V3-S/D01(02) Series

MOTIEN TECHNOLOGY

2W Unregulated Dual Separate output

Features

- 7 Pin SIL / 14 Pin DIL Package
- 1000 VDC Isolation
- Up to 3000 VDC Isolation
- Low Ripple and Noise
- Efficiency up to 80%
- -40 ~ 85°C Operation Temperature Range
- Non-Conductive Black Plastic Case

ROHS

The V3 series is a family of cost effective 2W dual separate output DC-DC converters. These converters achieve low cost and ultra-miniature SIP 7 pin or DIP 14 pin size. Devices are encapsulated using flame retardant resin. The models operate from input voltage of 5, 12, 24 Vdc with output voltage of 3.3, 5,7.2, 9, 12,15, 18, 24 Vdc. High performance features include 1000Vdc~3000Vdc input/output isolation, high efficiency operation and output voltage accuracy of ±3% maximum. Standard features include an input range of ±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	±3%
Line regulation	±1.2% / Per 1% Vin Change
Load regulation	(From 20% to 100% Load) ±10% (Output 3.3V Model) ±20%
Ripple & noise (20 MHz bandwidth)(1)	75mV pk-pk
Temperature coefficient	±0.02%/°C
Capacitor load(2)	See table

INPUT SPECIFICATIONS

Voltage Range	±10%
Max. Input Current	See table
No-Load Input Current	See table
Input Filter	Capacitors
Input Reflected Ripple Current(3)	20mA pk-pk

ABSOLUTE MAXIMUM RATINGS(4)

These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.

Input Surge Voltage(100mS)	7 Vdc ,max.
5 Models	15 Vdc ,max.
12 Models	28 Vdc ,max.
24 Models	260°C ,max.
Soldering Temperature (1.5mm from case 10sec. max.)	

PHYSICAL SPECIFICATIONS

Case Material	Non-conductive Black Plastic(UL94V-0 rated)
Pin Material	0.5mm Alloy42 Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	2.7g
Dimensions	SIP Case 0.76"x0.28"x0.39" DIP Case 0.80"x0.40"x0.27"

ENVIRONMENT SPECIFICATIONS

Operating Temperature	-40°C~85°C (See Derating Curve)
Maximum Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

GENERAL SPECIFICATIONS

Efficiency	See table
I/O Isolation Voltage(3 sec)	
Input/Output1&Output2	1000~3000Vdc
Output1/Output2	1000Vdc
I/O Isolation Capacitance	60 pF Typ.
I/O Isolation Resistance	1000M Ohm
Switching Frequency	Variable 80kHz
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>1.121 Mhrs
Safety Standard :(designed to meet)	IEC 60950-1

PART NUMBER STRUCTURE

V3 - 12 05 D 01 H

Series Name

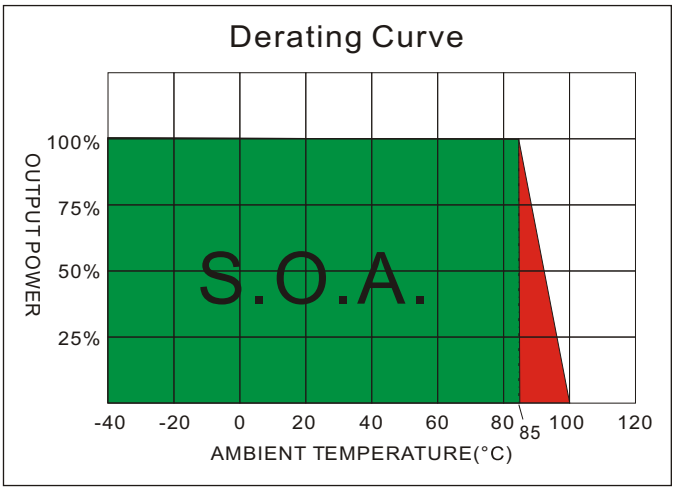
Input Voltage
05 - 5V
12 - 12V
24 - 24V

Case Type
S - SIP Case
D - DIP Case

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

Dual Separate Output Voltage (1W)

3R3S/D01 - 5V,3.3V	**3R3S/D02** - 3.3V,3.3V
	05S/D02 - 5V,5V
7R2S/D01 - 5V,7.2V	**7R2S/D02** - 7.2V,7.2V
09S/D01 - 5V,9V	**09S/D02** - 9V,9V
12S/D01 - 5V,12V	**12S/D02** - 12V,12V
15S/D01 - 5V,15V	**15S/D02** - 15V,15V
18S/D01 - 5V,18V	**18S/D02** - 18V,18V
24S/D01 - 5V,24V	**24S/D02** - 24V,24V



MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current No-Load (mA)	INPUT Current Full Load (mA)	OUTPUT Voltage(Vdc) Output1 Output2	OUTPUT Current Full load(mA) Output1 Output2	EFFICIENCY @FL(%)	Capacitor Load(uF)
V3-053 R3S/D01	5	35	519	5 , 3.3	200 , 303	77	220
V3-057 R2S/D01	5	35	519	5 , 7.2	200 , 139	77	220
V3-05 09S/D01	5	35	519	5 , 9	200 , 111	77	220
V3-05 12S/D01	5	35	500	5 , 12	200 , 83	80	220
V3-05 15S/D01	5	35	500	5 , 15	200 , 67	80	220
V3-05 18S/D01	5	35	519	5 , 18	200 , 55	77	220
V3-05 24S/D01	5	35	519	5 , 24	200 , 41	77	220
V3-123 R3S/D01	12	25	216	5 , 3.3	200 , 303	77	220
V3-127 R2S/D01	12	25	216	5 , 7.2	200 , 139	77	220
V3-12 09S/D01	12	25	216	5 , 9	200 , 111	77	220
V3-12 12S/D01	12	25	208	5 , 12	200 , 83	80	220
V3-12 15S/D01	12	25	208	5 , 15	200 , 67	80	220
V3-12 18S/D01	12	25	216	5 , 18	200 , 55	77	220
V3-12 24S/D01	12	25	216	5 , 24	200 , 41	77	220
V3-243 R3S/D01	24	12	108	5 , 3.3	200 , 303	77	220
V3-247 R2S/D01	24	12	108	5 , 7.2	200 , 139	77	220
V3-24 09S/D01	24	12	108	5 , 9	200 , 111	77	220
V3-24 12SD/01	24	12	104	5 , 12	200 , 83	80	220
V3-24 15S/D01	24	12	104	5 , 15	200 , 67	80	220
V3-24 18S/D01	24	12	106	5 , 18	200 , 55	78	220
V3-24 24S/D01	24	12	108	5 , 24	200 , 41	77	220

Suffix "H" means 3 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

V3 - 2W Unregulated Dual Separate output

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current No-Load (mA)	INPUT Current Full Load (mA)	OUTPUT Voltage(Vdc) Output1 Output2	OUTPUT Current Full load(mA) Output1 Output2	EFFICIENCY @FL(%)	Capacitor Load(uF)
V3-053 R3S/D02	5	35	519	3.3 , 3.3	303 , 303	77	220
V3-05 05S/D02	5	35	512	5 , 5	200 , 200	78	220
V3-057 R2S/D02	5	35	512	7.2 , 7.2	139 , 139	78	220
V3-05 09S/D02	5	35	512	9 , 9	111 , 111	78	220
V3-05 12S/D02	5	35	512	12 , 12	83 , 83	78	220
V3-05 15S/D02	5	35	506	15 , 15	67 , 67	79	220
V3-05 18S/D02	5	35	500	18 , 18	55 , 55	80	220
V3-05 24S/D02	5	35	500	24 , 24	41 , 41	80	220
V3-123 R3S/D02	12	25	216	3.3 , 3.3	303 , 303	77	220
V3-12 05S/D02	12	25	216	5 , 5	200 , 200	77	220
V3-127 R2S/D02	12	25	216	7.2 , 7.2	139 , 139	77	220
V3-12 09S/D02	12	25	216	9 , 9	111 , 111	77	220
V3-12 12S/D02	12	25	213	12 , 12	83 , 83	78	220
V3-12 15S/D02	12	25	213	15 , 15	67 , 67	78	220
V3-12 18S/D02	12	25	208	18 , 18	55 , 55	80	220
V3-12 24S/D02	12	25	208	24 , 24	41 , 41	80	220
V3-243 R3S/D02	24	12	106	3.3 , 3.3	303 , 303	78	220
V3-24 05S/D02	24	12	106	5 , 5	200 , 200	78	220
V3-247 R2S/D02	24	12	106	7.2 , 7.2	139 , 139	78	220
V3-24 09S/D02	24	12	106	9 , 9	111 , 111	78	220
V3-24 12SD/02	24	12	104	12 , 12	83 , 83	80	220
V3-24 15S/D02	24	12	104	15 , 15	67 , 67	80	220
V3-24 18S/D02	24	12	104	18 , 18	55 , 55	80	220
V3-24 24S/D02	24	12	104	24 , 24	41 , 41	80	220

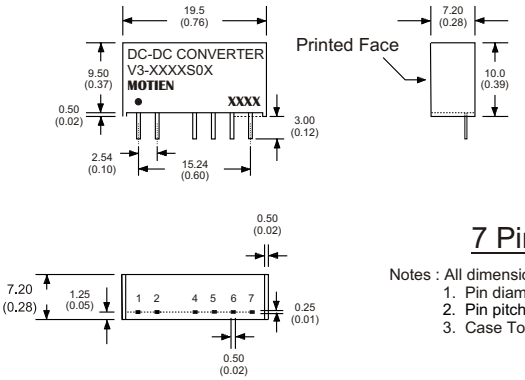
Suffix “H” means 3 KVdc isolation

NOTE

1. Ripple/Noise measured with 20MHz bandwidth.
2. Tested by minimal Vin and constant resistive load.
3. Measured Input reflected ripple current with a simulated source inductance of 12uH.
4. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
5. Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.

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

MECHANICAL SPECIFICATIONS

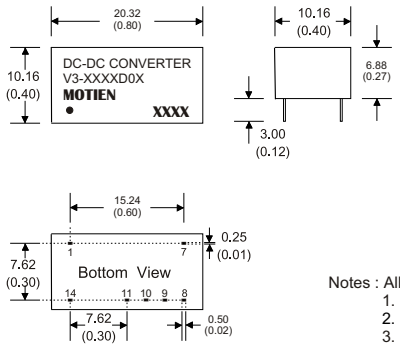


7 Pin SIL Package

Notes : All dimensions are typical in millimeters (inches).
1. Pin diameter: 0.5±0.05 (0.02±0.002)
2. Pin pitch and length tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

PIN CONNECTIONS	
PIN NUMBER	Dual Separate
1	+V Input
2	−V Input
4	+V1 Output
5	−V1 Output
6	+V2 Output
7	−V2 Output

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



14 Pin DIL Package

Notes : All dimensions are typical in millimeters (inches).
1. Pin diameter: 0.5±0.05 (0.02±0.002)
2. Pin pitch and length tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

PIN CONNECTIONS	
PIN NUMBER	Dual Separate
1	−V Input
7	N.C
8	−V2 Output
9	+V2 Output
10	−V1 Output
11	+V1 Output
14	+V Input

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

MOTIEN ISO 9001 . ISO 14001 . IECQ QC080000
No. 9, Keji 2nd Rd., Tainan Technology Industrial Park, Tainan City 70955, Taiwan
Tel: 886-6-384 2366 (Rep.) Fax: 886-6-384 2399
Website : www.motien.com.tw Email : sales@motien.com.tw

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