH OF CORD: 1830+100,-0 mm.  
CORD IS MEASURED FROM THE HOUSING TO THE END OF OVERMOLD OF THE CONNECTOR.  
CABLE IS TO BE MARKED WITH WIRE GAUGE, AND ALL APPLICABLE RATING AND SAFETY APPROVALS.

**6. OUTPUT CONNECTOR:**

5 PIN MALE DIN CONNECTOR WITH 180° PIN SPAN



PIN 1: COMMON  
PIN 2: GROUND  
PIN 3: +5 VDC  
PIN 4: -12 VDC  
PIN 5: +12 VDC  
SHELL: N/C

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	DWG TITLE: TRIPLE OUTPUT SWITCHING POWER SUPPLY 50 WATTS 5V@5A, +12V@1.5A, -12V@0.5A, DESKTOP, UNIVERSAL INPUT
MODEL NO: HES61-30	REV. D
PART NO: TR9CV5000N05-R(R)	SHEET 2 OF 3

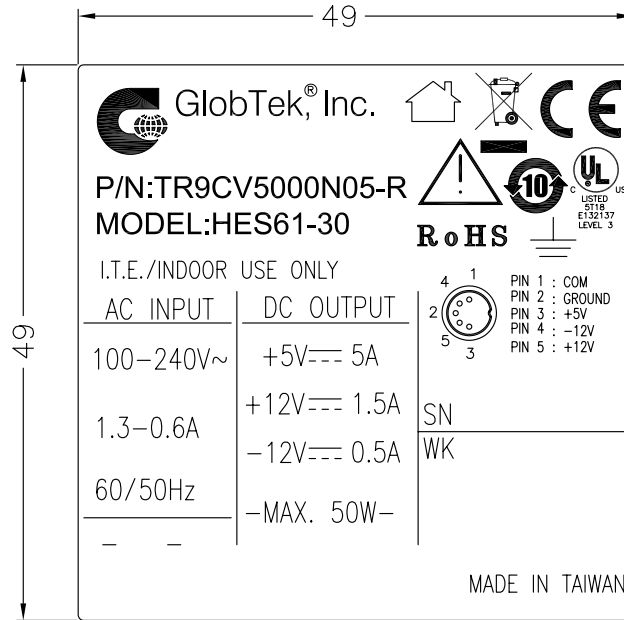
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**8. LABEL:**

MATERIAL: .007 (0.18) THICK FLAT THERMAL TRANSFER, IMPRINTABLE, WHITE OR GRAY POLYESTER SHEET WITH BLACK NOMENCLATURE.

MANUFACTURER: STEVEN LABEL, MATERIAL I.D. NO.3302-33, UL FILE NO. MH12821(N), UL MATERIAL DESIGNATION FILE NO. GHW332RL. OPTIONAL LABEL MATERIAL CAN BE SUBSTITUTED PROVIDING MATERIAL IS UL LISTED AND COMPLEIS WITH APPLICABLE SAFETY REQUIREMENTS.

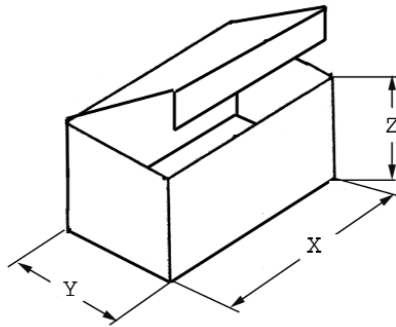


**ACTUAL POSITIONING OF SYMBOLS AND TEXT IS SUBJECT TO CHANGE AT TIME OF MANUFACTURE**


**9. INDIVIDUAL PACKING BOX:**

MATERIAL: CORRUGATED FIBERBOARD, F-FLUTE 0.8 (2.0) THICK, DOUBLE WALL CONSTRUCTION.

EXTERNAL FINISH: WHITE, COATED WITH GLOSS FINISH (AQUEOUS OR VARNISH) STYLE: TUCK SIDES WITH LOCKING TABS ON BOTH SIDES OF BOX. NO PRINTING ON THE OUTSIDE OF BOX.



X = 245 mm  
Y = 135 mm  
Z = 90 mm

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MODEL NO: HES61-30	REV. D
PART NO: TR9CV5000N05-R(R)	SHEET 3 OF 3