Intronics Power Inc.®
1400 PROVINDENCE HIGHWAY • BUILDING 2 SUITE 2400
NORWOOD, MASSACHUSETTS 02062-5015 USA
www.intronicspower.com

S SERIES DC/DC MODULES

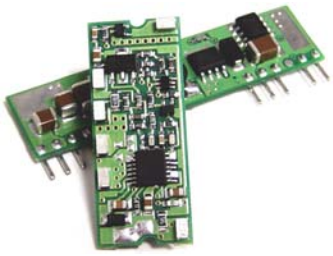
Applications

- Servers, Switches and Data Storage
- Wireless Communications
- Distributed Power Architecture
- Semiconductor Test Equipment
- Networking Gear
- Data Communications
- Telecommunications
- Industrial / Medical

The S Families of high efficiency non-isolated DC/DC converters offer power levels of up to 80 Watt, which exceeds that of other Industry-standard SMT and Through-Hole SIPs with the same package, while also providing ultra-wide input voltage range for 3.3Vin and 5Vin. These converters provide versatility without sacrificing the board space. All models feature an input filter and regulated outputs. The open-frame construction facilitates maximum power delivered with the highest efficiency of up to 95%. All converters combine creative design practices with highly derated power devices to achieve very high reliability, high performance and low cost solution to systems designers.

Specifications & Features Summary

- Industry Standard SIP or SMT Pinout
- High Efficiency to 95%
- Ultra-Wide Input Voltage Range
- User-Adjustable Outputs (S10-12S5, S15 & S16 Models)
- Over Temperature Protection
- Continuous Short Circuit Protection
- Remote ON/OFF
- Pending UL Approval
- **PLEASE ADD SUFFIX "T" FOR THROUGH-HOLE PACKAGE**
- **PLEASE ADD SUFFIX "N" FOR NEGATIVE LOGIC CONTROL[5]**



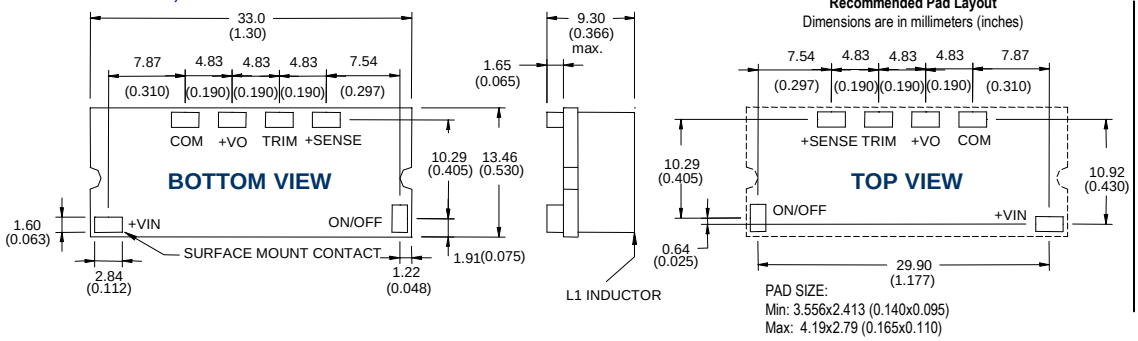
MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT NO LOAD	INPUT CURRENT FULL LOAD	% EFF	PACKAGE
S10-5S1.0	3.0 –5.5VDC	1.0 Vdc	10 A	50 mA	2353mA	85	SIP / SMT
S10-5S1.2	3.0 –5.5VDC	1.2 Vdc	10 A	50 mA	2791mA	86	SIP / SMT
S10-5S1.5	3.0 –5.5VDC	1.5 Vdc	10 A	50 mA	3409mA	88	SIP / SMT
S10-5S1.8	3.0 –5.5VDC	1.8 Vdc	10 A	50 mA	4000mA	90	SIP / SMT
S10-5S2.0	3.0 –5.5VDC	2.0 Vdc	10 A	60 mA	4396mA	91	SIP / SMT
S10-5S2.5	3.0 –5.5VDC	2.5 Vdc	10 A	60 mA	5376mA	93	SIP / SMT
S10-5S3.3	4.5 –5.5VDC	3.3 Vdc	10 A	60 mA	6947mA	95	SIP / SMT
S10-12S5	8.3 –14.0VDC	0.75-5Vdc	10 A	Various	Various	93 max.	SIP / SMT
S15-5S3.3	3.0 –5.5VDC	0.9-3.63 Vdc	15 A	Various	Various	94 max.	SIP / SMT
S16-12S5	9.0 –14.0VDC	0.75-5Vdc	16A	Various	Various	94 max.	SIP / SMT

Typical at Ta= +25 ºC under nominal input voltages of 5V and 12VDC, unless noted. The information and specifications contained in this brief are believed to be accurate and reliable at the time of publication. Specifications are subject to change without notice. Refer to product specification sheet for performance characteristics and application guidelines.

Consult factory for hundreds of other available input/output voltage

INPUT SPECIFICATIONS	
Under Voltage Lockout Power-Up/Power-Down (S10 & S15)	2.8V typ. / 2.7V typ.
S10-12S5	8.0V typ. / 7.7V typ.
S16-12S5	8.5V typ. / 8.0V typ.
Input Filter Type	Capacitive
Positive Remote on/off Control: Module ON	Open Circuit or Vin High
Module OFF	<0.4Vdc
OUTPUT SPECIFICATIONS	
Voltage Accuracy	±1.5% max.
Transient Response: 25% Step Load Change	<200u sec.
Ripple and Noise, 20MHz BW, **Note 3**	
S10 / S15 - 20mV rms max. (50mV pk-pk max).	**S16 -** 30mV rms max.(75mV pk-pk max)
Temperature Coefficient	±0.03%/C max.
Short Circuit Protection	Continuous
Line Regulation, **Note1**	±0.2% max., (SMT S15 is ±0.4% max)
Load Regulation, **Note2**	±0.5% max.
External Trim Adj. Range (S10 Family)	±10%
Efficiency	See Table
Isolation Voltage	Not Isolated
Switching Frequency	300KHz typ.
Over Temperature Protection	120℃ typ., 130℃ for S16
Operating Ambient Temperature Range	-40℃ to +85℃
Derating Temperature	See Application Notes
Storage Temperature Range	-55℃ to +125℃
Dimensions: (Through-Hole Package) S10/S15	2"x0.5"x0.33" (50.8x12.7x8.3 mm)
(Through-Hole Package) S10-12S5 & S16	2"x0.512"x0.327" (50.8x13.0x8.3 mm)
(SMT Package)	1.3"x0.53"x0.366" (33.00x13.46x9.3 mm)
Structure	Non-potted With Open Frame Type
NOTES	
1. Measured from High Line to Low Line	S15(S16) Family Vo, set =1.8(3.3)Vdc
2. Measured from Full Load to Zero Load	S15/16 Family Vo, set =3.3Vdc
3. Measured with 10uf tantalum cap & 1uf ceramic cap across output.	
4. 100uf, ESR <20mΩ (S10/S15) or <100mΩ (S10-12S5/S16)Cap across Vin recommended	
5. Suffix "N" to the Model Number with Negative	Module ON – Open Circuit or <0.4Vdc

SMT PACKAGE S10, S15 & S16 SERIES



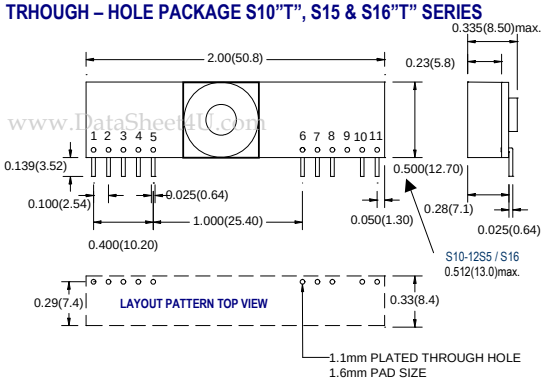
S10-12S5 & S16-12S5 External Resistor Values for programming output voltage

Vo,set (V)	Rtrim (KΩ)
0.75	Open
1.20	22.33
1.50	13.0
1.80	9.0
2.00	7.4
2.50	5.0
3.30	3.12
5.00	1.47

S15-5S3.3 External Resistor Values for programming output voltage

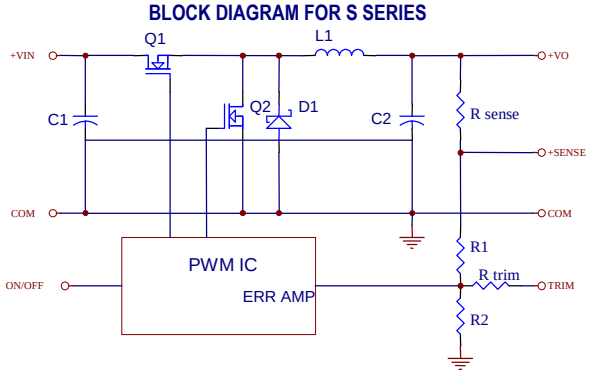
Vo,set (V)	Rtrim (KΩ)
0.90	135.36
1.00	79.17
1.20	41.71
1.50	22.98
1.80	14.96
2.00	11.75
2.50	6.93
3.30	3.15

TRHOUGH – HOLE PACKAGE S10"T", S15 & S16"T" SERIES



PIN CONNECTION	
Pin	FUNCTION
1	+Output
2	+Output
3	+Sense
4	+Output
5	Common
6	Common
7	+V Input
8	+V Input
9	No Pin
10	Trim
11	On/Off Control

BLOCK DIAGRAM FOR S SERIES



Dimensions are in inches (millimeters)

Tolerances: X.X ±0.5mm(0.02"), X.XX ±0.25mm(0.010"), unless otherwise noted.

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