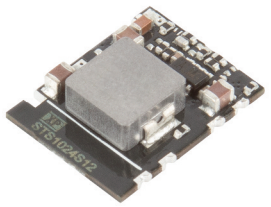
STS10 Series

Switching Regulator

XP Power

1.0 Amp

- Regulated single outputs from 1.2 to 15VDC
- Wide input range
- SMD-10 package
- Non-isolated
- Output voltage trim ±10%
- High efficiency up to 96%
- Class B conducted & radiated emissions with external components
- Short-circuit protection
- No heatsink required
- Remote On/Off
- Tape & reel package available
- -40°C to +105°C operation
- Full load to +65°C
- 3 year warranty



Dimensions:

STS10:
0.60 x 0.47 x 0.15" (15.20 x 11.80 x 3.6 mm)

The STS10 is a new series of innovative low cost DC-DC buck regulators. Based on SMD technology and high levels of automation the series offers many features including voltage trimming, remote on/off, continuous short circuit protection, regulation and high efficiency.

Models & Ratings

Input voltage VDC	Output voltage VDC	Output Current A	Maximum Capacitive Load	Efficiency at minimum input %	Efficency at maximum input %	Model[1]
5 V (3-5.5)	1.2	1.0 A	330 µF	90.5%	90.5%	STS1005S1V2
5 V (3-5.5 V)	1.5			92.0%	92.0%	STS1005S1V5
5 V (3-5.5 V)	1.8			92.5%	92.5%	STS1005S1V8
5 V (3.8-5.5 V)	2.5			94.5%	94.0%	STS1005S2V5
24 V (4.6-36 V)	1.2			87.0%	72.0%	STS1024S1V2
24 V (4.6-36 V)	1.5			89.0%	76.0%	STS1024S1V5
24 V (4.6-36 V)	1.8			90.5%	79.0%	STS1024S1V8
24 V (4.6-36 V)	2.5			92.5%	83.0%	STS1024S2V5
24 V (4.75-36 V)	3.3			94.0%	86.5%	STS1024S3V3
24 V (6.5-36 V)	5.0			95.5%	89.5%	STS1024S05
24 V (9-36 V)	6.5			94.5%	90.0%	STS1024S6V5
24 V (12-36 V)	9.0			95.5%	92.0%	STS1024S09
24 V (15-36 V)	12.0			95.0%	93.0%	STS1024S12
24 V (18-36 V)	15.0			96.0%	94.0%	STS1024S15

Notes

1. For tape & reel add "-TR", e.g. STS1005S1V5-TR. 500 pcs per reel.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	3	5	5.5	VDC	
	4.6	24	36		
Input Surge			6	VDC for 100 ms	5 V input
			40		24 V input
Input Current - No Load		0.4/1.5		mA	5 V/24 V input
- Full Load		700/900			5 V/24 V input
Input Current - Remote On/Off			0.3/0.8	mA	5 V/24 V input, idle current
Remote On/Off	ON: Connect pin 10 to voltage of 2-4 V, Logic high OFF: Short pin 10 to pin 9 (0-0.4 V), Logic low				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	1.2		15	VDC	See Models and Ratings table
Initial Set Accuracy			±2.0	%	
Minimum Load				A	No minimum load required
Line Regulation			±0.2	%	
Load Regulation			±0.6	%	To 100% load from 10%
Transient Response <4V			±5	%	Maximum deviation recovery within 250 µs at normal Vin for 50% step load change from 50% to 100% load
>4V			±3		
Ripple & Noise		50		mV pk-pk	5 V: 20 MHz bandwidth
		75			24 V: 20 MHz bandwidth
Short Circuit Protection					Continuous, with auto recovery
Temperature Coefficient			0.02	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency			96	%	See Models and Ratings table
Isolation: Input to Output					No isolation
Switching Frequency		1.2/0.41		MHz	5 V/24 V input
Mean Time Between Failure	3.5			MHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.022 (1.4)		lb (g)	
Moisture Sensitivity Level	Level 1				IPC/JEDEC J-STD-020D.1

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+105	°C	See Derating Curve.
Storage Temperature	-55		+125	°C	
Humidity			95	%RH	Non-condensing
Cooling					Natural convection (>30 LFM)
Lead-Free Reflow Solder Process	260 °C max, 1.5 mm from case, 10 s max. IPC/JEDEC J-STD-020D.1				