RG-5W Series

MOTIEN TECHNOLOGY

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 82%
- -25 ~ 85°C Operating Temperature
- Plastic Case Standard, Optional Metal Case

The RG series is a family of cost effective 5W single & dual output DC-DC converters. These converters combine Plastic case in a 24-pin DIL package with high performance features such as 1500 VDC ~ 3500VDC 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 12,24 and 48 with output voltage of 5, 9, 12, 15, 24, ±5, ±9, ±12, ±15 and ±24 Vdc. High performance features include high efficiency operation up to 82% and output voltage accuracy of ±1% maximum.

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

OUTPUT SPECIFICATIONS	
Voltage accuracy	±1%
Line regulation	±0.5%
Load regulation	±0.5%
Ripple & noise (20 MHz bandwidth)(1)	60mV pk-pk
Short circuit protection	Continuous
Temperature coefficient	±0.02%/°C
Capacitor load(2)	See table

PHYSICAL SPECIFICATIONS	
Case Material	Non-conductive Black Plastic(UL94V-0 rated)
	Nickel-coated Copper
Base Material	Non-conductive Black Plastic(UL94V-0 rated)
Pin Material	Ø0.5mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	12.5g(Plastic Case)/15.0g(Metal Case)
Dimensions	1.25"x0.8"x0.4"

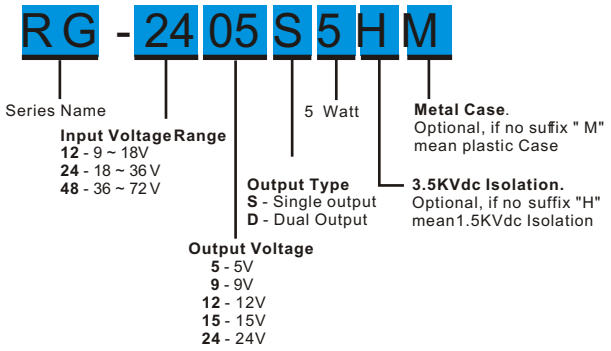
INPUT SPECIFICATIONS	
Voltage Range	See table
Max. Input Current	See table
No-Load Input Current	See table
Input Filter	PI Type
Input Reflected Ripple Current(3)	35mA pk-pk

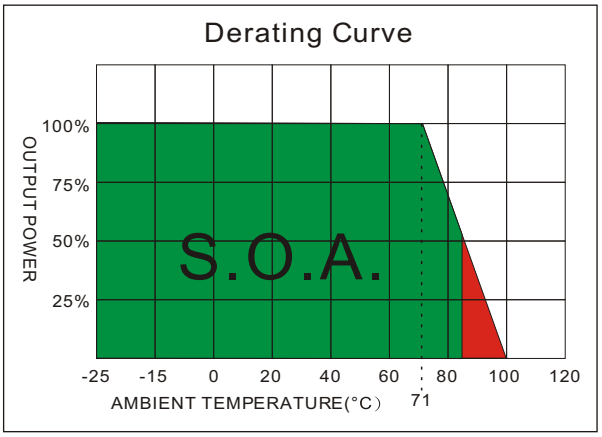
ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-25°C~85°C (See Derating Curve)
	-25°C~71°C (For 100% load)
Maximum Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

GENERAL SPECIFICATIONS	
Efficiency	See table, typ
I/O Isolation Voltage (3 sec)	
Input/Output	1500~3500Vdc
Metal Case/Input & Output	1000Vdc
I/O Isolation Capacitance	60 pF Typ.
I/O Isolation Resistance	1000M Ohm
Switching Frequency	100~400kHz
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217 F)	>2.199 Mhrs
Safety Standard : (designed to meet)	IEC 60950-1

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)	
12 Modes	-0.7~24 Vdc
24 Modes	-0.7~40 Vdc
48 Modes	-0.7~80 Vdc
Soldering Temperature (1.5mm from case 10sec.)	260°C

PART NUMBER STRUCTURE





MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current No-Load (mA)	INPUT Current Full Load (mA)	OUTPUT Voltage (Vdc)	OUTPUT Current Min. load (mA)	OUTPUT Current Full load (mA)	EFFICIENCY @FL(%)	Capacitor Load(uF)
RG-1205S5	9-18	20	555	5	250	1000	75	2200
RG-1209S5	9-18	20	534	9	138.8	555	78	470
RG-1212S5	9-18	20	514	12	104.3	417	81	470
RG-1215S5	9-18	20	520	15	83.3	333	80	470
RG-1224S5	9-18	20	520	24	52	208	80	220
RG-1205D5	9-18	20	541	±5	±125	±500	77	±1000
RG-1209D5	9-18	20	520	±9	±69.5	±278	80	±220
RG-1212D5	9-18	20	520	±12	±52	±208	80	±220
RG-1215D5	9-18	20	520	±15	±41.8	±167	80	±220
RG-1224D5	9-18	20	520	±24	±26	±104	80	±100
RG-2405S5	18-36	12	267	5	250	1000	78	2200
RG-2409S5	18-36	12	260	9	138.8	555	80	470
RG-2412S5	18-36	12	254	12	104.3	417	82	470
RG-2415S5	18-36	12	254	15	83.3	333	82	470
RG-2424S5	18-36	12	254	24	52	208	82	220
RG-2405D5	18-36	12	267	±5	±125	±500	78	±1000
RG-2409D5	18-36	12	260	±9	±69.5	±278	80	±220
RG-2412D5	18-36	12	260	±12	±52	±208	80	±220
RG-2415D5	18-36	12	260	±15	±41.8	±167	80	±220
RG-2424D5	18-36	12	260	±24	±26	±104	80	±100
RG-4805S5	36-72	8	135	5	250	1000	77	2200
RG-4809S5	36-72	8	131	9	138.8	555	79	470
RG-4812S5	36-72	8	130	12	104.3	417	80	470
RG-4815S5	36-72	8	130	15	83.3	333	80	470
RG-4824S5	36-72	8	130	24	52	208	80	220
RG-4805D5	36-72	8	131	±5	±125	±500	79	±1000
RG-4809D5	36-72	8	131	±9	±69.5	±278	79	±220
RG-4812D5	36-72	8	130	±12	±52	±208	80	±220
RG-4815D5	36-72	8	130	±15	±41.8	±167	80	±220
RG-4824D5	36-72	8	130	±24	±26	±104	80	±100

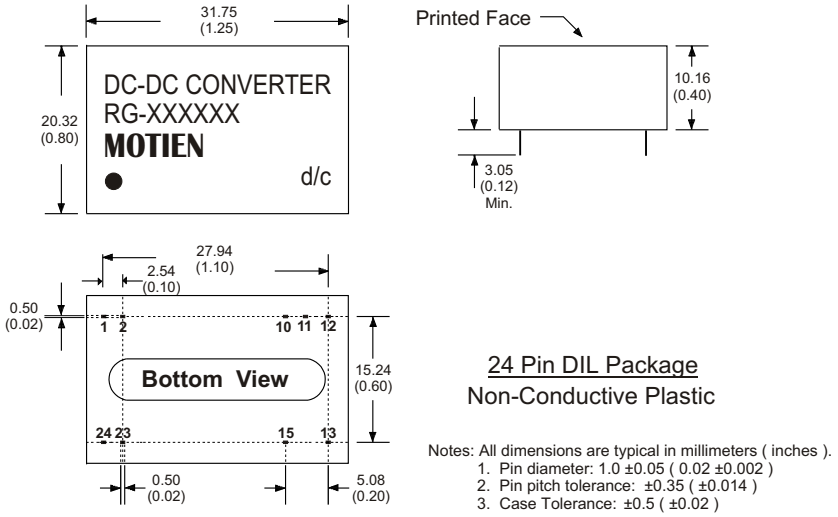
Suffix "H" means 3.5KVdc isolation
Suffix "M" means Metal Case instead of standard Plastic case

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. Typical value at nominal input voltage and full load.
2. Test by nominal input voltage and constant resistor 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.
6. It's necessary to add minimum capacitor in output for some models, please check single model datasheet for detail value.

MECHANICAL SPECIFICATIONS FOR HIGH ISOLATION MODEL



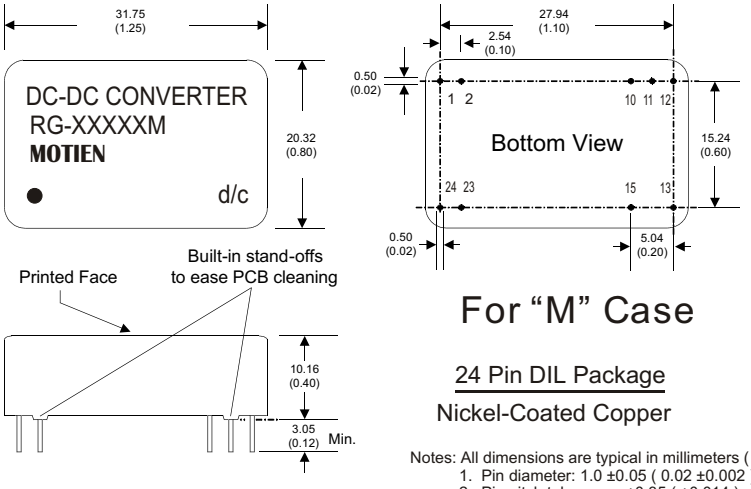
24 Pin DIL Package
Non-Conductive Plastic

Notes: All dimensions are typical in millimeters (inches).
1. Pin diameter: 1.0 ±0.05 (0.02 ±0.002)
2. Pin pitch tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	+V Input	+V Input
2	+V Input	+V Input
10	N.C.	Common
11	N.C.	Common
12	-V Output	N.C.
13	+V Output	−V Output
15	N.C.	+V Output
23	-V Input	-V Input
24	-V Input	-V Input

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

MECHANICAL SPECIFICATIONS



For "M" Case

24 Pin DIL Package
Nickel-Coated Copper

Notes: All dimensions are typical in millimeters (inches).
1. Pin diameter: 1.0 ±0.05 (0.02 ±0.002)
2. Pin pitch tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	+V Input	+V Input
2	+V Input	+V Input
10	N.C.	Common
11	N.C.	Common
12	-V Output	N.C.
13	+V Output	−V Output
15	N.C.	+V Output
23	-V Input	-V Input
24	-V Input	-V Input

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

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