

# Sähkölähde 0-30V / 3A

## PCB and all components, less power transformer

A power supply with adjustable output voltage and current limiting is part of the basic equipment of every electronics lab. However, the increased complexity of a switch-mode design scares away many potential builders, even though it actually isn't all that complicated if you use a suitable combination of well-known technologies. This circuit described is suitable for a building a single or dual power supply.



## A switch-mode 0-30 V / 3 A bench supply

This power supply is based on an integrated switching regulator to keep the component count within reasonable limits. The functional units of this IC include voltage regulation, switching signal generation, and integrated power switch. This means that only a few external components are necessary.



- Adjustable secondary-side switch-mode power supply (buck converter)
- Output voltage 0-30 V (typical) (25 V minimum)
- Adjustable current limiting up to 3 A
- Maximum output power 90 W
- Compact PCB layout
- Switching frequency 52 kHz

## Osaluettelo

R1,R2	= 820R	0.6W	C1	= 10000µF	50V	r=10mm	35x35
R3	= 240R	0.6W	C2,C3	= 220µF	63V	r=5mm	10x16
R4,R5	= 560R	0.6W	C4	= 100µF	63V	r=5mm	10x13
R6	= 0.05R	5W	C5	= 2200µF	63V	r=10mm	22x25
R7,R8	= 12k	0.6W	C6	= 680pF			
R9	= 47k	0.6W	C7	= 100nF			
R10	= 39k	0.6W	L1	= 330µH	4.5A		
R11	= 160k	0.6W	HS1	= jäähdytyslevy	SK129/25.4/STS		
R12,R13	= 1k	0.6W	K1,K2	= riviliitin 2-osainen	5mm		
R14	= 100R	0.6W	K3	= piikkirima 6-piikkinen			
R15	= 100k	0.6W	B1	= TS6P07G	(700V 6A)		
R16	= 10k	0.6W	D1	= 1N5822	(40V 3A)		
P1	= 25k	pot lin	D2,D3	= 1N4004			
P2	= 250k	pot lin	D4	= BZX85C22	(22V 1.3W)		
P3	= 50R	trim monikierros, pysty	D5	= BZX85C18	(18V 1.3W)		
P4	= 10k	trim monikierros, pysty	D6	= 1N4148			
P5	= 50k	trim monikierros, pysty	D7	= LED, 3mm, pun			
P6	= 1k	trim monikierros, pysty	IC1	= LM2576T-ADJ			
P7	= 200R	trim monikierros, pysty	IC2	= LM337LZ			
			IC3	= LM358AN			