



FEATURES 24V, 48V Inputs / Single, Dual Outputs

- High Efficiency
- Wide 2:1 Input Range
- Small Footprint / Low Profile
- Built-in Over Current Protection Circuit
- Input-Output Isolation
- Remote On/Off Control (CNT)
- Output Voltage Adjustment (TRM) (Single Outputs)
- Open Case Type
- Long Life Design (Employ Only Ceramic Capacitors)
- Wide Operating Temperature Range (-40°C ~ 85°C)
- 5 Year Warrant

ELECTRICAL SPECIFICATIONS

Input

- Input Range DC 24V(18 - 36), 48V(36 - 76)
- Efficiency 86 - 90% Typ.
- Remote On/Off Control [On : Short to -Vin
Off : Open

Output

- Output Voltages 3.3V, 5V, 12V, 15V, $\pm 12V$, $\pm 15V$
- Output Voltage Tolerance $\pm 2.0\%$
- Line Regulation $\pm 0.5\%$ Max.
- Load Regulation $\pm 1.0\%$ Max.
- Ripple and Noise 2% of Vout (Bandwidth : 20MHz)
- Output Voltage Trim Range $\pm 10.0\%$ Typ.

Protection Circuit

- Over Current / Short Circuit Protection ... Work Over 105% of Rating (Hiccup mode) (**NOTE 1**)

Electrically Isolated

- Isolation Input-Output, Input-Case, Output-Case / DC500V, 100M Ω
- High Pot Input-Output, Input-Case, Output-Case / AC500V, 1Min.

ENVIRONMENTAL

- Operating Temperature Range -20°C ~ 85°C
- Option, See **NOTE 2** -40°C ~ 85°C
- Operating Humidity (Non-Condensing) 5% ~ 95%RH
- Storage Temperature Range -40°C ~ 105°C
- Storage Humidity (Non-Condensing) 5% ~ 95%RH
- Cooling Method Convection, Forced Air
- MTBF (MIL-HDBK-217F) 5.5×10^5 hrs

NOTE 1. Long term continuous operation into a short circuit will compromise the reliability of the unit.

NOTE 2. As a factory added option, the all model can be operated from -40°C to 85°C, the suffix 'M' should be added to the model number when ordering. ex) SPS20-24-5M

ORDERING INFORMATION

Input	Output1	Output2	Maximum Power	Ripple&Noise Max.	Efficiency Typ.	Model Number
18 - 36V	3.3V@4.00A		13.20W	70mVp-p	86%	SPS20-24-3R3
18 - 36V	5V@4.00A		20.00W	70mVp-p	88%	SPS20-24-5
18 - 36V	12V@1.70A		20.40W	150mVp-p	90%	SPS20-24-12
18 - 36V	15V@1.40A		21.00W	150mVp-p	89%	SPS20-24-15
18 - 36V	+12V@0.85A	-12V@0.85A	20.40W	150/150mVp-p	89%	SPD20-24-1212
18 - 36V	+15V@0.70A	-15V@0.70A	21.00W	150/150mVp-p	89%	SPD20-24-1515
36 - 76V	3.3V@4.00A		13.20W	70mVp-p	86%	SPS20-48-3R3
36 - 76V	5V@4.00A		20.00W	70mVp-p	87%	SPS20-48-5
36 - 76V	12V@1.70A		20.40W	150mVp-p	89%	SPS20-48-12
36 - 76V	15V@1.40A		21.00W	150mVp-p	89%	SPS20-48-15
36 - 76V	+12V@0.85A	-12V@0.85A	20.40W	150/150mVp-p	88%	SPD20-48-1212
36 - 76V	+15V@0.70A	-15V@0.70A	21.00W	150/150mVp-p	89%	SPD20-48-1515

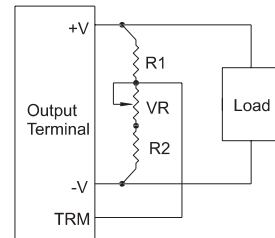
PIN ASSIGNMENTS

Single Output	Dual Output
1. +Vin	1. +Vin
2. -Vin	2. -Vin
3. CNT	3. CNT
4. TRM	4. -Vout
5. -Vout	5. No Pin
6. -Vout	6. COM
7. +Vout	7. No pin
8. +Vout	8. +Vout

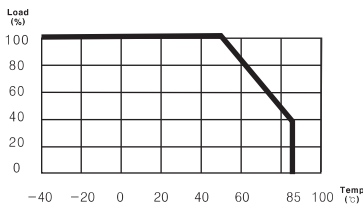
EXTERNAL PARTS

Model	Output Voltage	VR	R1	R2
SP20	3.3V	500Ω	1.0kΩ	560Ω
	5V	1.0kΩ	1.0kΩ	680Ω
	12V	1.0kΩ	3.9kΩ	680Ω
	15V	1.0kΩ	5.6kΩ	750Ω

TRIM METHOD



DERATING CURVE



DIMENSIONS

