

RP-3W Series



3W 4:1 Regulated Single & Dual output

Features

- Wide 4:1 Input Range
- 1500 VDC Isolation, Up to 3500 VDC
- Continuous Short Circuit Protection
- Efficiency up to 82%
- Operation Temperature Range -40 ~ 100°C max.
- Plastic Case Standard



PART NUMBER STRUCTURE

RP - **24** **05** **S** **3** **H**
(1) (2) (3) (4) (5) (6)

(1) Series

(2) Input Voltage Range

24 - 9-36 V

(4) Output Type

S - Single Output

D - Dual Output

(3) Output Voltage

05 - 5.0 V

09 - 9.0 V

12 - 12 V

15 - 15 V

24 - 24 V

(5) Watt

(6) Isolation Voltage (Optional)

Blank - 1500 VDC

H - 3500 VDC

ALL SPECIFICATIONS ARE TYPICAL AT 25°C, NOMINAL INPUT AND FULL LOAD UNLESS OTHERWISE NOTED

Model Number	Input Voltage Range (VDC)	Input Current		Output Voltage (VDC)	Output Current		Efficiency @FL (% , typ.)	Capacitive Load (μF, max.)
		No-Load (mA, max.)	Full Load (mA, typ.)		Min. load (mA)	Full load (mA)		
RP-2405S3	9-36	12	176	5	200	600	71	2200
RP-2409S3	9-36	30	174	9	111	333	72	470
RP-2412S3	9-36	15	171	12	83	250	73	470
RP-2415S3	9-36	15	171	15	67	200	73	470
RP-2424S3	9-36	15	152	24	42	125	82	220
RP-2405D3	9-36	10	169	±5	±100	±300	74	±1000
RP-2409D3	9-36	15	171	±9	±56	±167	73	±220
RP-2412D3	9-36	15	171	±12	±42	±125	73	±220
RP-2415D3	9-36	35	171	±15	±33	±100	73	±220
RP-2424D3	9-36	15	171	±24	±21	±63	73	±100

INPUT SPECIFICATIONS					
Parameter	Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	24V Input	9	24	36	VDC
Input Filter		Pi Type			
Input Reflected Ripple Current (1)			35		mApk-pk
Start up Time	Nominal Vin and constant resistive load		20		ms
Recommended input fuse (slow blow)	24V Input	1			A
Note :					
1. Measured with a simulated source inductance of 12μH and a source capacitor Cin (47μF, ESR<1.0Ω at 100kHz).					

OUTPUT SPECIFICATIONS					
Parameter	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		-1.0		+1.0	%
Line Regulation		-0.5		+0.5	%
Load Regulation	From 25% to 100% Load	-0.5		+0.5	%
Cross Regulation	Asymmetrical Load 25% / 100% for Dual Output	-5		+5	%
Ripple & Noise (1)	20MHz bandwidth			60	mVpk-pk
Short Circuit Protection		Continuous			
Temperature Coefficient		-0.02		+0.02	%/°C
Maximum Capacitive Load	Minimum Vin and constant resistive load	See Table			
Note :					
1. Typical value at nominal input voltage and full load.					

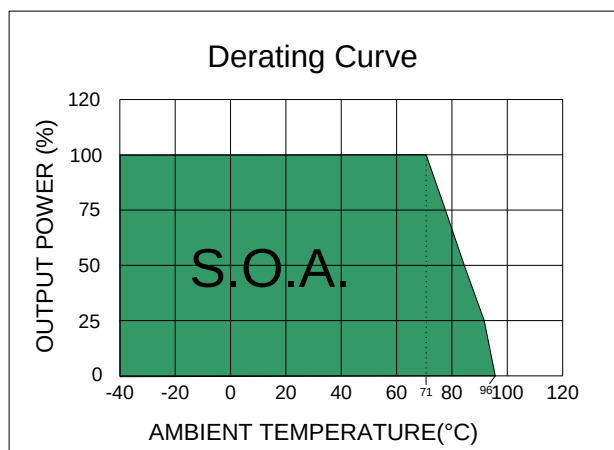
ABSOLUTE MAXIMUM RATINGS					
Parameter	Conditions	Min.	Typ.	Max.	Unit
Input Surge Voltage (100 ms)	24V Input			40	VDC
Soldering Temperature	1.5mm from case 10sec max.			260	°C
Note : These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.					

GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output, and rated for 60sec	Standard Type	1500			VDC
		Suffix “H”	3500			
Isolation Resistance	Input-output		1000			MΩ
Isolation Capacitance	Input-output			60		pF
Switching Frequency			100		400	kHz
MTBF	MIL-HDBK-217 F @ 25°C		1			M hours
Safety Approval	IEC / EN / UL 62368-1		Design to meet			
Environmental compliance			RoHS			

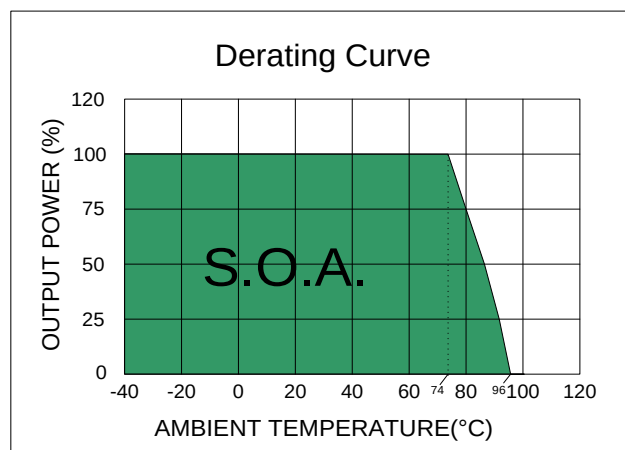
ENVIRONMENT SPECIFICATIONS					
Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating Ambient Temperature	See the Derating Curve	-40		100	°C
Maximum Case Temperature				100	°C
Thermal Impedance		23.01			°C/W
Storage Humidity				95	% rel. H
Storage Temperature		-55		125	°C
Cooling	Natural Convection	30-65 LFM			

PHYSICAL SPECIFICATIONS	
Parameter	Value
Case Material	Nonconductive Black Plastic (UL94V-0 rated)
Base Material	Nonconductive Black Plastic (UL94V-0 rated)
Pin Material	Ø0.5mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	12.5 g , typ.
Dimensions	1.25" x 0.8" x 0.4"

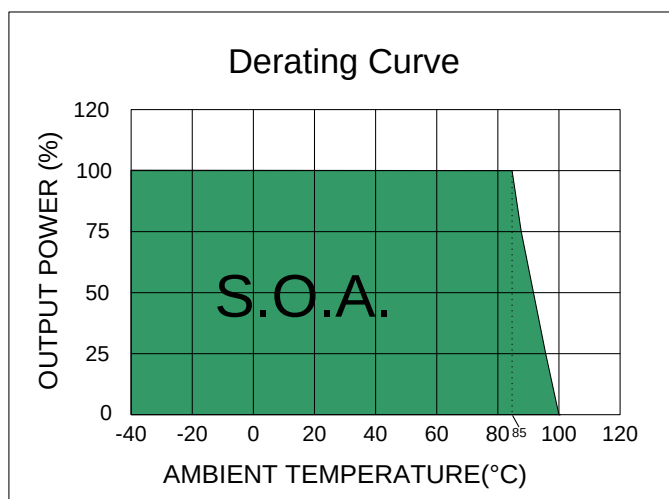
ELECTRICAL CHARACTERISTIC CURVES



Efficiency = 71% ~ 72%



Efficiency = 73% ~ 74%

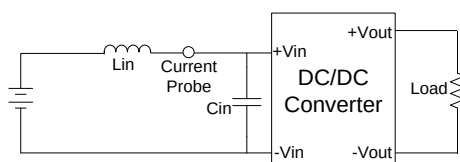


Efficiency = 82% ~ 83%

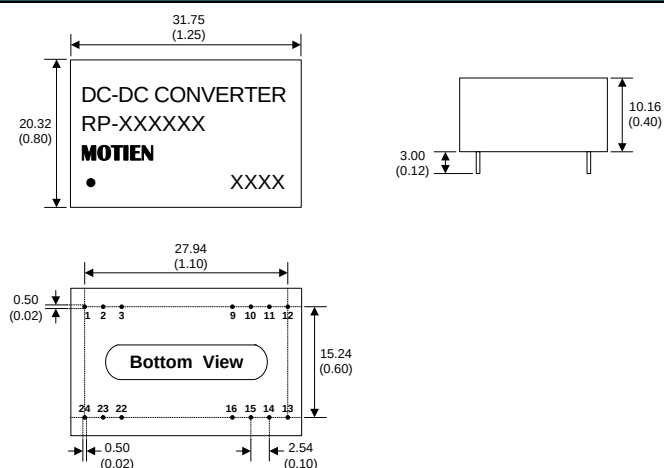
TEST CONFIGURATIONS

Input Reflected Ripple Current Test Step

Input reflected ripple current is measured with a source inductor L_{in} (12 μ H) and a source capacitor C_{in} (47 μ F, ESR<1.0 Ω at 100kHz) at nominal input and full load.



MECHANICAL SPECIFICATIONS



DIP24 Package
Non-Conductive Plastic

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)

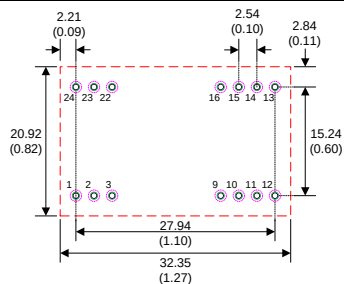
PIN CONNECTIONS

PIN NUMBER	SINGLE	DUAL	SINGLE-H	DUAL-H
1	+Vin	+Vin	N.P.	N.P.
2	N.C.	-Vout	-Vin	-Vin
3	N.C.	COM	-Vin	-Vin
9	N.P.	N.P.	N.P.	COM
10	-Vout	COM	N.P.	N.P.
11	+Vout	+Vout	N.C.	-Vout
12	-Vin	-Vin	N.P.	N.P.
13	-Vin	-Vin	N.P.	N.P.
14	+Vout	+Vout	+Vout	+Vout
15	-Vout	COM	N.P.	N.P.
16	N.P.	N.P.	-Vout	COM
22	N.C.	COM	+Vin	+Vin
23	N.C.	-Vout	+Vin	+Vin
24	+Vin	+Vin	N.P.	N.P.

*N.P. : No PIN

*N.C. : No Connection

RECOMMENDED FOOTPRINT DETAILS



Notes : 1. All dimensions are typical in millimeters (inches).

Through hole (black) 1 ~ 24: $\varnothing 0.80$ (0.031)

Top view pad (green) 1 ~ 24: $\varnothing 1.00$ (0.039)

Bottom view pad (pink) 1 ~ 24: $\varnothing 1.60$ (0.063)