

## Product Specification

Encapsulated DC-DC Converter

### Key Product Features

- Power Module for PCB Mountable
- Smaller size (2"x 1") with High Efficiency
- 2:1 Input range
- Regulated Output
- Low Ripple & Noise
- Screw Terminal For Optional
- Operating Temperature -40°C...+85°C (with derating)
- Remote ON/OFF Control
- Standard 2"x 1" Package and Pinout

## DPST30 Series 30 Watt



### Electrical Specification

Model No. (Single Output)	DPST30-24-2.5S	DPST30-24-3.3S	DPST30-24-5S	DPST30-24-24S	DPST30-24-15S	DPST30-24-24S
Max. Output Voltage	15W	19.8W	30W	30W	30W	30W
Input Voltage (V.D.C)	24V (18-36V)	24V (18-36V)	24V (18-36V)	24V (18-36V)	24V (18-36V)	24V (18-36V)
Output Voltage (V.D.C)	2.5V / 6000mA	3.3V / 6000mA	5V / 6000mA	12V / 6000mA	15V / 6000mA	24V / 6000mA
Efficiency	84%	87%	90%	88%	88%	88%
Capacitor Load (max)	6800uF	6800uF	4700uF	680uF	680uF	120uF

### Electrical Specification

Model No. (Single Output)	ST30-48-2.5S	ST30-48-3.3S	ST30-48-5S	ST30-48-24S	ST30-48-15S	ST30-48-24S
Max. Input Voltage	15W	19.8W	30W	30W	30W	30W
Input Voltage (V.D.C)	48V (36-75V)	48V (36-75V)	48V (36-75V)	48V (36-75V)	48V (36-75V)	48V (36-75V)
Output Voltage (V.D.C)	2.5V / 6000mA	3.3V / 6000mA	5V / 6000mA	12V / 6000mA	15V / 6000mA	24V / 6000mA
Efficiency	85%	88%	90%	88%	88%	88%
Capacitor Load (max)	6800uF	6800uF	4700uF	680uF	680uF	120uF

NOTES:  
 1- This product is not designed for use critical life support systems, equipment used in hazardous environment nuclear control systems or other such application which necessitate specific safety and regulatory standards other than the ones listed in this datasheet.  
 2- Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.  
 3- Safety approvals cover frequency 47-63 Hz.  
 4- The "natural convection" is about 20LFM but is not equal to still air (0 LFM).  
 5- It's recommended to add Varistor 14S471K at L / N input side in parallel.  
 6- Please refer to our PDF file "AC-DC Application" on our website : www.archcorp.com.tw

Product Specification						
Model No. (Single Output)	ST30-24-2.5S ST30-48-2.5S	ST30-24-3.3S ST30-48-3.3S	ST30-24-5S ST30-48-5S	ST30-24-24S ST30-48-24S	ST30-24-15S ST30-48-15S	ST30-24-24S ST30-48-24S
Max. Input Voltage	15W	19.8W	30W	30W	30W	30W
Input						
Input Filter	π type					
Output						
Voltage (V.D.C)	2.5V	3.3V	5V	12V	15V	24V
Trim Voltage Range	±10%					
Voltage Accuracy	±2%					
Current (mA) max	6000mA	6000mA	6000mA	2500mA	2000mA	1250mA
Line Regulation (LL-HL) (typ.)	±0.5%					
Load Regulation (10-100%) (typ.)	±1%					
Ripple	2.5S~5S:50mV / other: <0.2% Vout +40mV max (Vp-p)					
Noise	2.5S~5S:100mV / other: <0.2% Vout +50mV max (Vp-p)					
Minimum Load	0%	0%	0%	1%	1%	0.5%
Switching Frequency	400KHz					

Protection	
Over Power Protection	Work over 120% of rating and recovers automatically
Over Voltage Protection	Zener diode clamp
Short Circuit Protection	Current limit (automatic recovery)

Isolation	
Voltage	1600VDC
Resistance	10 <sup>8</sup> ohms
Capacitance	1000pF

Environment	
Operating Temperature	-40°C...+85°C (with derating)
Storage Temperature	-55°C...+105°C
Case Temperature	+105°C max
Temperature Coefficient	±0.02% Per°C
Humidity	95% RH
MTBF	>550,000h @ 25°C (MIL-HDBK-217F)

EMC	
EMI (Conducted & Radiated Emission)	EN 55011 class B (Radiation Class A for MTC30 A2 Series)
ESD	EB61000-4-2 air $\pm 8\text{kV}$ , Contact $\pm 4\text{kV}$
Radiated Immunity	EN61000-4-3 10V/m
Fast Transient	EN61000-4-4 $\pm 2\text{kV}$
Surge	EN61000-4-5 $\pm 1\text{kV}$
Conducted Immunity	EN61000-4-6 10 Vrms
PFMF	EN61000-4-8 30A/m
Dips	EN61000-4-11 30% 10ms
Interruption	EN61000-4-11 >95% 5000ms

Electrical Specification						
Model No. (Single Output)	ST30-24-5D	ST30-24-12D	ST30-24-15D	ST30-48-5D	ST30-48-12D	ST30-48-15D
Max. Input Voltage	24W	30W	30W	25W	30W	30W
Input Voltage (V.D.C)	24V (18-36V)	24V (18-36V)	24V (18-36V)	48V (18-36V)	48V (18-36V)	48V (18-36V)
Output Voltage (V.D.C)	$\pm 5\text{V} / \pm 2400\text{mA}$	$\pm 12\text{V} / \pm 1250\text{mA}$	$\pm 15\text{V} / \pm 1000\text{mA}$	$\pm 5\text{V} / \pm 2500\text{mA}$	$\pm 12\text{V} / \pm 1250\text{mA}$	$\pm 15\text{V} / \pm 1000\text{mA}$
Efficiency	85%	88%	88%	85%	88%	88%
Capacitor Load (max)	$\pm 820\mu\text{F}$	$\pm 150\mu\text{F}$	$\pm 120\mu\text{F}$	$\pm 820\mu\text{F}$	$\pm 150\mu\text{F}$	$\pm 120\mu\text{F}$

Product Specification				
Model No. (Single Output)	ST30-24-5D	ST30-48-5D	ST30-24-12D ST30-48-12D	ST30-24-15D ST30-48-15D
Max. Input Voltage	24W	25W	30W	30W
Input				
Input Filter	$\pi$ type			
Output				
Voltage (V.D.C)	$\pm 5\text{V}$	$\pm 12\text{V}$	15V	
Voltage Accuracy	$\pm 2\%$			
Current (mA) max	$\pm 2400\text{mA}$	$\pm 2500\text{mA}$	$\pm 1250\text{mA}$	$\pm 1000\text{mA}$
Line Regulation (LL-HL) (typ.)	$\pm 0.5\%$			
Load Regulation (10-100%) (typ.)	$\pm 1\%$			
Ripple	5D:60mV / other: <0.2% Vout+40mV max (Vp-p)			
Noise	5D:120mV / other: <0.5% Vout+50mV max (Vp-p)			
Minimum Load	0.5%	0.5%	0.5%	0.5%
Switching Frequency	4000KHz			

### Protection

Over Power Protection	Work over 120% of rating and recovers automatically
Over Voltage Protection	Zener diode clamp
Short Circuit Protection	Current limit (automatic recovery)

### Isolation

Voltage	1600VDC
Resistance	10 <sup>8</sup> ohms
Capacitance	1000pF

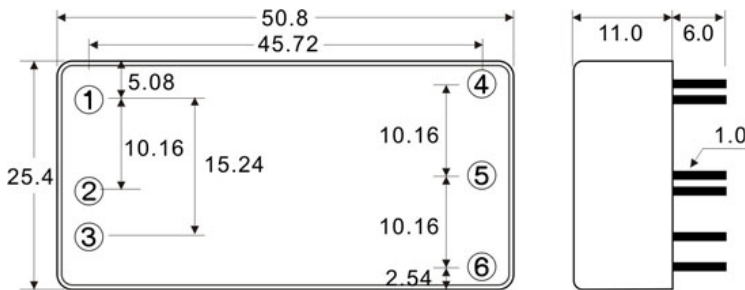
### Environment

Operating Temperature	-40°C...+85°C (with derating)
Storage Temperature	-55°C...+105°C
Case Temperature	+105°C max
Temperature Coefficient	±0.02% Per°C
Humidity	95% RH
MTBF	>550,000h @ 25°C (MIL-HDBK-217F)

### Mechanical Specifications

Dimensions	50.8(L)x25.4(W)x11.0(H) - Tolerance ±0.5mm
Case Material	Five-side shielded Auluminum with Non-Conductive base, Blaxk Anodize
Weight	33g
Cooling Method	Free air convection

### Mechanical Outline



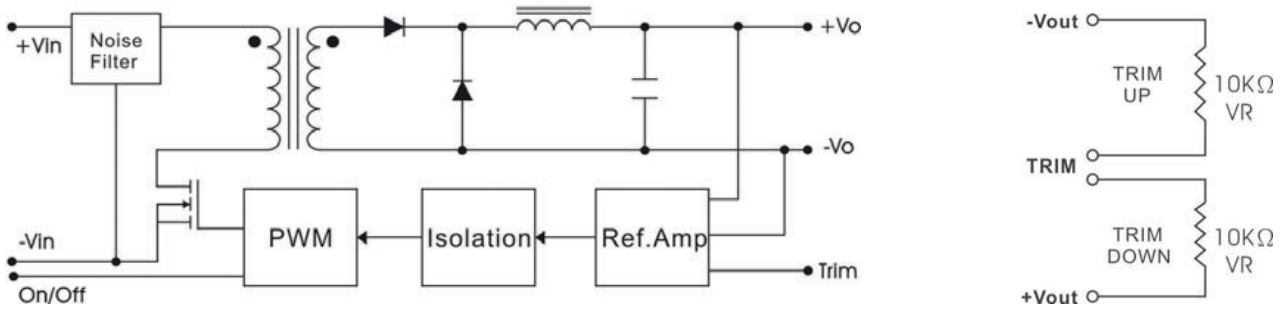
Tolerance ±0.5 mm

### Outline Pin Assignet

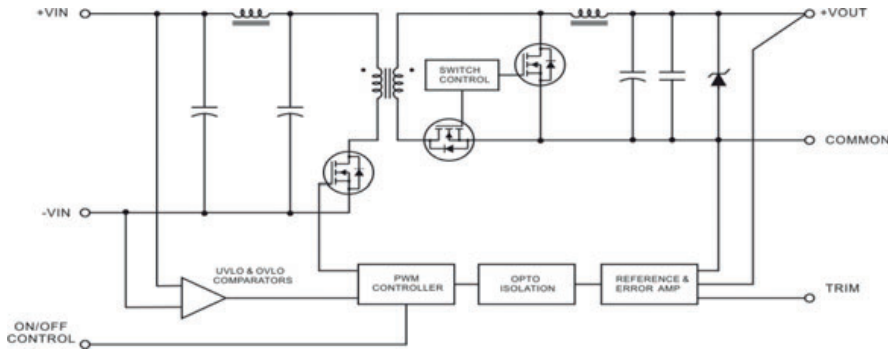
PIN#	Single	Dual	24Vout
1	CTRL	CTRL	CTRL
2	-DC IN	-DC IN	-DC IN
3	+DC IN	+DC IN	+DC IN
4	TRIM	-DC OUT	NC
5	-DC OUT	COMMON	-DC OUT
6	+DC OUT	+DC OUT	+DC OUT

**Block Diagram**

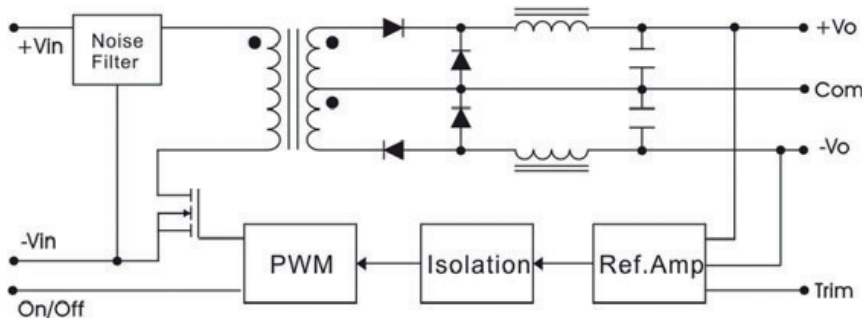
**Single Output**



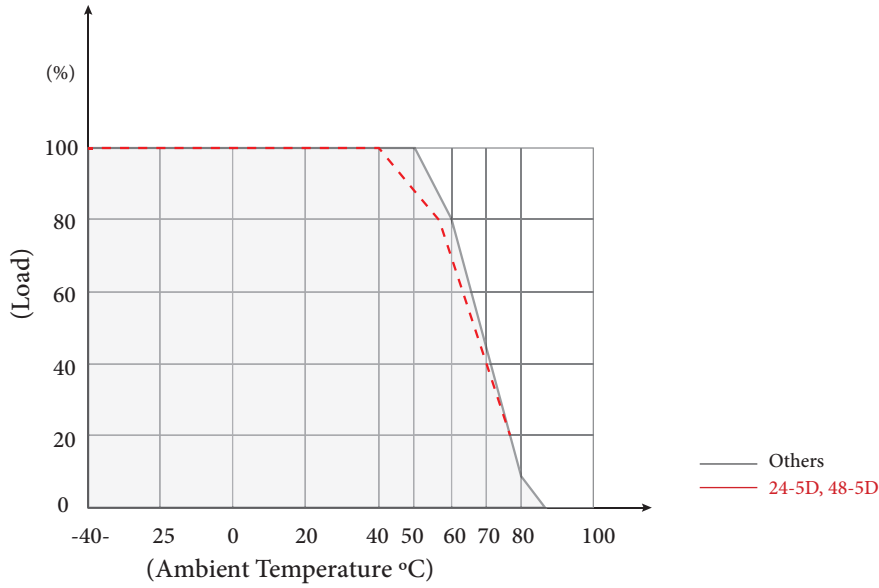
Output Voltage (V.D.C) : 12V, 15V, 24V



**Dual Output**

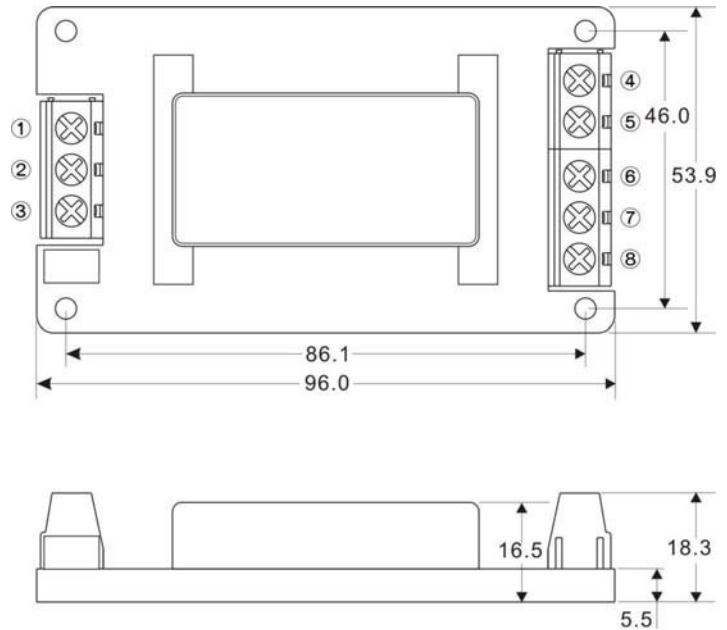


**Derating Curve**



**Screw terminal**

ST30-A2

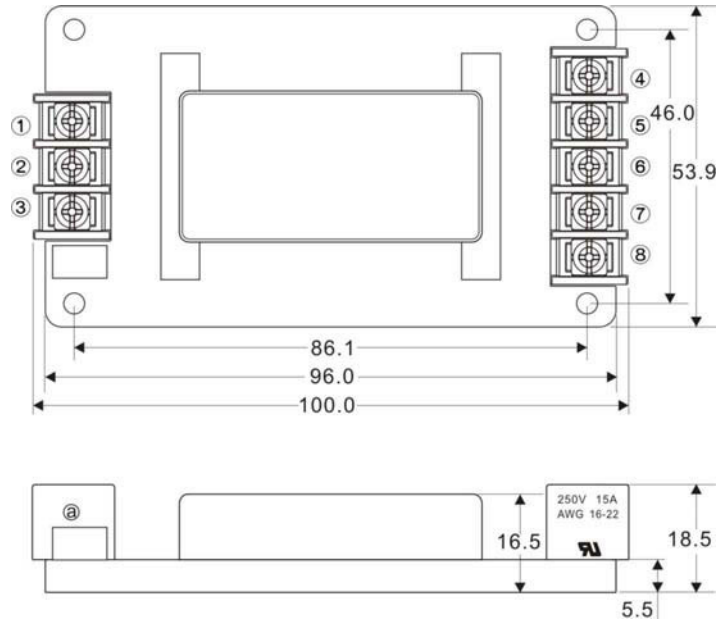


**Outline Pin Assignet**

PIN#	Single	Dual	24Vout
1	CTRL	CTRL	CTRL
2	-DC IN	-DC IN	-DC IN
3	+DC IN	+DC IN	+DC IN
4	TRIM	-DC OUT	NO CONNECT
5	-DC OUT	COM	-DC OUT
6	NO CONNECT	NO CONNECT	NO CONNECT
7	+DC OUT	+DC OUT	+DC OUT
8	NO CONNECT	NO CONNECT	NO CONNECT

**Screw terminal**

ST30-A5



**Outline Pin Assignent**

PIN#	Single	Dual	24Vout
1	CTRL	CTRL	CTRL
2	-DC IN	-DC IN	-DC IN
3	+DC IN	+DC IN	+DC IN
4	TRIM	-DC OUT	NO CONNECT
5	-DC OUT	COM	-DC OUT
6	NO CONNECT	NO CONNECT	NO CONNECT
7	+DC OUT	+DC OUT	+DC OUT
8	NO CONNECT	NO CONNECT	NO CONNECT