

Features

- ◆ Compact high voltage power supplies
- ◆ Full SMD design with ceramic capacitors for highest reliability
- ◆ Positive or negative polarity models
- ◆ PCB- and flying lead versions
- ◆ Excellent output stability
- ◆ Low temperature coefficient
- ◆ Ultra low ripple
- ◆ Remote voltage programming 0 to 100 %
- ◆ Short circuit protection
- ◆ Shielded metal case
- ◆ 3-year product warranty



The THV / SHV series are regulated miniature high voltage power modules using SMD and hybrid technology. They are designed for PCB mounting (THV series) or chassis mounting (SHV series). The use of high stability components guarantees a minimal temperature drift and a very stable output voltage. Typical applications for these high voltage power supplies are photomultiplier tubes, gas chromatography, analytical instruments and wherever where small size and high output voltage stability is requested.

Models

Order code	Input voltage range	Output voltage	Output current max.	Case
THV 12-180P	12 VDC 10.8 – 13.2 VDC	0...+180 VDC	15 mA	A
THV 12-180N		0...-180 VDC	15 mA	A
THV 12-300P		0...+300 VDC	10 mA	A
THV 12-300N		0...-300 VDC	10 mA	A
THV 12-350P		0...+350 VDC	7 mA	A
THV 12-350N		0...-350 VDC	7 mA	A
THV 12-500P		0...+500 VDC	6 mA	B
THV 12-500N		0...-500 VDC	6 mA	B
THV 12-1000P	12 VDC 10.8 – 16.5 VDC	0...+1000 VDC	2 mA	B
THV 12-1000N		0...-1000 VDC	2 mA	B
THV 12-1500P		0...+1500 VDC	1.3 mA	B
THV 12-1500N		0...-1500 VDC	1.3 mA	B
THV 12-2000P		0...+2000 VDC	1 mA	B
THV 12-2000N		0...-2000 VDC	1 mA	B
SHV 12-0.5 K 6000P	12 VDC 10.8 – 13.2 VDC	0...+500 VDC	6 mA	C
SHV 12-0.5 K 6000N		0...-500 VDC	6 mA	C
SHV 12-1.0 K 2000P	12 VDC 10.8 – 16.5 VDC	0...+1000 VDC	2 mA	C
SHV 12-1.0 K 2000N		0...-1000 VDC	2 mA	C
SHV 12-1.5 K 1300P		0...+1500 VDC	1.3 mA	C
SHV 12-1.5 K 1300N		0...-1500 VDC	1.3 mA	C
SHV 12-2.0 K 1000P		0...+2000 VDC	1 mA	C
SHV 12-2.0 K 1000N		0...-2000 VDC	1 mA	C

Appendix P for positive output polarity / Appendix N for negative output polarity

Input Specifications

Input voltage	180, 300, 350 & 500 VDC models: +10.8 to +13.2 VDC other VDC models: +10.8 to +16.5 VDC
---------------	--

Reserve voltage protection	none
----------------------------	------

Conducted noise (input)	internal filter
-------------------------	-----------------

Output Specifications

Voltage set accuracy	±5 %
----------------------	------

Voltage adjustment range (adjustable with external voltage 0 to +4 VDC or with 5 kOhm variable resistor)	0 – 100 %
---	-----------

Remote On/Off control (not for 180, 300, 350 VDC models)	On = pin 2 to pin 5 open Off = pin 2 to pin 5 short
--	--

Regulation	– Input variation Vin min. to Vin max. – Load variation 0 – 100 %	0.03 % max. 0.08 % max.
------------	--	----------------------------

Ripple and noise (20 MHz Bandwidth)	180, 300 & 350 VDC models: 30 mVpk-pk typ. 500 VDC models: 10 mVpk-pk typ. 1.0, 1.5 & 2.0 kVDC models: 8 mVpk-pk typ.
--	---

Temperature coefficient	±0.01 %/K
-------------------------	-----------

Stability	0.05 % 8h after warm-up time
-----------	------------------------------

Output current limitation	105 % of Iout max., fold back
---------------------------	-------------------------------

Short circuit protection	indefinite, automatic recovery
--------------------------	--------------------------------

General Specifications

Temperature ranges	– Operating – Case temperature – Storage	–10°C to +60°C +95°C max. –25°C to +85°C
--------------------	--	--

Derating	4 %/K above 50°C
----------	------------------

Humidity (non condensing)	95 % rel H max.
---------------------------	-----------------

Efficiency	60 – 65 %
------------	-----------

Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)	>300'000 h
---	------------

Isolation (Input/Output) – Voltage	none
------------------------------------	------

Switching frequency	125 kHz typ. (fixed)
---------------------	----------------------

Vibration	5 – 100 Hz amplitude 10 mm pk-pk 10 – 55 Hz acceleration 2 G
-----------	---

Thermal shock	acceleration 20 G max. time 11 ms.
---------------	------------------------------------

Environmental compliance	– Reach – RoHS	www.tracopower.com/products/thv-reach.pdf RoHS Directive 2011/65/EU
--------------------------	-------------------	---

Physical Specifications

Casing material	Steel chrome-nickel plated
-----------------	----------------------------

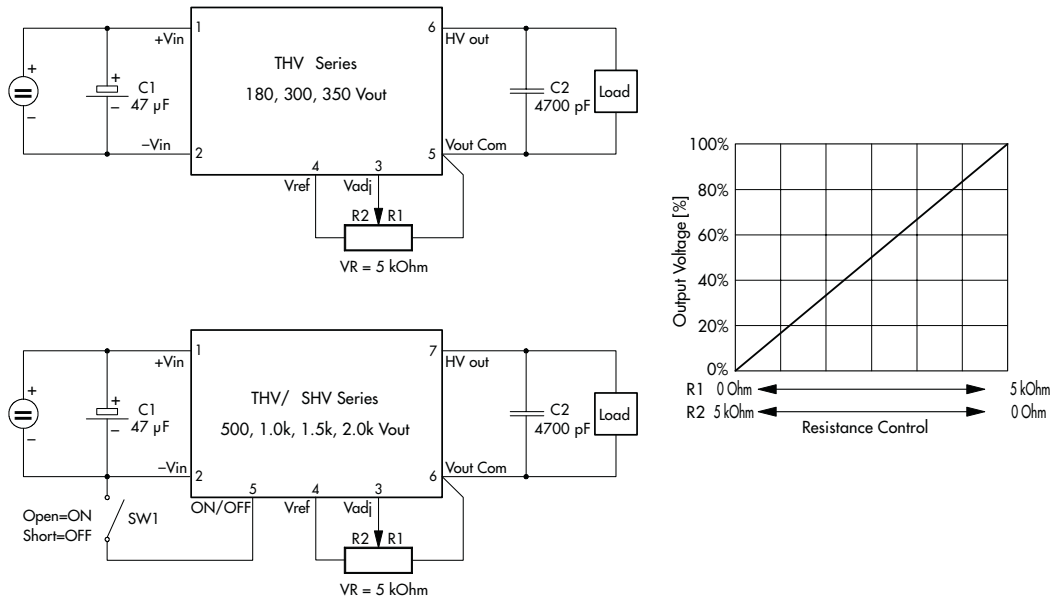
Weight	THV models case A : 47 g (1.66 oz) THV models case B : 65 g (2.29 oz) SHV models : 98 g (3.46 oz)
--------	---

Soldering temperature	max. 260°C / 10 sec.
-----------------------	----------------------

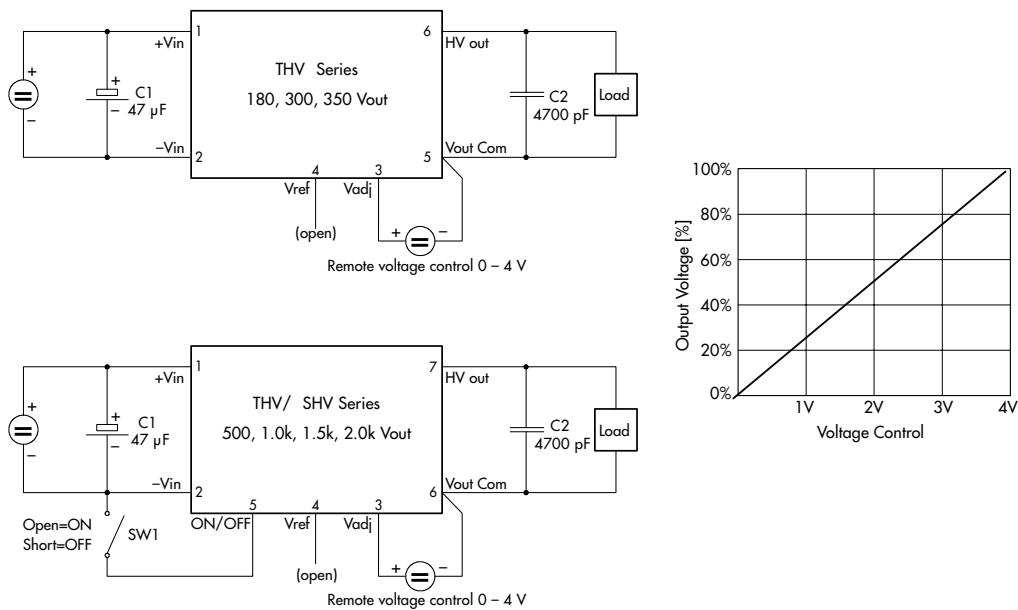
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Connection Diagram

Connection for remote control by variable resistor

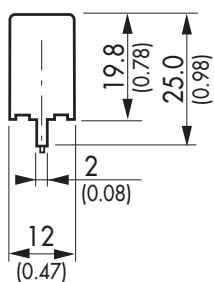
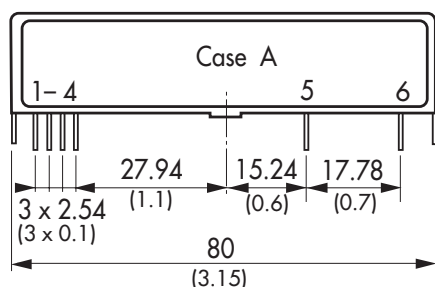


Connection for remote control voltage control

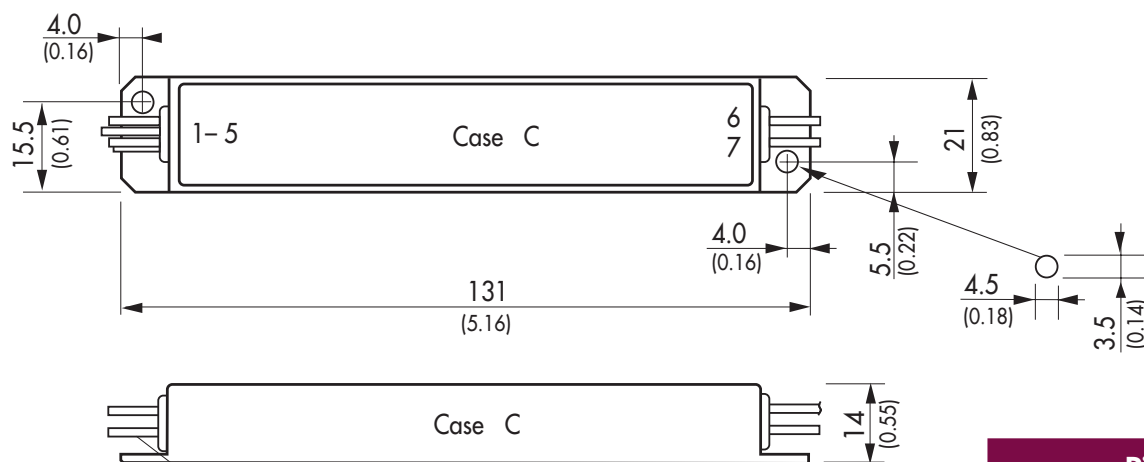
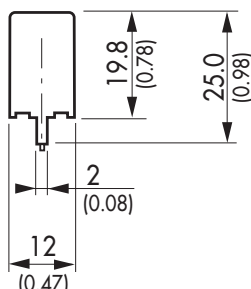
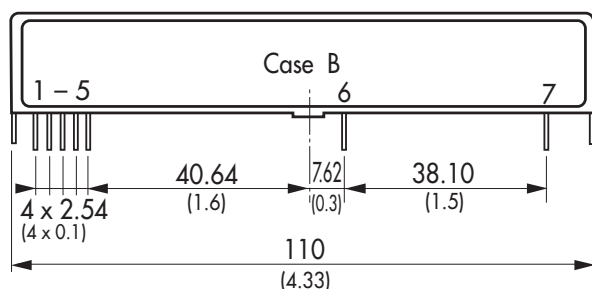


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Outline Dimensions



Pin-Out		
Pin	Case A	Case B
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	V adj.	V adj.
4	V ref.	V ref.
5	Common	ON/OFF
6	Vout	Common
7	no pin	Vout



Lead length 250 mm (10.0)

Dimensions in [mm], () = Inch
Pin diameter: 0.65 ±0.05 (0.03 ±0.002)
Tolerances: ±0.5 (±0.02)

Pin-Out		
Pin	Lead color	Case C
1	red	+Vin (Vcc)
2	black	-Vin (GND)
3	yellow	V adj.
4	orange	V ref.
5	blue	ON/OFF
6	black	Common
7	red	Vout

Specifications can be changed any time without notice.