

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



V1 Series

1W Unregulated Single & Dual output

Features

- 7 Pin SIL / 14 Pin DIL Package
- 1000 VDC Isolation
- Up to 6000 VDC Isolation
- Low Ripple and Noise
- Efficiency up to 85%
- -40 ~ 85°C Operation Temperature Range
- Non-Conductive Black Plastic Case



The V1 series is a family of cost effective 0.5~1W single & dual output DC-DC converters. These converters achieve low cost and ultra-miniature SIP 7 pin or DIP 14 pin size without compromising performance or field reliability. Devices are encapsulated using flame retardant resin. The models operate from input voltage of 5, 9, 12, 18, 24 Vdc with output voltage of 3.3, 5, 9, 12, 15, 18, 24, ± 3.3 , ± 5 , ± 9 , ± 12 , ± 15 , ± 18 , ± 24 Vdc. High performance features include 1000Vdc input/output isolation, high efficiency operation and output voltage accuracy of $\pm 5\%$ maximum. Standard features include an input range of $\pm 10\%$ tolerance and low output noise and ripple.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

OUTPUT SPECIFICATIONS	
Voltage Accuracy	$\pm 3\%$
Line Regulation	$\pm 1.2\%$ / Per 1% Vin Change
Load Regulation	(From 20% to 100% Load) $\pm 10\%$
Ripple & Noise (20 Mhz bandwidth)	60mV pk-pk
Current Limiting	110% of max. Iout
Short Circuit Protection	Indefinite(Automatic Recovery) 1sec
Temperature Coefficient	$\pm 0.02\%/^{\circ}\text{C}$
Capacitor Load	See Table

INPUT SPECIFICATIONS	
Voltage Range	$\pm 10\%$
Max. Input Current	See Table
No-Load Input Current	See Table
Input Filter	Capacitor
Input Reflected Ripple rms thru 12uH inductor, 5Hz to 20MHz	20 mA rms

PHYSICAL SPECIFICATIONS	
Case Material	Non-conductive Black Plastic(UL94V-0 rated)
Base Material	Epoxy encapsulayed(UL94V-0 rated)
Pin Material	Alloy42 Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	2.7g
Dimensions	
SIP Case	0.24"x0.46"x0.38"
DIP Case	0.50"x0.40"x0.27"

EMI SPECIFICATIONS	
Radiated Emissions	EN55022 CLASS B CE MEARK

GENERAL SPECIFICATIONS	
Efficiency	See table
I/O Isolation Voltage	
I/O 1 min(flash tested for 1 sec)	1000~6000Vdc
Case/Input&Output	1000Vdc
I/O Isolation Capacity	60 pF
I/O Isolation Resistance	1000M Ohm
Switching Frequency	Variable 50KHz
Humidity	95% rel H
Reliability Calculated MTBF	>2.01 Mhrs
Safety Standard	IEC 60950-1:2001 /EN60950/UL60950
Safety Approvals	

ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C
Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

ABSOLUTE MAXIMUM RATINGS	
Input Voltage	
3R3 Modes	-0.7~5 Vdc
5 Modes	-0.7~7 Vdc
12 Modes	-0.7~15 Vdc
24 Modes	-0.7~28 Vdc
48 Modes	-0.7~54 Vdc
Operating Amb. Temperature	-40°C~85°C
Case Temperature	100°C
Storage Temperature	-40°C~125°C
I/O Isolation Voltage 1 minutes (flash tested for 1 sec.)	1000 Vdc
Short Circuit Protection	(Limited Max.) 1 Sec
Lead Soldering Temperature 1.5mm from case 10 sec.	260°C

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MODEL SELECTION GUIDE

MODEL NUMBER	Voltage Range	INPUT		OUTPUT		EFFICIENCY @FL(%)	Capacitor Load(μF)
		No-Load Current	Full Load Current	Voltage(Vdc)	Current(mA)		
V1-053R3S	5	30	307	±3.3	151.5	65	100
V1-0505S	5	30	270	±5	100	74	100
V1-057R2S	5	30	259	±7.2	69.44	77	100
V1-0509S	5	30	256	±9	55.55	78	100
V1-0512S	5	30	256	±12	41.67	78	100
V1-0515S	5	30	250	±15	33.33	80	100
V1-0518S	5	30	253	±18	27.77	79	100
V1-0524S	5	30	250	±24	20.83	80	100
V1-123R3S	12	20	126	±3.3	151.5	66	100
V1-1205S	12	20	111	±5	100	75	100
V1-127R2S	12	20	109	±7.2	69.44	76	100
V1-1209S	12	20	109	±9	55.55	76	100
V1-1212S	12	20	106	±12	41.67	78	100
V1-1215S	12	20	104	±15	33.33	80	100
V1-1218S	12	20	104	±18	27.77	80	100
V1-1224S	12	20	109	±24	20.83	76	100
V1-243R3S	24	10	61	±3.3	151.5	68	100
V1-2405S	24	10	56	±5	100	74	100
V1-247R2S	24	10	54	±7.2	69.44	76	100
V1-2409S	24	10	54	±9	55.55	76	100
V1-2412S	24	10	53	±12	41.67	78	100
V1-2415S	24	10	53	±15	33.33	78	100
V1-2418S	24	10	53	±18	27.77	78	100
V1-2424S	24	10	53	±24	20.83	78	100
V1-483R3S	48	6	34	±3.3	151.5	60	100
V1-4805S	48	6	30	±5	100	70	100
V1-487R2S	48	6	30	±7.2	69.44	70	100
V1-4809S	48	6	29	±9	55.55	72	100
V1-4812S	48	6	28	±12	41.67	74	100
V1-4815S	48	6	28	±15	33.33	74	100
V1-4818S	48	6	29	±18	27.77	72	100
V1-4824S	48	6	30	±24	20.83	70	100
V1-053R3D	5	30	307	±3.3	151.5	65	100
V1-0505D	5	30	270	±5	100	74	100
V1-057R2D	5	30	259	±7.2	69.44	77	100
V1-0509D	5	30	256	±9	55.55	78	100
V1-0512D	5	30	256	±12	41.67	78	100
V1-0515D	5	30	250	±15	33.33	80	100
V1-0518D	5	30	256	±18	27.77	78	100
V1-0524D	5	30	266	±24	20.83	75	100
V1-123R3D	12	20	126	±3.3	151.5	66	100
V1-1205D	12	20	111	±5	100	75	100
V1-127R2D	12	20	115	±7.2	69.44	72	100
V1-1209D	12	20	111	±9	55.55	75	100
V1-1212D	12	20	106	±12	41.67	78	100
V1-1215D	12	20	106	±15	33.33	78	100
V1-1218D	12	20	111	±18	27.77	75	100
V1-1224D	12	20	111	±24	20.83	75	100
V1-243R3D	24	10	62	±3.3	151.5	67	100
V1-2405D	24	10	57	±5	100	72	100
V1-247R2D	24	10	59	±7.2	69.44	70	100
V1-2409D	24	10	55	±9	55.55	75	100
V1-2412D	24	10	53	±12	41.67	78	100
V1-2415D	24	10	55	±15	33.33	75	100
V1-2418D	24	10	57	±18	27.77	72	100
V1-2424D	24	10	59	±24	20.83	70	100

Suffix "H" means 3 Kvdc isolation
 Suffix "H5" means 5.2 Kvdc isolation

Suffix "H2" means 2 Kvdc isolation
 Suffix "H6" means 6 Kvdc isolation

Suffix "H4" means 4 Kvdc isolation

The models listed above is just for standard type. If you need the special specification product, please contact our service member by telephone presented in shortform cover or e-mail to : sales@motien.com.tw

V1 - 1W Unregulated Single & Dual output

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		No-Load Current	Full Load Current	Voltage(Vdc)	Current(mA)		
V1-053R3SS	5	30	267	3.3	303	75	100
V1-0505SS	5	30	256	5	200	78	100
V1-057R2SS	5	30	270	7.2	138.9	74	100
V1-0509SS	5	30	267	9	111.1	75	100
V1-0512SS	5	30	263	12	83.3	76	100
V1-0515SS	5	30	263	15	66.7	76	100
V1-0518SS	5	30	267	18	55.6	75	100
V1-0524SS	5	30	278	24	41.7	72	100
V1-123R3SS	12	20	113	3.3	303	74	100
V1-1205SS	12	20	113	5	200	74	100
V1-127R2SS	12	20	113	7.2	138.9	74	100
V1-1209SS	12	20	111	9	111.1	75	100
V1-1212SS	12	20	108	12	83.3	77	100
V1-1215SS	12	20	106	15	66.7	78	100
V1-1218SS	12	20	106	18	55.6	78	100
V1-1224SS	12	20	113	24	41.7	75	100
V1-243R3SS	24	10	56	3.3	303	75	100
V1-2405SS	24	10	54	5	200	77	100
V1-247R2SS	24	10	56	7.2	138.9	75	100
V1-2409SS	24	10	56	9	111.1	75	100
V1-2412SS	24	10	53	12	83.3	78	100
V1-2415SS	24	10	53	15	66.7	78	100
V1-2418SS	24	10	53	18	55.6	78	100
V1-2424SS	24	10	53	24	41.7	78	100
V1-483R3SS	48	6	29	3.3	303	72	100
V1-4805SS	48	6	29	5	200	72	100
V1-487R2SS	48	6	29	7.2	138.9	72	100
V1-4809SS	48	6	28	9	111.1	74	100
V1-4812SS	48	6	28	12	83.3	74	100
V1-4815SS	48	6	28	15	66.7	75	100
V1-4818SS	48	6	29	18	55.6	72	100
V1-4824SS	48	6	30	24	41.7	70	100
V1-053R3DS	5	30	267	3.3	303	75	100
V1-0505DS	5	30	256	5	200	78	100
V1-057R2DS	5	30	267	7.2	138.9	75	100
V1-0509DS	5	30	267	9	111.1	75	100
V1-0512DS	5	30	263	12	83.3	76	100
V1-0515DS	5	30	263	15	66.7	76	100
V1-0518DS	5	30	267	18	55.6	75	100
V1-0524DS	5	30	278	24	41.7	72	100
V1-123R3DS	12	20	113	3.3	303	74	100
V1-1205DS	12	20	113	5	200	74	100
V1-127R2DS	12	20	113	7.2	138.9	74	100
V1-1209DS	12	20	111	9	111.1	75	100
V1-1212DS	12	20	108	12	83.3	77	100
V1-1215DS	12	20	106	15	66.7	78	100
V1-1218DS	12	20	106	18	55.6	78	100
V1-1224DS	12	20	111	24	41.7	75	100
V1-243R3DS	24	10	56	3.3	303	75	100
V1-2405DS	24	10	54	5	200	77	100
V1-247R2DS	24	10	56	7.2	138.9	75	100
V1-2409DS	24	10	56	9	111.1	75	100
V1-2412DS	24	10	53	12	83.3	78	100
V1-2415DS	24	10	53	15	66.7	78	100
V1-2418DS	24	10	53	18	55.6	78	100
V1-2424DS	24	10	53	24	41.7	78	100

Suffix "H" means 3 Kvdc isolation
 Suffix "H5" means 5.2 Kvdc isolation

Suffix "H2" means 2 Kvdc isolation
 Suffix "H6" means 6 Kvdc isolation

Suffix "H4" means 4 Kvdc isolation

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PART NUMBER STRUCTURE

V1 - 12 05 SS H

Series Name

Input Voltage Range

- 5 - 5V
- 9 - 9V
- 12 - 12V
- 15 - 15V
- 24 - 24V
- 48 - 48V

Nominal Output Voltage

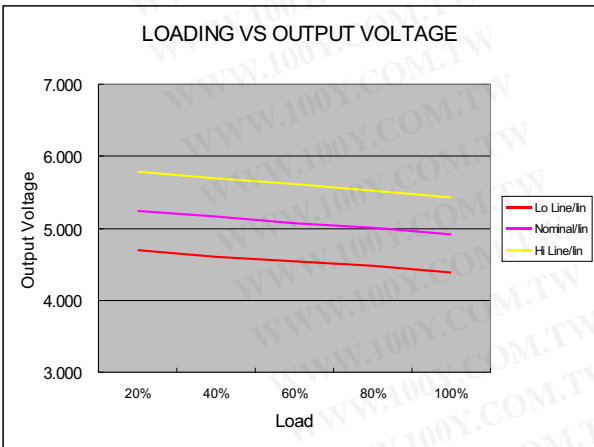
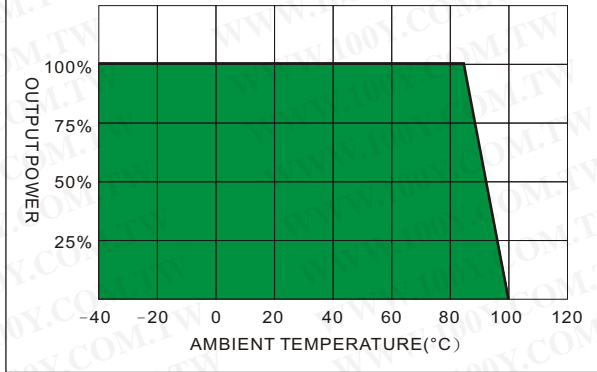
- 3R3 - 3.3V
- 5 - 5V
- 7R2 - 7.2V
- 9 - 9V
- 12 - 12V
- 15 - 15V
- 18 - 18V
- 24 - 24V

Case & Output Type

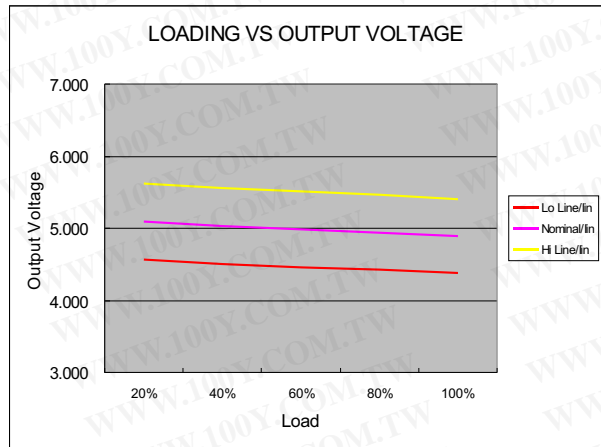
- S - SIP Case, Dual Output
- D - DIP Case, Dual Output
- SS - SIP Case, Single Output
- DS - DIP Case, Single Output

3KVDC Isolation
Optional, if no "H" suffix mean 1 KVDC Isolation

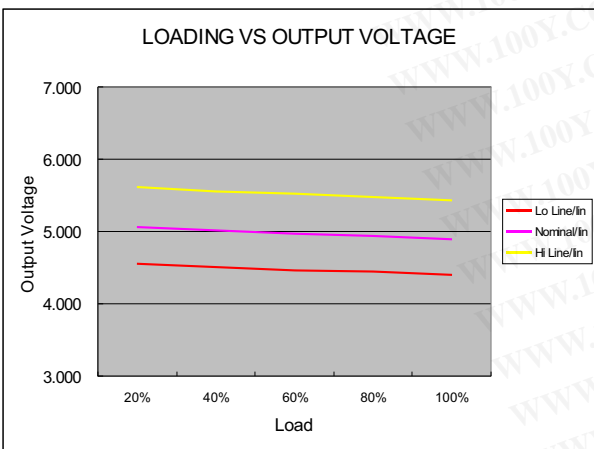
Derating Curve



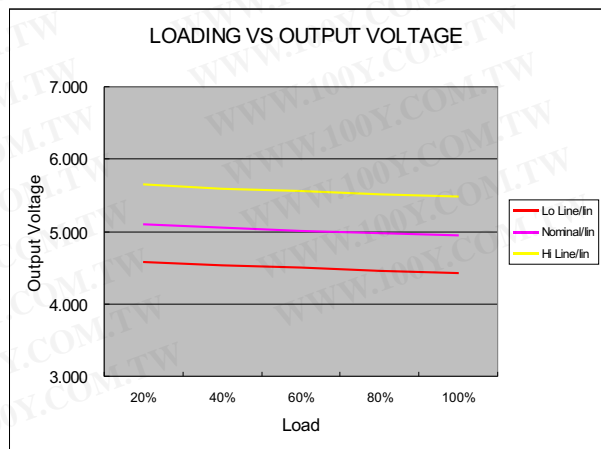
05 Models



12 Models



24 Models



48 Models

V1 - 1W Unregulated Single & Dual output

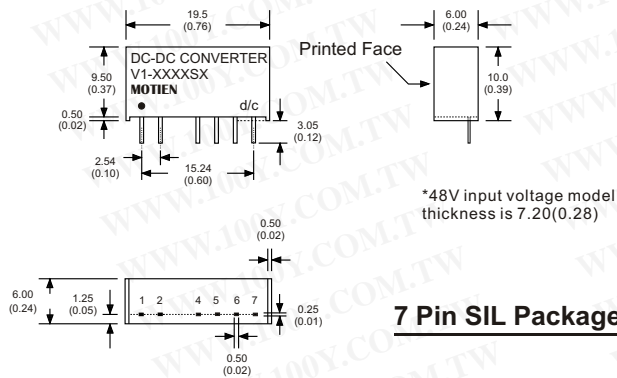


NOTE

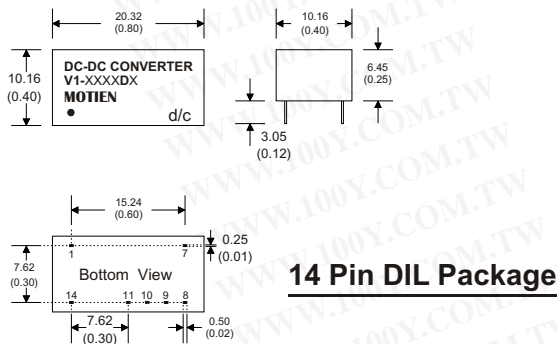
1. Maximum value at nominal input voltage and full load.
2. Typical value at nominal input voltage and full load.
3. Test by normal input voltage and constant resistor load.
4. Ripple/Noise measured over a 20MHz bandwidth.
5. Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.

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MECHANICAL SPECIFICATIONS



PIN CONNECTIONS				
PIN NUMBER	SINGLE	DUAL	SINGLE-H	DUAL-H
1	+V Input	+V Input	+V Input	+V Input
2	-V Input	-V Input	-V Input	-V Input
4	-V Output	-V Output	N.P.	N.P.
5	N.P.	Common	-V Output	-V Output
6	+V Output	+V Output	N.P.	Common
7	N.P.	N.P.	+V Output	+V Output



PIN CONNECTIONS				
PIN NUMBER	SINGLE	DUAL	SINGLE-H	DUAL-H
1	-V Input	-V Input	-V Input	-V Input
7	N.C.	N.C.	N.C.	N.C.
8	N.P.	Common	+V Output	+V Output
9	+V Output	+V Output	N.P.	Common
10	N.P.	N.P.	-V Output	-V Output
11	-V Output	-V Output	N.P.	N.P.
14	+V Input	+V Input	+V Input	+V Input

Notes : All dimensions are typical in millimeters (inches).
 Tolerance x.xx = ±0.25 (±0.01)