

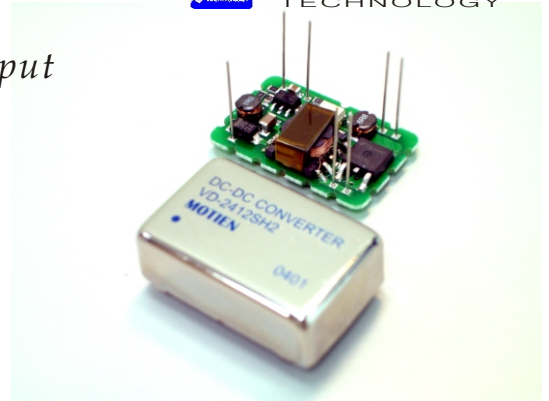
VD 5W Series

5W 2:1 Regulated Single & Dual output



Features

- Wide 2:1 Input Range
- Full SMD Technology
- 1500 VDC Isolation, Up to 3500 VDC
- Continuous Short Circuit Protection
- Efficiency up to 85%
- -40 ~ 85°C Operation Temperature Range



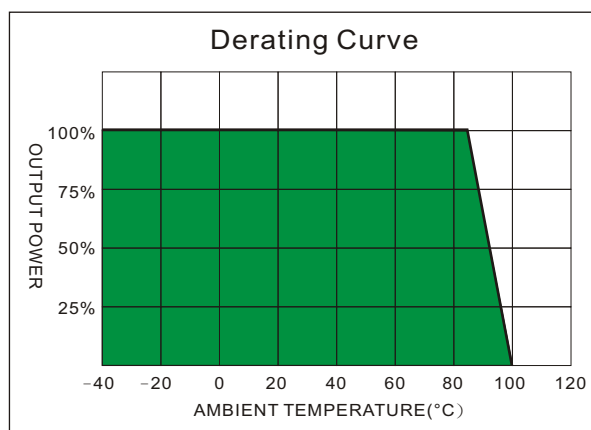
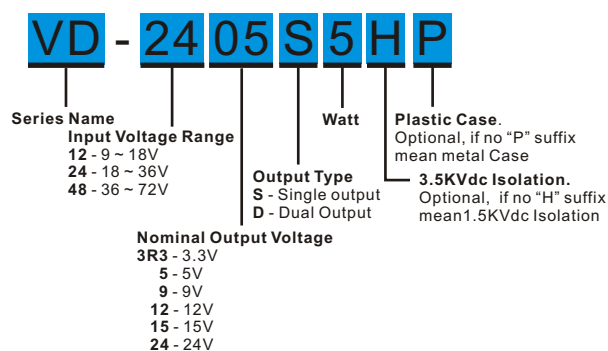
The VD series is a family of cost effective 1.5~6W single & dual output DC-DC converters. These converters combine nickel-coated copper package in a 24-pin DIL compatible case with high performance features such as 1500 VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation. Wide range devices operate over 2:1 input voltage range providing stable output voltage. Devices are encapsulated using flame retardant resin. Input voltages of 12, 24 and 48 with output voltage of 3.3, 5, 12, 15, 18, 24, ± 3.3 , ± 12 , ± 15 , ± 18 and ± 24 Vdc. High performance features include high efficiency operation up to 85% and output voltage accuracy of $\pm 1\%$ maximum. Standard features include an input range of $\pm 10\%$ tolerance and low output noise and ripple.

All specifications typical at $T_a=25^\circ\text{C}$, nominal input voltage and full load unless otherwise specified

OUTPUT SPECIFICATIONS		GENERAL SPECIFICATIONS	
Voltage Accuracy	$\pm 1\%$	Efficiency	See table
Line Regulation	$\pm 0.5\%$	I/O Isolation Voltage	
Load Regulation	$\pm 0.5\%$	I/O 1 min(flash tested for 1 sec)	1500Vdc
Ripple & Noise (20 Mhz bandwidth)	60mV pk-pk	Case/Input&Output	1000Vdc
Current Limiting	120% of max. Iout	I/O Isolation Capacity	470 pF
Short Circuit Protection	Indefinite(Automatic Recovery)	I/O Isolation Resistance	1000M Ohm
Temperature Coefficient	$\pm 0.02\%/^\circ\text{C}$	Switching Frequency	Fixed 266KHz
Capacitive Load	See table	Humidity	95% rel H
		Reliability Calculated MTBF	>1.121 Mhrs
		Safety Standard	IEC 60950-1:2001
		Safety Approvals	
INPUT SPECIFICATIONS		ENVIRONMENT SPECIFICATIONS	
Voltage Range	See table	Operating Temperature	-40°C~85°C
Max. Input Current	See table	Case Temperature	100°C
No-Load Input Current	See table	Storage Temperature	-40°C~125°C
Input Filter	π type	Cooling	Nature Convection
Input Reflected Ripple rms thru 12uH inductor, 5Hz to 20MHz	35mA rms		
PHYSICAL SPECIFICATIONS		These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.	
Case Material	Nickel-coated Copper	ABSOLUTE MAXIMUM RATINGS	
Base Material	Epoxy encapsulated(UL94V-0 rated)	Input Voltage	
Pin Material	$\varnothing 0.5\text{mm}$ Brass Solder-coated	12 Modes	-0.7~24 Vdc
Potting Material	Epoxy (UL94V-0 rated)	24 Modes	-0.7~40 Vdc
Weight	17.0g	48 Modes	-0.7~75 Vdc
Dimensions	1.28"x0.84"x0.41"	Operating Amb. Temperature	-40°C~85°C
	1.25"x0.8"x0.4"(Plastic Case)	Case Temperature	100°C
		Storage Temperature	-40°C~125°C
		Lead Soldering Temperature	260°C
		1.5mm from case 10 sec.	
EMI SPECIFICATIONS			
Radiated Emissions			

The information and specifications contained in this data sheet are believed to be correct at time of publication. However, **MOTIEN Technologies** accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice. No rights under any patent accompany the sale of any such product(s) or information contained herein.

PART NUMBER STRUCTURE



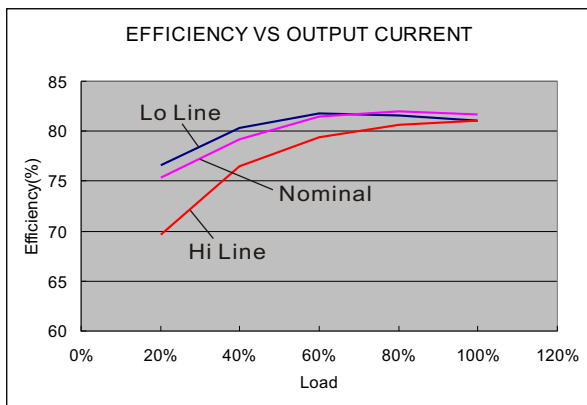
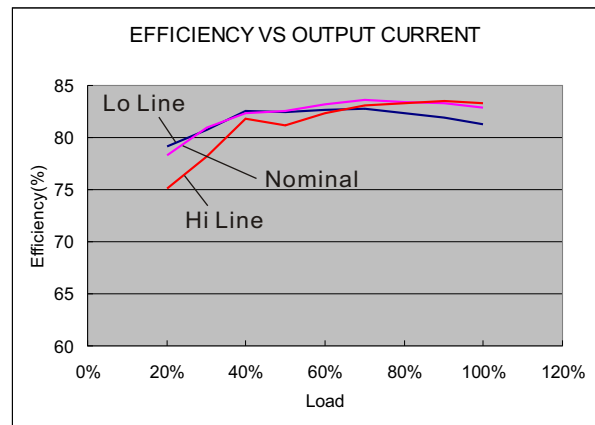
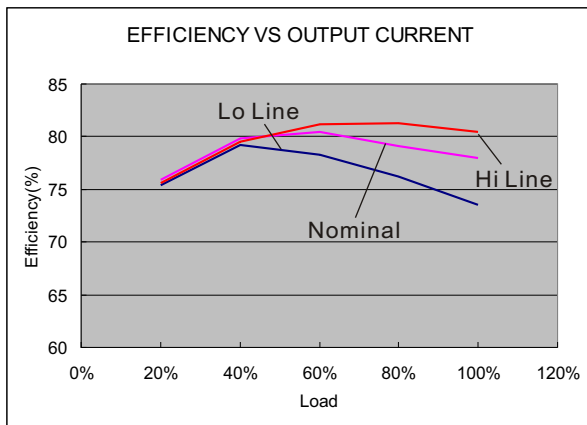
MODEL SELECTION GUIDE

MODEL NUMBER	Voltage Range (Vdc)	INPUT		OUTPUT		EFFICIENCY @FL(%)	Capacitor Load(μF)
		No-Load Current	Full Load Current	Voltage(Vdc)	Current(mA)		
VD-123R3S5	9-18	30	490	3.3	1300	73	1000
VD-1205S5	9-18	30	542	5.0	1000	77	1000
VD-1209S5	9-18	30	534	9.0	555	78	680
VD-1212S5	9-18	30	514	12.0	417	81	330
VD-1215S5	9-18	30	520	15.0	333	80	220
VD-1224S5	9-18	30	520	24.0	208	80	68
VD-123R3D5	9-18	30	565	±3.3	±750	73	±680
VD-1205D5	9-18	30	542	±5.0	±500	77	±330
VD-1209D5	9-18	30	520	±9.0	±278	80	±220
VD-1212D5	9-18	30	520	±12.0	±208	80	±100
VD-1215D5	9-18	30	528	±15.0	±167	79	±47
VD-1224D5	9-18	30	520	±24.0	±104	80	±33
VD-243R3S5	18-36	20	239	3.3	1300	75	3300
VD-2405S5	18-36	20	261	5.0	1000	80	1000
VD-2409S5	18-36	20	254	9.0	555	82	680
VD-2412S5	18-36	20	261	12.0	417	80	330
VD-2415S5	18-36	20	255	15.0	333	82	220
VD-2424S5	18-36	20	255	24.0	208	82	100
VD-243R3D5	18-36	20	275	±3.3	±750	75	±1000
VD-2405D5	18-36	20	267	±5.0	±500	78	±330
VD-2409D5	18-36	20	251	±9.0	±278	83	±330
VD-2412D5	18-36	20	261	±12.0	±208	80	±100
VD-2415D5	18-36	20	261	±15.0	±167	80	±47
VD-2424D5	18-36	20	261	±24.0	±104	80	±33
VD-483R3S5	36-72	12	120	3.3	1300	75	1000
VD-4805S5	36-72	12	131	5.0	1000	80	1000
VD-4809S5	36-72	12	127	9.0	555	82	470
VD-4812S5	36-72	12	131	12.0	417	80	330
VD-4815S5	36-72	12	126	15.0	333	83	220
VD-4824S5	36-72	12	126	24.0	208	83	100
VD-483R3D5	36-72	12	142	±3.3	±750	73	±1000
VD-4805D5	36-72	12	132	±5.0	±500	79	±330
VD-4809D5	36-72	12	132	±9.0	±278	79	±330
VD-4812D5	36-72	12	131	±12.0	±208	80	±100
VD-4815D5	36-72	12	131	±15.0	±167	80	±47
VD-4824D5	36-72	12	131	±24.0	±104	80	±33

Suffix "H" means 3.5KVdc isolation

Suffix "P" means Plastic Case instead of standard metal case

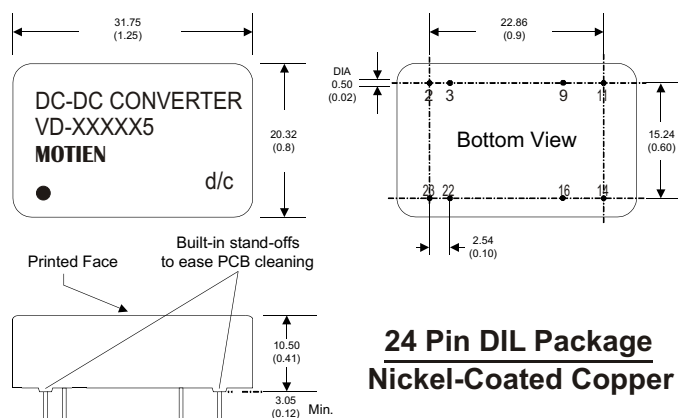
The models listed above is just for standard type. If you need the special specification product, please contact our service member by telephone presented in shortform cover or e-mail to : sales@motien.com.tw



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.

MECHANICAL SPECIFICATIONS

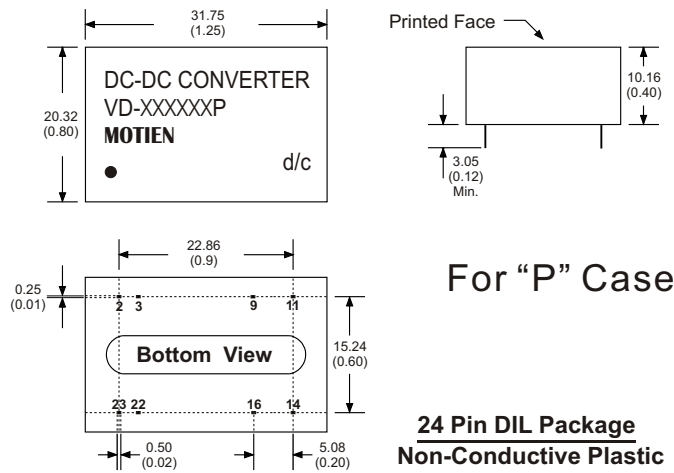


Notes : All dimensions are typical in millimeters (inches).
Tolerance x.xx = ± 0.25 (± 0.01)

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

(The Pin Connection of high isolation one is the same with normal one.)

MECHANICAL SPECIFICATIONS



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

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

(The Pin Connection of high isolation one is the same with normal one.)



MOTIEN



ISO 9001:2000 REGISTERED

No. 9, Keji 2nd Rd., Technology Industrial Park, Tainan City 70955, Taiwan
Tel: 886-6-384 2366 (Rep.)

Fax: 886-6-384 2399

Email : sales@motien.com.tw

Website : www.motien.com.tw

Last Update : Jan.23.2007