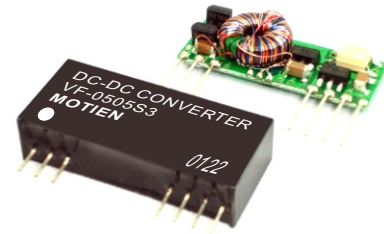


# VF-3W Series

## 3W Regulated Single output

### Features

- 12 Pin SIL Package
- 1000 VDC Isolation
- Up to 3000 VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 71%
- -25 ~ 71°C Operation Temperature Range



The VF series is a family of cost effective 3W single output DC-DC converters. These converters combine miniature package in a 12-pin SIL compatible case with high performance features such as 1000 VDC~3000 VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation. Devices are encapsulated using flame retardant resin. Input voltages of 5, 12, 24 with output voltage of 3.3, 5, 7.2, 9, 12, 15, 18, 24 Vdc. High performance features include high efficiency operation up to 71% and output voltage accuracy of  $\pm 2\%$  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	
Voltage accuracy	$\pm 2\%$
Line regulation	$\pm 0.5\%$
Load regulation	(From 0% to 100% Load) $\pm 0.5\%$ (Output 3.3V Model) $\pm 1.5\%$
Ripple & noise(20 MHz bandwidth)(1)	75mV pk-pk
Short Circuit Protection	Indefinite(Automatic Recovery)
Temperature coefficient	$\pm 0.02\%/^\circ\text{C}$
Capacitor load(2)	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 Current(3)	20mA pk-pk

GENERAL SPECIFICATIONS	
Efficiency	See table
I/O Isolation Voltage(3 sec)	
Input/Output	1000~3000Vdc
I/O Isolation Capacitance	60 pF Typ.
I/O Isolation Resistance	1000M Ohm
Switching Frequency	50kHz typ
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>1.12 Mhrs
Safety Standard : (designed to meet)	IEC 60950-1

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	7.2g
Dimensions	1.26"x0.32"x0.57"

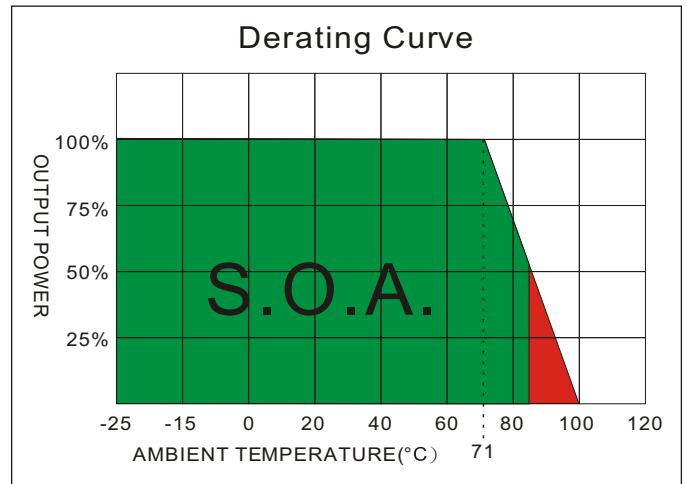
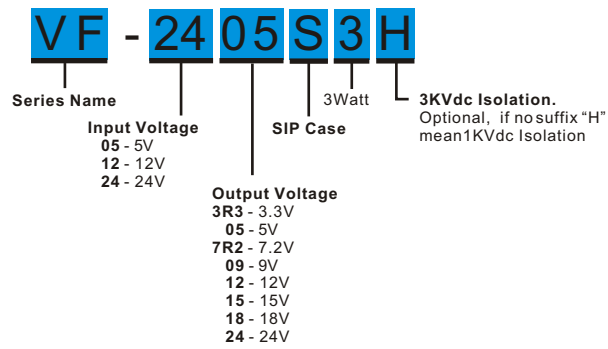
ENVIRONMENT SPECIFICATIONS	
Operating Temperature	$-25^\circ\text{C} \sim 71^\circ\text{C}$ (See Derating Curve)
Maximum Case Temperature	100°C
Storage Temperature	$-40^\circ\text{C} \sim 125^\circ\text{C}$
Cooling	Nature Convection

ABSOLUTE MAXIMUM RATINGS(4)	
These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.	
Input Voltage(100mS)	
5 Modes	0~7 Vdc
12 Modes	0~15 Vdc
24 Modes	0~28 Vdc
Lead Soldering Temperature	260°C
(1.5mm from case 10sec.)	

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.

## VF - 3W Regulated Single output

### PARTNUMBER STRUCTURE



## MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current Full load (mA)	EFFICIENCY @FL(%)	Capacitor Load(uF)
		No-Load (mA)	Full Load (mA)				
VF-053R3S3	5	100	748	3.3	600	53	470
VF-0505S3	5	100	968	5	600	62	470
VF-057R2S3	5	100	938	7.2	416	64	470
VF-0509S3	5	100	896	9	333	67	470
VF-0512S3	5	100	858	12	250	70	470
VF-0515S3	5	100	883	15	200	68	470
VF-0518S3	5	120	938	18	166	64	470
VF-0524S3	5	120	938	24	125	64	470
VF-123R3S3	12	60	300	3.3	600	55	470
VF-1205S3	12	60	417	5	600	60	470
VF-127R2S3	12	60	397	7.2	416	63	470
VF-1209S3	12	60	374	9	333	67	470
VF-1212S3	12	60	363	12	250	69	470
VF-1215S3	12	60	358	15	200	70	470
VF-1218S3	12	60	391	18	166	64	470
VF-1224S3	12	60	368	24	125	68	470
VF-243R3S3	24	30	153	3.3	600	54	470
VF-2405S3	24	30	205	5	600	61	470
VF-247R2S3	24	30	198	7.2	416	63	470
VF-2409S3	24	30	193	9	333	65	470
VF-2412S3	24	30	179	12	250	70	470
VF-2415S3	24	30	176	15	200	71	470
VF-2418S3	24	30	181	18	166	69	470
VF-2424S3	24	30	176	24	125	71	470

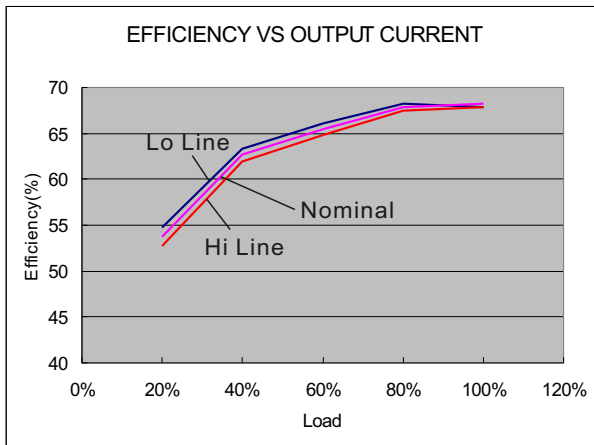
Suffix "H" means 3KVdc isolation

### NOTE

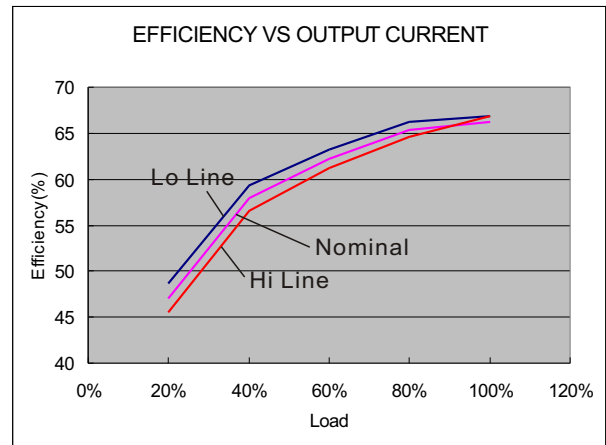
1. Ripple/Noise measured with 20MHz bandwidth.
2. Tested by minimal Vin and constant resistive load.
3. Measured Input reflected ripple current with a simulated source inductance of 12uH.
4. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
5. 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

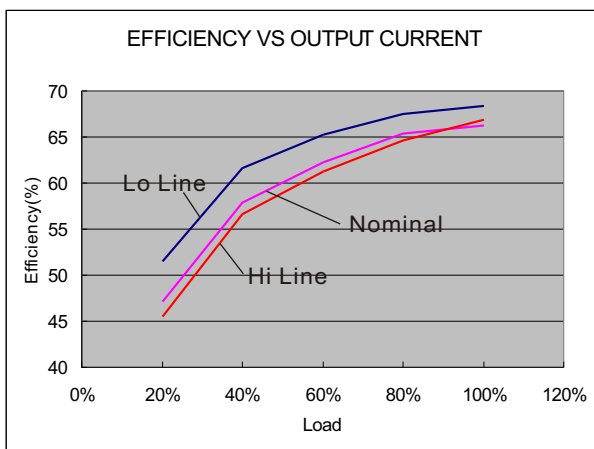
# VF - 3W Regulated Single output



05 Models

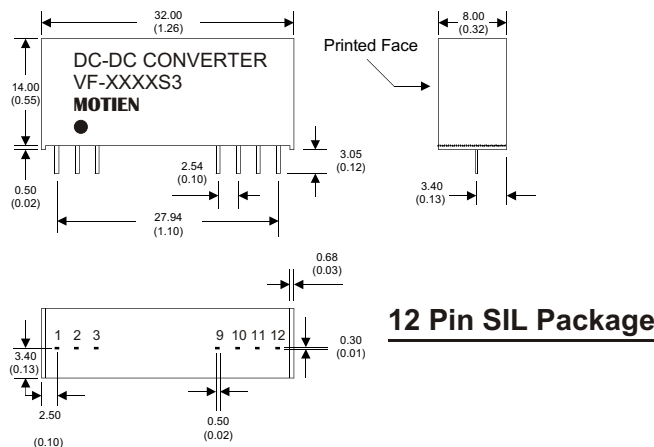


12 Models



24 Models

## MECHANICAL SPECIFICATIONS



**12 Pin SIL Package**

- Notes : All dimensions are typical in millimeters ( inches ).
1. Pin diameter:  $0.5 \pm 0.05$  (  $0.02 \pm 0.002$  )
  2. Pin pitch tolerance:  $\pm 0.35$  (  $\pm 0.014$  )
  3. Case Tolerance:  $\pm 0.5$  (  $\pm 0.02$  )

PIN CONNECTIONS		
PIN NUMBER	SINGLE	SINGLE-H
1	+V Input	+V Input
2	N.C.	-V Input
3	N.C.	N.C.
9	N.C.	N.C.
10	-V Output	-V Output
11	+V Output	+V Output
12	-V Input	N.C.