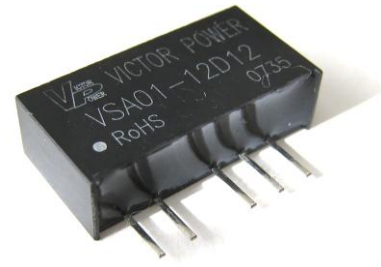




VSA01 Series

1 Watts



- 1W SINGLE AND DUAL OUTPUT
- FIXED INPUT ISOLATED & UNREGULATED
- 1K VDC ISOLATION VOLTAGE
- UTRALMINIATURE SIP PACKAGE
- LOW COST
- SHORT LEAD TIME

U.S.A

RoHS

FEATURES

- High Efficiency up to 81%
- Small Footprint
- SIP Package Styles
- Industry Standard Pin Configuration
- UL94-V0 Package
- No Heatsink Required
- 1K VDC Isolation
- High Power Density
- Temperature Range: -40°C --+85°C
- No External Component Required
- RoHS Compliance

APPLICATIONS

The VSA01 Series are specially designed for applications where a high isolation voltage power supplies.

These products apply to:

- 1) Where the voltage of the input power supply is 2:1 input range.
- 2) Where isolation is necessary between input and output (isolation 1K VDC).
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

Requirement on Output Load

To ensure this module operate efficiently and reliably, a minimum load is specified for this kind of DC/DC converter in addition to a maximum load (namely full load). During operation, make sure the specified range of input voltage is not exceeded, the minimum output load is not less than **10%** Of the full load, and that this product should never be operated under no load!!! If the actual load is less below the specified minimum load, the output ripple of this type of DC/DC converter will increase drastically and at the same time efficiency & reliability of the circuit will decrease deeply .If the actual output power from the load in your circuit is very small, please connect a resistor with proper resistance at the output end to in parallel to increase the load, or use our company's other products with a lower rated output power.

Input

Output

Part Number	Voltage (VDC)		Voltage (VDC)	Current (mA)		Efficiency (% Typ)	Package Style
	Nominal	Range		Max	Min		
	VSA01-03S33	3.3		3.0~3.6	3.3		
VSA01-05S05	5	4.5~5.5	5	200	20	70	SIP
VSA01-05S09	5	4.5~5.5	9	111	12	78	SIP
VSA01-05S12	5	4.5~5.5	12	83	9	78	SIP
VSA01-05S15	5	4.5~5.5	15	67	7	80	SIP
VSA01-12S33	3.3	3.0~3.6	3.3	303	31	72	SIP
VSA01-12S05	12	10.8~13.2	5	200	20	71	SIP
VSA01-12S09	12	10.8~13.2	9	111	12	76	SIP
VSA01-12S12	12	10.8~13.2	12	83	9	78	SIP
VSA01-12S15	12	10.8~13.2	15	67	7	79	SIP
VSA01-15S05	15	13.5~16.5	15	67	7	75	SIP
VSA01-24S05	24	21.6~26.4	5	200	20	73	SIP
VSA01-24S09	24	21.6~26.4	9	111	12	78	SIP
VSA01-24S12	24	21.6~26.4	12	83	9	78	SIP
VSA01-24S15	24	21.6~26.4	15	67	7	79	SIP
VSA01-05D05	5	4.5~5.5	±5	±100	±10	72	SIP
VSA01-05D09	5	4.5~5.5	±9	±56	±6	75	SIP
VSA01-05D12	5	4.5~5.5	±12	±42	±5	78	SIP
VSA01-05D15	5	4.5~5.5	±15	±33	±4	79	SIP
VSA01-12D05	12	10.8~13.2	±5	±100	±10	74	SIP
VSA01-12D09	12	10.8~13.2	±9	±56	±6	76	SIP
VSA01-12D12	12	10.8~13.2	±12	±42	±5	79	SIP
VSA01-12D15	12	10.8~13.2	±15	±33	±4	80	SIP
VSA01-24D05	24	21.6~26.4	±5	±100	±10	74	SIP
VSA01-24D09	24	21.6~26.4	±9	±56	±6	76	SIP
VSA01-24D12	24	21.6~26.4	±12	±42	±5	80	SIP
VSA01-24D15	24	21.6~26.4	±15	±33	±4	81	SIP

VICTOR POWER TECHNOLOGIES



Tel: (408) 844 - 8782
 Toll: (888) 271 - 8181
 Fax: (408) 844 - 8783
 sales@victorpower.com

ISOLATION SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	1000			VDC
Isolation resistance	Test at 500VDC	1000			MΩ

OUTPUT SPECIFICATIONS

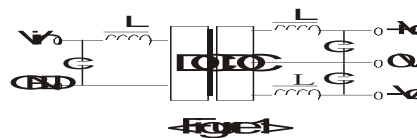
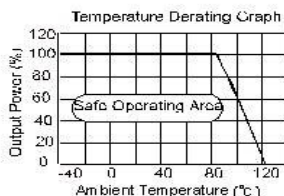
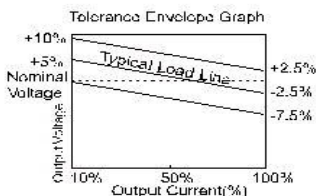
Item	Test conditions	Min	Typ	Max	Units
Output power		0.1			W
Line regulation	For V_{in} change of 1%			1.2	%
Load regulation	10% to 100% load (5V Output)		12.8	15	%
	10% to 100% load (9V Output)		8.3	15	%
	10% to 100% load (12V Output)		6.3	15	%
	10% to 100% load (15V Output)		6.3	15	%
Output voltage accuracy	See tolerance envelope graph				
Temperature drift	100% full load			0.03	%/°C
Output ripple	20MHz Bandwidth		50	75	mVp-p
Noise	20MHz Bandwidth		75	150	mVp-p
Switching frequency	Full load, nominal input voltage	100			KHz

Note:
 1. All specifications measured at $T_A=25^\circ\text{C}$, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
 2. See below recommended circuits for more details.

COMMON SPECIFICATION

Short circuit protection	1 second
Temperature rise at full load	25°C MAX, 15°C TYP
Cooling	Free air convection
No-load power consumption	10% nominal power (typical)
Operating temperature range	-40°C~+85°C
Storage temperature range	-55°C ~+125°C
Lead temperature*	300°C (1.5mm from case for 10 seconds)
Storage humidity range	≤ 95%
Case material	Plastic (UL94-V0)
MTBF	>3,500,000 hours

TYPICAL CHARACTERISTICS



<Figure 2>

Overload Protection

Under normal operating conditions, the output circuit of these products has no protection against over-current and short-circuits. The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit.

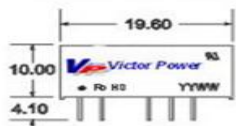
Output Voltage Regulation and Over-voltage Protection Circuit

The simplest device for output voltage regulation, over-voltage and over-current protection is a linear voltage regulator with overheat protection that is connected to the input or output end in series (see Figure 2).

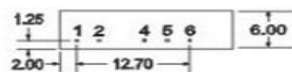
FOOTPRINT DETAILS

PIN	1	2	4	5	6
SINGLE	+Vin	-Vin	-Vout	No Pin	+Vout
DUAL	+Vin	-Vin	-Vout	Common	+Vout

OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT



Side View



Bottom View



External Capacitor Table

V_{in}	External capacitor	V_{out}	External capacitor
5VDC	4.7uF	5VDC	10uF
12VDC	2.2uF	9VDC	4.7uF
24VDC	1uF	12VDC	2.2uF
--	--	15VDC	1uF

The single output information will be available upon request.