osi1610 Series

62.5 V–6 kV, 4 W/20 W/30 W, automatic crossover voltage/current regulation



Product introduction

The osi1610 series is a PCB-mount high-voltage module integrating form, mounting and function, with more features, competitive pricing, better performance, higher reliability and easier system integration.

Product features

- Voltage range 62.5 V–6 kV
- Available output power 4 W, 20 W and 30 W
- Automatic crossover voltage/current regulation
- Voltage and current monitor signals
- Arc and short-circuit protection
- Precision +5 V reference output
- Universal standard interface

Specifications

Parameter	Specification
Input voltage	4 W models: 12 VDC. 20 W and 30 W models: 24 VDC.
Input voltage range	4 W: 11–30 VDC. 20 W and 30 W: 23–30 VDC.
Input current (typical)	Disabled: 30 mA. No load: 90 mA. Full load: 4 W: 0.5 A; 20 W: 1.0 A; 30 W: 1.5 A.
Efficiency	Typical 80–85%.
Voltage regulation	Line <0.01%; load <0.01%.
Current regulation	Line <0.01%; load <0.01%.
Stability	After a 0.5-hour warm-up: 0.01% per 8 hours; less than 0.02% per day.
Accuracy	2% for all programming and monitoring, except current sensor 10%.
Temperature coefficient	Voltage and current: better than 100 ppm/°C; 25 ppm/°C optional.
Ambient temperature	Operating: 0°C to 65°C. Storage: −55°C to 85°C.
Humidity	10–90%, non-condensing.
Cooling	Typical convection cooling. At full power a 30 W supply may require additional cooling to maintain case temperature below 65°C. Methods include forced air, a heatsink or metal enclosure. The user is responsible for keeping case temperature below 65°C.
Dimensions	38.1 mm wide × 20.6 mm high × 75.2 mm deep.
Weight	Approximately 0.12 kg.

Model selection (customizable)

Output (kV)	Output (mA)	Positive polarity	Negative polarity
1	30	osi1610P1-30	osi1610N1-30
2	15	osi1610P2-30	osi1610N2-30
3	10	osi1610P3-30	osi1610N3-30
6	5	osi1610P6-30	osi1610N6-30

Legacy interface (L option)

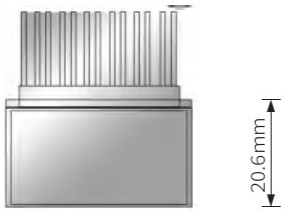
Pin	Signal	Description
1	Power ground return	+12 VDC or +24 VDC power return / HV return
2	Positive power input	+12 VDC or +24 VDC input
3	Current sensor	See current-sensor description and table
4	Enable input	Low (<0.7 V, Isink 1 mA): HV OFF; high (open or >2 V): HV ON
5	Signal ground	Signal ground
6	Remote adjustment	Positive supplies: 0 to +4.64 VDC = 0–100% rated voltage; Zin >1 MΩ. Negative supplies: +5 VDC to 0.36 V = 0–100% rated voltage; Zin >100 kΩ.
7	+5 V reference output	+5 VDC ±0.5%, 50 ppm/°C; Zout = 475 Ω
8	HV ground return	HV ground return
9	E output monitor	10:1 for models below 1 kV; 100:1 for models rated 1 kV and above. Voltage monitor polarity matches supply polarity. Accuracy ±2%, 100 ppm/°C. Calibrate with a voltmeter having 10 MΩ input resistance.
10	HV output	HV output
11	HV output	HV output

Power supply pin definitions

Pin	Signal	Description
1	Power ground return	+12 VDC or +24 VDC power return / HV return
1A	Special resistance	Connect the unique identification resistor to ground
2	Positive power input	+12 VDC or +24 VDC input
2A	Remote output	NC
3	Current sensor	See current-sensor description and table
3A	Current monitor	0 to 4.64 VDC = 0–100% rated output; Zout <10 kΩ
4	Enable input	Low (<0.7 V, Isink 1 mA): HV OFF; high (open or >2 V): HV ON
4A	Voltage monitor	0 to 4.64 VDC = 0–100% rated output; Zout <10 kΩ
5	Signal ground	Signal ground
5A	Current programming	0 to 4.64 VDC = 0–100% rated output; Zin >47 kΩ. Leave open to preset current limit of 103% rated output current.
6	Remote adjustment	Positive supplies: 0 to +4.64 VDC = 0–100% rated voltage; Zin >1 MΩ. Negative supplies: +5 VDC to 0.36 V = 0–100% rated voltage; Zin >100 kΩ. Leave open if programming through pin 6A (voltage programming).
6A	Voltage programming	0 to 4.64 VDC = 0–100% rated voltage; Zin >100 kΩ. Leave open if programming through pin 6 (remote adjustment).
7	+5 V reference output	+5 VDC ±0.5%, 50 ppm/°C; Zout = 475 Ω
8	HV ground return	HV ground return
9	E output monitor	10:1 for models below 1 kV; 100:1 for models rated 1 kV and above. Voltage monitor polarity matches supply polarity. Accuracy ±2%, 100 ppm/°C. Calibrate with a voltmeter having 10 MΩ input resistance.
10	HV output	HV output
11	HV output	HV output

Outline dimensions

Dimensions in mm.







10