

## Features

### Regulated Converters

- 4:1 Wide Input Voltage Range
- 15 Watts Regulated Output Power
- 1.6kVDC Isolation
- Over Current and Over Voltage Protection
- Six-Sided Shield
- No Derating to 65°C
- Standard 2" x 1" Package and Pinning
- Efficiency to 86%

**POWERLINE**

DC/DC-Converter

## RP15- S\_DFW Series

### Selection Guide 24V and 48V Wide Input Types

Part Number	Input Range	Output Voltage	Output Current	Input Current	Efficiency <sup>(4,5)</sup>	Capacitive <sup>(7)</sup> Load max.
	VDC	VDC	mA	mA	%	µF
RP15-243.3FW	9-36	3.3	4500	60/773	84	14750
RP15-2405FW	9-36	5	3000	60/777	86	7200
RP15-2412FW	9-36	12	1250	75/771	85	1250
RP15-2415FW	9-36	15	1000	75/762	86	800
RP15-483.3FW	18-75	3.3	4500	30/422	84	14750
RP15-4805FW	18-75	5	3000	30/381	86	7200
RP15-4812FW	18-75	12	1250	40/385	85	1250
RP15-4815FW	18-75	15	1000	40/381	86	800
RP15-2405DFW	9-36	±5	±1500	85/801	82	±3600
RP15-2412DFW	9-36	±12	±625	100/771	85	±625
RP15-2415DFW	9-36	±15	±500	100/762	86	±400
RP15-4805DFW	18-75	±5	±1500	45/400	82	±3600
RP15-4812DFW	18-75	±12	±625	50/385	85	±625
RP15-4815DFW	18-75	±15	±500	50/381	86	±400

\* add /P for CTRL function with Positive Logic (1=ON, 0=OFF)

\* add /N for CTRL function with Negative Logic (0=ON, 1=OFF)

### 15 Watt

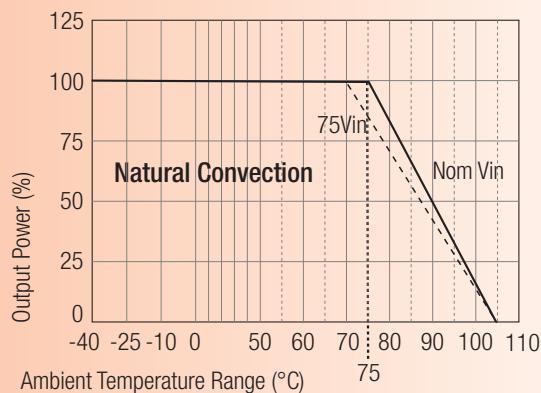
2" x 1"

Single & Dual  
Output



### Derating Graph (Ambient Temperature)

RP15-4805FW



**Specifications** (typical at nominal input and 25°C unless otherwise noted)

Input Voltage Range	24V nominal input 48V nominal input	9-36VDC 18-75VDC
Input Filter		Pi Type
Input Surge Voltage (100 ms max.)	24V Input 48V Input	50VDC 100VDC
Input Reflected Ripple (nominal Vin and full load)		20mA <sub>p-p</sub>
Start Up Time (nominal Vin and constant resistor load)		20ms typ.
Remote ON/OFF (Optional. See note 1)	DC-DC ON DC-DC OFF	Open or 3.0V < V <sub>r</sub> < 12V Short or 0V < V <sub>r</sub> < 1.2V
Remote OFF input current	Nominal input	2.5mA
Output Power		15W max.
Output Voltage Accuracy (full Load and nominal Vin)		±1%
Minimum Load		0%
Line Regulation (low line, high line at full load)		±0.2%
Load Regulation (0% to 100% full load)	Single Dual	±0.5% ±1%
Cross Regulation Dual Output (asymmetrical load 25%/100% full load)		±5%
Ripple and Noise (20MHz bandwith) (measured with a 104pF ceramic across the output)	3.3, 5.0V 12, 15, ±5, ±12, ±15V	50mV <sub>p-p</sub> 75mV <sub>p-p</sub>
Temperature Coefficient		±0.02%/ <sup>o</sup> C max.
Transient Response (25% load step change)		250µs
Input Voltage Variation, dv/dt	complies with ETS300 132, part 4.4	5V/ms
Over Load Protection (% of full load at nominal Vin)		150% typ
Oversupply Protection (Single)		Zener Diode Clamp
Undervoltage Protection	24V Input 48V Input	DC-DC ON = 9VDC, DC-DC OFF = 8VDC DC-DC ON = 18VDC, DC-DC OFF = 16VDC
Short Circuit Protection		Continuous, automatic recovery
Efficiency		see „Selection Guide“ table
Isolation Voltage	In to Out and I/O to case	1600VDC min.
Isolation Resistance		10 GΩ min.
Isolation Capacitance		1500pF max.
Operating Frequency		400kHz typ.
Operating Temperature Range	5.1, 12, 15, ±12, ±15V 3.3, ±5V with derating	-40°C to +75°C -40°C to +65°C -40°C to +105°C
Maximum Case Temperature		+105°C
Storage Temperature Range		-55°C to +125°C
Thermal Impedance (see note 8)	Natural convection with Heatsink	12°C/Watt 10°C/Watt
Case Material		Nickel plated copper
Base Material		Non-conductive black plastic
		continued on next page

**Specifications, cont.** (typical at nominal input and 25°C unless otherwise noted)

Potting Material	Epoxy (UL94-V0)	
Weight	27g	
Conducted Emissions (see note 3)	EN55022	Class A
Radiated Emissions (see note 3)	EN55022	Class A
ESD	EN61000-4-2	Perf. Criteria B
Radiated Immunity	EN61000-4-3	Perf. Criteria A
Fast Transient	EN61000-4-4	Perf. Criteria B
Surge	EN61000-4-5	Perf. Criteria B
Conducted Immunity	EN61000-4-6	Perf. Criteria A
Thermal Shock	MIL-STD-810D	
Vibration	10-55Hz, 2G, 30 Min. along X, Y and Z	
Relative Humidity	5% to 95% RH	
MTBF (see note 2)	Bellcore-TR-NWT-000332	2350 x 10 <sup>3</sup> hours

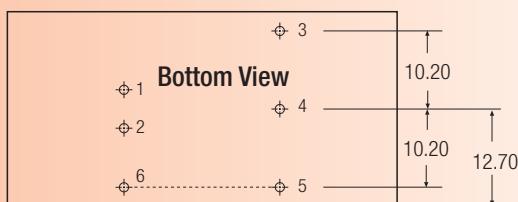
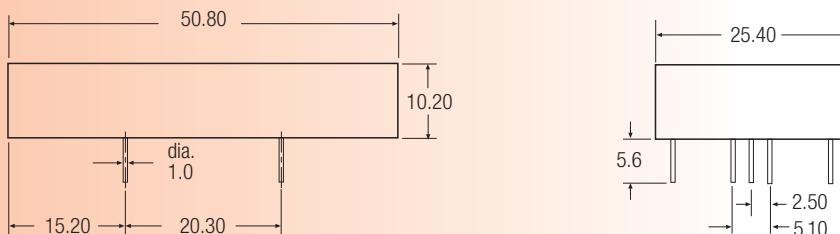
**Notes :**

1. The ON/OFF control function can be positive or negative logic. The pin voltage is referenced to negative input.  
Positive logic ON/OFF is marked with suffix-P (eg. RP15-2405SFW/P)  
Negative logic ON/OFF is marked with suffix-N (eg. RP15-2405SFW/N).  
If no suffix is specified, the control pin will be omitted.
2. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C (Ground fixed and controlled environment).
3. Requires external filter to meet EN55022 Class A
4. Typical value at nominal input voltage and no load.
5. Maximum value at nominal input voltage and full load
6. Typical value at nominal input voltage and full load.
7. Test by minimum Vin and constant resistor load.
8. Optional Heatsink Part Number 7G-0020A

**Package Style and Pinning (mm)**

DIP24 Package Style

3rd angle projection



**Pin Connections**

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Com
5	-Vout	-Vout
6*	CTRL*	CTRL*

\* Optional. See Note 1.

Pin Pitch Tolerance ±0.35 mm