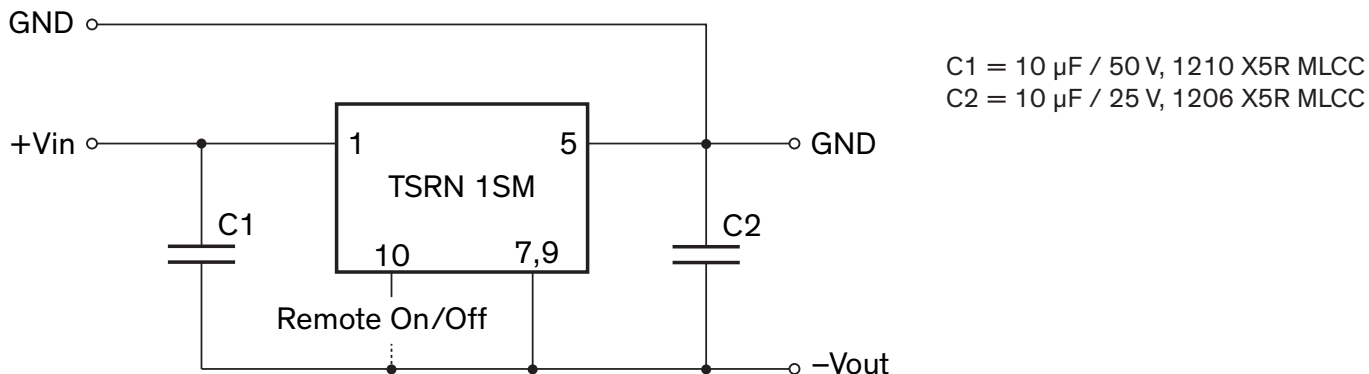


Application note for negative output voltage

External circuit for negative output voltage



Input / Output specifications

Order Code	Input voltage range	Output voltage nom.	Output voltage trim range	Output current max.	Efficiency typ.
TSRN 1-2433SM	4.6 - 32 VDC (12 VDC)	-3.3 VDC	-1.5 to -5.5 VDC	0.6 A	74 % (at Vin min.)
TSRN 1-2450SM	4.6 - 32 VDC (12 VDC)	-5 VDC	-2.5 to -8.0 VDC	0.4 A	80 % (at Vin min.)
TSRN 1-2490SM	7 - 27 VDC (12 VDC)	-9 VDC	-4.5 to -12.6 VDC	0.3 A	85 % (at Vin min.)
TSRN 1-24120SM	7 - 24 VDC (12 VDC)	-12 VDC	-4.5 to -13.5 VDC	0.3 A	85 % (at Vin min.)
TSRN 1-24150SM	7 - 21 VDC (12 VDC)	-15.0 VDC	-4.5 to -15.5 VDC	0.2 A	86 % (at Vin min.)

Note - For negative output circuit Input voltage plus absolute output voltage set must not exceed 36 VCD ($V_{in} + |V_{out}| < 36 \text{ VDC}$)

Input Specifications

Recommended Input fuse	12 Vin models: 1'600 mA (slow blow) 24 Vin models: 1'250 mA (slow blow)
No load input current	-3.3 / -5.5 Vout models: 3 mA typ. -9.0 / -12 Vout models: 7 mA typ. TSRN 1-24150SM: 10 mA typ.

General Specifications

Output power derating	- Temperature	4.00 %/K above +75°C
Remote Control	- Voltage Controlled Remote	On: 2.0 to 5.0 VDC or open circuit Off: 0 to 0.8 VDC or short circuit Refers to 'Remote' and '-Vout' Pin
	- Off Idle Input Current	1.2 mA typ.