

Dual and Triple Output 35W Low Profile Power Supplies

<https://product.tdk.com/en/power/cut>
www.emea.lambda.tdk.com/cut



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

- 2 x 4 Footprint With a Low 1.06" (27mm) Height
- Output 1 Isolated From Outputs 2 & 3
- No Minimum Loading
- Open Frame, Baseplate or Enclosed Formats
- Three Year Warranty

Benefits

- Space Saving in End Equipment
- Flexible Utilization
- Reduced Load Regulation
- Versatile Mounting
- 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
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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 $\pm 15\text{kV}$ and contact $\pm 8\text{kV}$	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	$\pm 4\text{kV}$	A	
Surge	EN61000-4-5	Normal $\pm 2\text{kV}$ Common $\pm 4\text{kV}$	A	
Conducted Susceptibility	EN61000-4-6	10Vrms	A	
Magnetic Fields	EN61000-4-8	30A/m	A	
Voltage Dips	EN61000-4-11	30% 500ms	B	
		60% 10ms	B	
		100% 20ms	B	
		100% 5000ms	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 - 16.8V1: 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

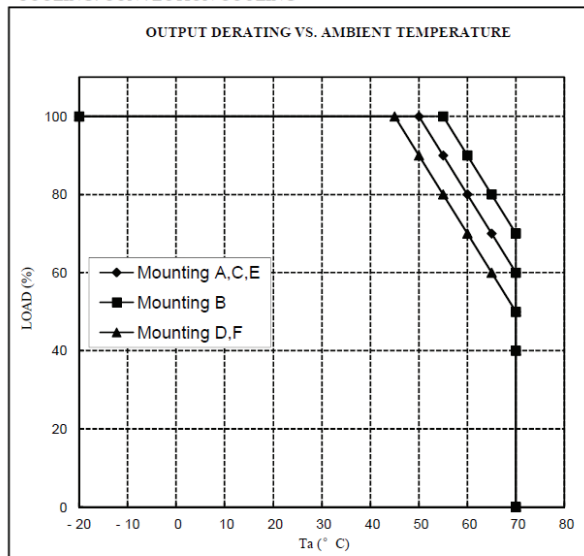
(2) Cycle AC to reset

(3) See derating curves in installation manual for all mounting orientatons and models

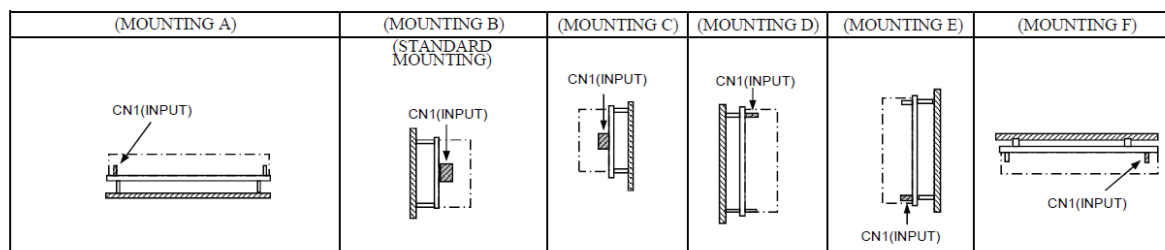
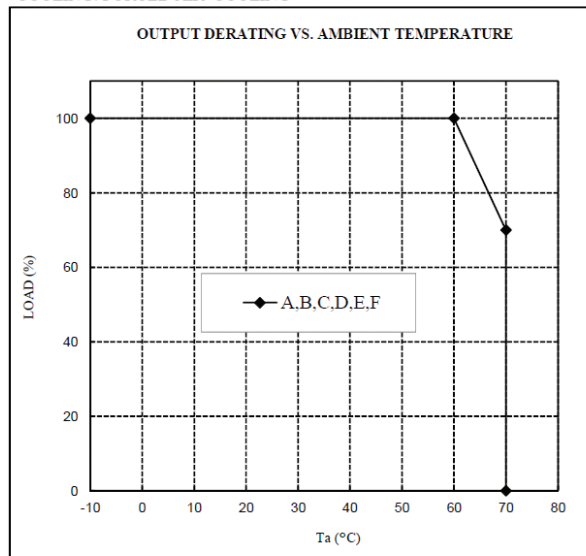
(4) CUT35-522, 230Vac, 25°C, Ground Benign

CUT35 Derating

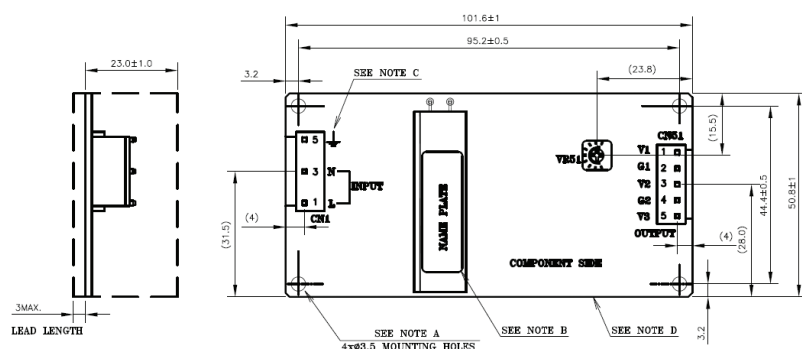
*COOLING: CONVECTION COOLING



*COOLING: FORCED AIR COOLING



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 4x3.5 HOLES ARE CUSTOMER CHASSIS MOUNTING HOLES AND INSERT SPACER (MAX $\phi 6.2$) 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.

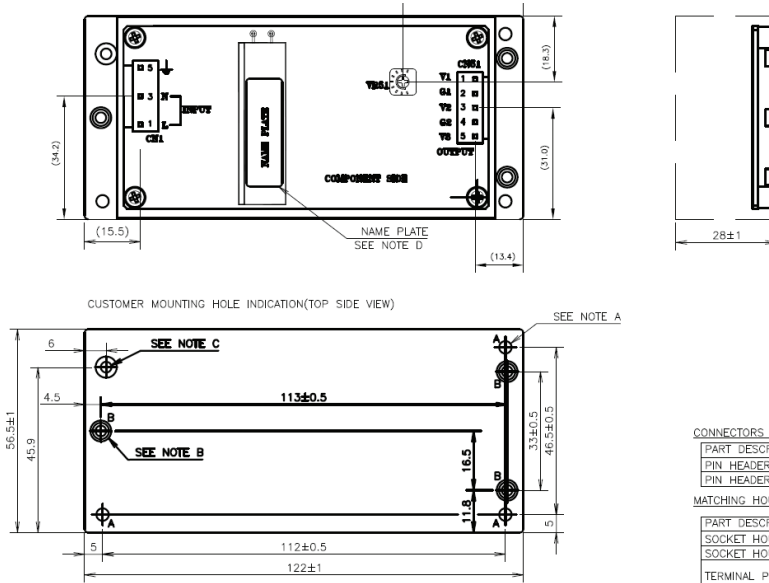
C : $\perp$ IS FOR SAFETY GROUND CONNECTION.

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



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.

CONNECTORS USED:

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

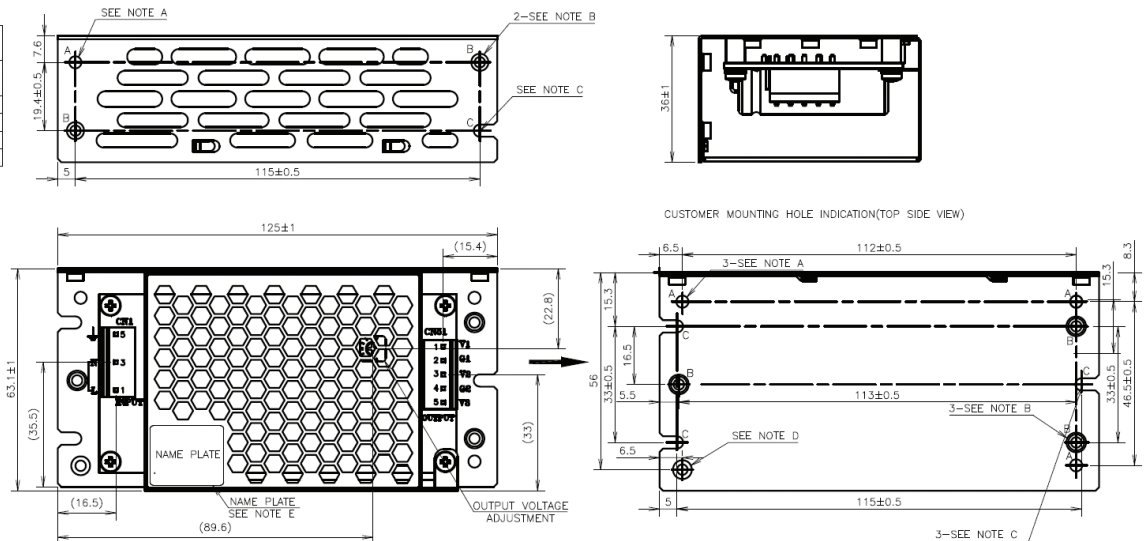
MATCHING HOUSINGS, PINS & TOOL (NOT INCLUDED WITH THE PRODUCT):

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
SOCKET HOUSING(CN1)	VHR-SN	J.S.T	1
SOCKET HOUSING(CN51)	VHR-SN	J.S.T	1
TERMINAL PINS	SVH-21T-P1.1 BVH-41T-P1.1	J.S.T	8
HAND CRIMPING TOOL	YC-930R YC-931R	J.S.T	-

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



CONNECTORS USED :

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

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

NOTE:

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 B : M3 TAPPED & EMBOSSED HOLES FOR CUSTOMER CHASSIS MOUNTING.
 C : Ø3.5 HOLES FOR CUSTOMER CHASSIS MOUNTING.
 D : M3 TAPPED & STANDOFF HOLES FOR FG CONNECTION.
 E : 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.



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
tis.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

