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Dual and Triple Output 35W Low Profile Power Supplies

Medical Industrial Test Broadcast

The triple output CUT35 power supplies have two independent, isolated, converters, one for the main 5V output, and one for the auxiliary outputs. This topology provides several benefits - no minimum loading, enhanced load & line regulation and the ability to connect the auxiliary outputs in series to generate either a 24V or 30V output. The series is certified to both the IEC60601-1 and IEC62368-1 safety standards. Several mechanical configurations are available - open frame, an attached baseplate or with a baseplate and cover enclosure.

Features	Benefits
• 2 x 4 Footprint With a Low 1.06" (27mm) Height	• Space Saving in End Equipment
• Output 1 Isolated From Outputs 2 & 3	• Flexible Utilization
• No Minimum Loading	• Reduced Load Regulation
• Open Frame, Baseplate or Enclosed Formats	• Versatile Mounting
• Three Year Warranty	• Low Cost of Ownership

Model Selector

Model		Voltage (V)	Adjustable Range (V)	Max Current (A)	Max Power (W)	Load Reg (mV)	Line Reg (mV) [1]	Ripple Noise (mV)[1]
CUT35-522	V1	5	5 - 5.25	3.0	15.0	100	50	120
	V2	+12	Fixed	1.2	20.4	600	240	150
	V3	-12	Fixed	0.9		600	240	150
CUT35-522	V1	5	5 - 5.25	3	15	100	50	120
	V2	24	Fixed	0.85	20.4	750	300	150
	(Leave common terminal unconnected)							
CUT35-5FF	V1	5	5 - 5.25	3	15	100	50	120
	V2	+15	Fixed	1	19.5	750	300	150
	V3	-15	Fixed	0.65		750	300	150
CUT35-5FF	V1	5	5 - 5.25	3	15	100	50	120
	V2	30	Fixed	0.65	19.5	750	300	150
	(Leave common terminal unconnected)							

CUT35-	522	/	A

Output voltage See model selector

blank	Open frame
/A	Cover and baseplate
/B	Baseplate with no cover

Specifications

Model		CUT35-522	CUT35-5FF
Input			
Input Voltage Range(1)	Vac / Vdc	85 - 265Vac or 88 - 370Vdc*	
Input Frequency	Hz	47 - 63	
Input Current(100/200Vac)	A	1 / 0.5	
Inrush Current at 230Vac (typ) (Cold Start)	A	32	
Leakage Current (265Vac 50Hz)	mA	less than 0.3	
Harmonic Compliance	-	Designed to meet IEC61000-3-2	
Hold Up Time (typ) at 110/220Vac Input	ms	20	
Efficiency (200Vac)	%	81	82
Conducted & Radiated EMI	-	EN55011/EN55032-B, FCC Class B	
Immunity	-	IEC61000-4-2, -3, -4, -5, -6, -8, -11	
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, IEC/EN/ES/CSA60601-1, CE Mark and UKCA Mark	

Immunity

Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	Air ±15kV and contact ±8kV	A	See IEC61000 immunity test report on website
Radiated Susceptibility	EN61000-4-3	80M -1GHz: 10V/m 1.4 - 2.0GHz: 3V/m 2.0 - 2.7GHz: 1V/m	A	
Electrical Fast Transient Burst	EN61000-4-4	±4kV	A	
Surge	EN61000-4-5	Normal ±2kV Common ±4kV	A	
Conducted Susceptibility	EN61000-4-6	10Vrms	A	
Magnetic Fields	EN61000-4-8	30A/m	A	
Voltage Dips	EN61000-4-11	30% 500ms 60% 10ms 100% 20ms 100% 5000ms	B B B B	

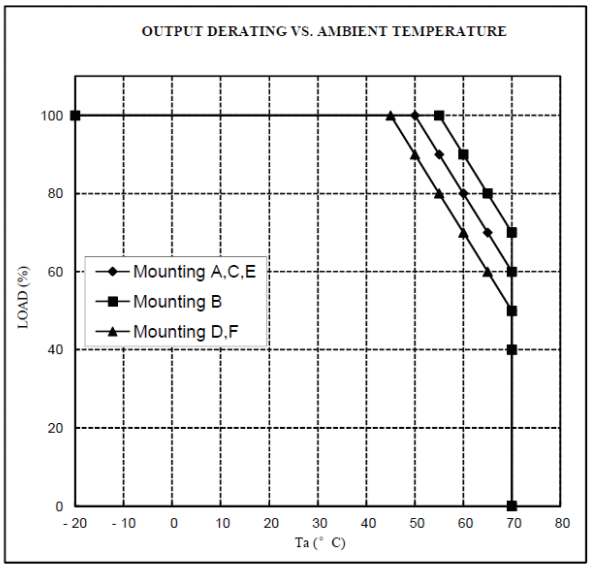
Specifications

Model		CUT35-522	CUT35-5FF
Output			
Output Voltage Adjustment	V	See model selector table	
Switching Frequency	kHz	100	
Line Regulation	-	See model selector table	
Load Regulation	-	See model selector table	
External Load Capacitance	uF	5V; 8,800, ±12V; 1,200, ±15V; 800	
Ripple & Noise	-	See model selector table	
Temperature Coefficient	%/°C	V1: <0.02%/°C, V2 & 3 <0.03%/°C (-20 to +70°C)	
Minimum Load	-	No minimum load required	
Overcurrent Protection	%	>105. Hiccup with auto recovery	
Overvoltage Protection(2)	V	V1: 5.7-7.0, V2: 13.8 - 16.8	V1: 5.7-7.0, V2: 17.2 - 21.0
Remote Sense	-	None	
Remote On/Off	-	None	
Parallel Operation	-	Not possible	
Series Operation	-	Not possible	
Environmental			
Operating Temperature(3)	°C	-20 to +70 (See derating drawing for open frame model)(3)	
Operating Humidity	%RH	5 - 95 (None Condensing)	
Storage Temperature	°C	-30 to + 85	
Storage Humidity	%RH	5 - 95 (None Condensing)	
Cooling	-	Convection or forced air cooling (0.7m/s)	
Altitude	m	3000	
Withstand Voltage (For 1 minute)	Vac	Input to Ground: 2,000, Input to Output: 3,000, Output to Ground: 500, CH1 - V2/V3: 500	
Vibration (Non operating)	-	10-55Hz (Sweep for 1min.) 19.6m/s^2 constant X,Y,Z 1 hour each	
Shock (Non operating, In package)	-	Less than 196.1m/s^2, 11ms	
Other			
Weight (Typ)	g	Open Frame: 90, Baseplate (/B): 136, Enclosed (/A): 175	
Size (WxHxD)	mm	Open Frame: 50.8 x 26 x 101.6 Baseplate (/B): 56.5 x 28 x 122 Enclosed (/A): 63.1 x 36 x 125	
Size (WxHxD)	Inches	Open Frame: 2.0 x 1.023 x 4.0 Baseplate (/B): 2.22 x 1.1 x 4.8 Enclosed (/A): 2.48 x 1.42 x 4.92	
Connectors	-	JST	
MTBF - Telcordia SR-332 Issue 3(4)	Hours	2,363,657	
Warranty	yrs	3	

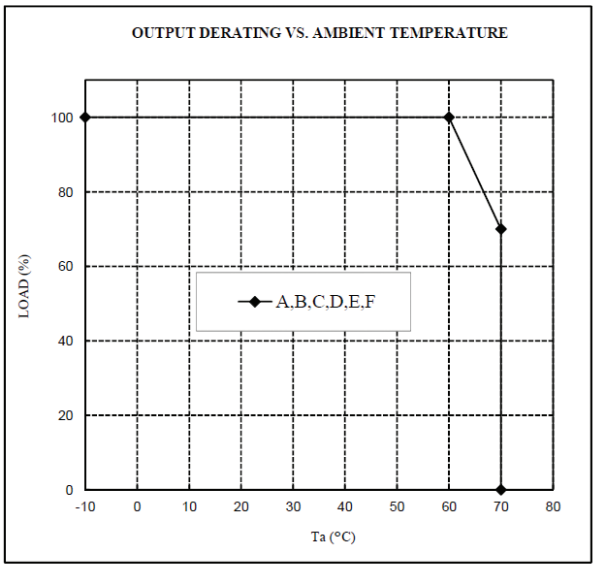
Notes
See website for detailed specifications, test methods and installation manual
* Safety certified for AC input only
(1) Derate linearly to 60% load from 100Vac to 85Vac input or 105Vdc to 88Vdc
(2) Cycle AC to reset
(3) See derating curves in installation manual for all mounting orientatons and models
(4) CUT35-522, 230Vac, 25°C, Ground Benign

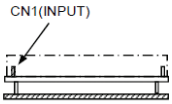
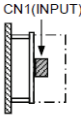
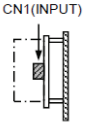
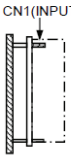
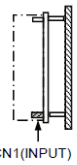
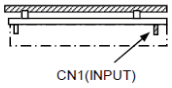
CUT35 Derating

*COOLING: CONVECTION COOLING

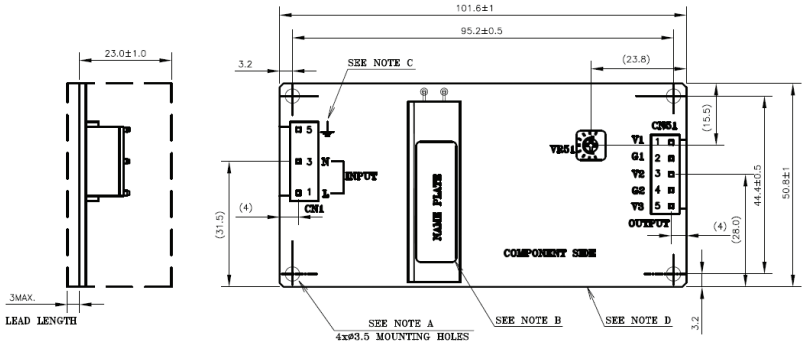


*COOLING: FORCED AIR COOLING



(MOUNTING A)	(MOUNTING B) (STANDARD MOUNTING)	(MOUNTING C)	(MOUNTING D)	(MOUNTING E)	(MOUNTING F)
					

Outline Drawing CUT35 (Open Frame)



CONNECTORS USED :

PART DESCRIPTION	PART NAME	MANUFACTURER	QTY
PIN HEADER (INPUT SIDE CN1)	B3P5-VH(LF)(SN)	J.S.T	1
PIN HEADER (OUTPUT CN51)	B5P-VH(LF)(SN)	J.S.T	1

*OUTPUT CURRENT OF EACH CONNECTOR PIN MUST BE LESS THAN 5A.

MATCHING HOUSINGS AND PINS(NOT INCLUDED WITH THE PRODUCT):

SOCKET HOUSING (CN1)	VHR-5N	J.S.T	1
SOCKET HOUSING (CN51)	VHR-5N	J.S.T	1
TERMINAL PINS	SVH-21T-P1.1	J.S.T	8
	BVH-41T-P1.1		
HAND CRIMPING TOOL	YC-930R	J.S.T	-
	YC-931R		

NOTES :

A : THE 4xØ3.5 HOLES ARE CUSTOMER CHASSIS MOUNTING HOLES AND INSERT SPACER (MAX ø6.2) OF HEIGHT OVER 8mm TO LIFT THE UNIT.ALL MUST BE SCREWED AND GROUNDED.

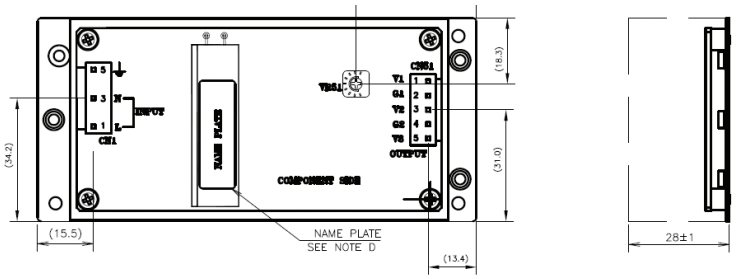
B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, NOMINAL OUTPUT CURRENT, PEAK OUTPUT CURRENT AND SAFETY MARKING(FOR ONLY APPROVED PRODUCTS)ARE SHOWN ON THE NAME PLATE IN ACCORDANCE WITH THE SPECIFICATIONS. COUNTRY OF MANUFACTURE WILL BE SHOWN ON THE NAME PLATE.

C : ⏚ IS FOR SAFETY GROUND CONNECTION.

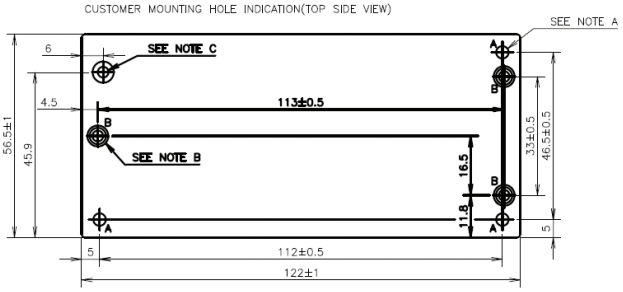
D : TO KEEP THE DISTANCE MORE THAN 4mm BETWEEN PC-BOARD EDGE AND CUSTOMER CHASSIS.

Outline Drawing CUT35 /B (Baseplate)

Unless otherwise specified dimensional tolerance as follows:	
DIMENSION (mm)	TOLERANCE ± mm
L≤16	0.2
16<L≤63	0.2
63<L≤250	0.3
250<L	0.5



CUSTOMER MOUNTING HOLE INDICATION(TOP SIDE VIEW)



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PIN HEADER (OUTPUT SIDE CN51)	B5P-VH(LF)(SN)	J.S.T	1

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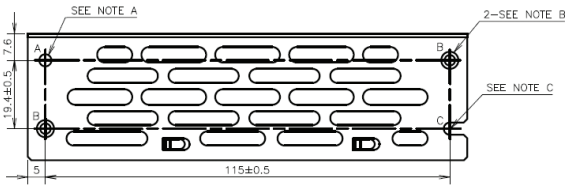
	BVH-41T-P1.1		
HAND CRIMPING TOOL	YC-930R	J.S.T	–
	YC-931R		

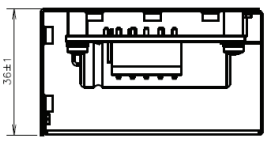
NOTE:

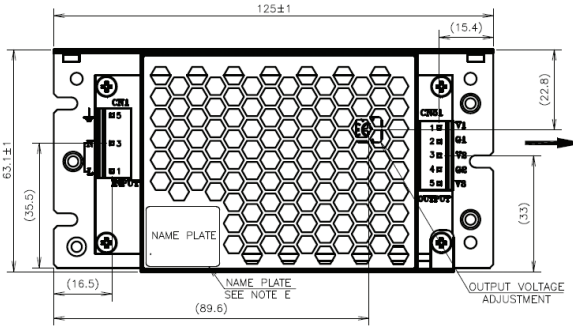
A : ø3.5 HOLES FOR CUSTOMER CHASSIS MOUNTING.
B : M3 TAPPED & EMBOSSED HOLES FOR CUSTOMER CHASSIS MOUNTING.
C : M3 TAPPED & STANDOFF HOLES FOR FG CONNECTION.
D : MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, NOMINAL OUTPUT CURRENT, PEAK OUTPUT CURRENT AND SAFETY MARKING(FOR ONLY APPROVED PRODUCTS)ARE SHOWN ON THE NAME PLATE IN ACCORDANCE WITH THE SPECIFICATIONS. COUNTRY OF MANUFACTURE WILL BE SHOWN ON THE NAME PLATE.

Outline Drawing CUT35 /A (Enclosed)

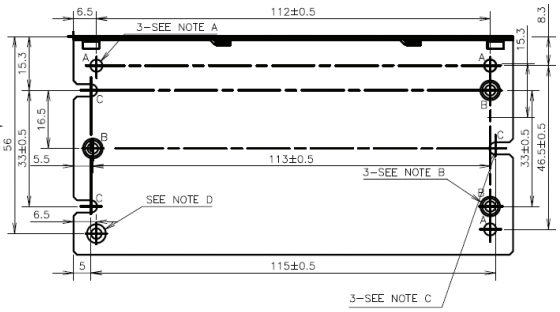
Unless otherwise specified dimensional tolerance as follows:	
DIMENSION (mm)	TOLERANCE ± mm
L≤16	0.2
16<L≤63	0.2
63<L≤250	0.3
250<L	0.5







CUSTOMER MOUNTING HOLE INDICATION(TOP SIDE VIEW)



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NOTE:

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D : M3 TAPPED & STANDOFF HOLES FOR FG CONNECTION.
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TDK-Lambda France SAS
Tel: +33 1 60 12 71 65
france@fr.tdk-lambda.com
www.emea.lambda.tdk.com/fr

Italy Sales Office
Tel: +39 02 61 29 38 63
info.italia@it.tdk-lambda.com
www.emea.lambda.tdk.com/it

Netherlands
info@nl.tdk-lambda.com
www.emea.lambda.tdk.com/nl

TDK-Lambda Germany GmbH
Tel: +49 7841 666 0
info@de.tdk-lambda.com
www.emea.lambda.tdk.com/de

Austria Sales Office
Tel: +43 2256 655 84
info@at.tdk-lambda.com
www.emea.lambda.tdk.com/at

Switzerland Sales Office
Tel: +41 44 850 53 53
info@ch.tdk-lambda.com
www.emea.lambda.tdk.com/ch

Nordic Sales Office
Tel: +45 8853 8086
info@dk.tdk-lambda.com
www.emea.lambda.tdk.com/dk

TDK-Lambda UK Ltd.
Tel: +44 (0) 12 71 85 66 66
info@uk.tdk-lambda.com
www.emea.lambda.tdk.com/uk

TDK-Lambda Ltd.
Tel: +9 723 902 4333
info@tdk-lambda.co.il
www.emea.lambda.tdk.com/il

C.I.S.
Commercial Support:
Tel: +7 (495) 665 2627
Technical Support:
Tel: +7 (812) 658 0463
info@tdk-lambda.ru
www.emea.lambda.tdk.com/ru

TDK-Lambda Americas
Tel: +1 800-LAMBDA-4 or 1-800-526-2324
powersolutions@us.tdk-lambda.com
www.us.lambda.tdk.com

TDK Electronics do Brasil Ltda
Tel: +55 11 3289-9599
sales.br@tdk-electronics.tdk.com
www.tdk-electronics.tdk.com/en

TDK-Lambda Corporation
Tel: +81-3-6778-1113
www.jp.lambda.tdk.com

TDK-Lambda (China) Electronics Co. Ltd.
Tel: +86 21 6485-0777
powersolutions@cn.tdk-lambda.com
www.lambda.tdk.com.cn

TDK-Lambda Singapore Pte Ltd.
Tel: +65 6251 7211
tls.mkt@sg.tdk-lambda.com
www.sg.lambda.tdk.com

TDK India Private Limited, Power Supply Division
Tel: +91 80 4039-0660
mathew.philip@in.tdk-lambda.com
www.sg.lambda.tdk.com

For Additional Information, please visit
https://product.tdk.com/en/power/