

POWERLINE - DC/DC-Converter

EW-Series, 15W, 1.6 kV Isolation, 4:1 Wide Input Range (Single & Dual Output)

RECOM

Features

- 15 Watts Output Power
- 4:1 Wide Input Voltage Range
- International Safety Standard Approvals
- Six-Sided Continuous Shield
- High Efficiency up to 82%
- Standard 50.8 x 40.6 x 10.2 Package
- Fixed Switching Frequency
- UL 1950 Component Recognised

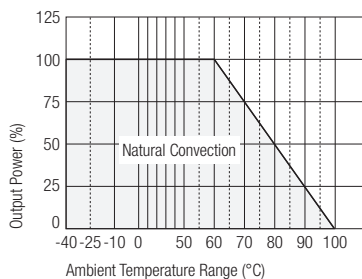


Selection Guide 24V and 48V Input Types

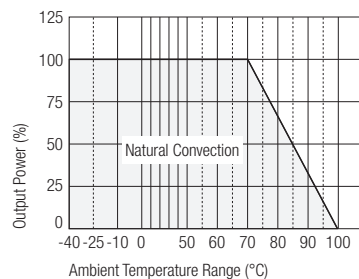
Part Number	Input Voltage VDC	Output Voltage VDC	Output Current mA	Input Current (see note 6) mA	Efficiency (see note 7) %	Capacitive Load max. μF
RP15-2405SEW	9-36	5	3000	822	80	6800
RP15-2412SEW	9-36	12	1250	801	82	890
RP15-2415SEW	9-36	15	1000	801	82	570
RP15-2405DEW	9-36	±5	±1500	822	80	±1700
RP15-2412DEW	9-36	±12	±625	801	82	±300
RP15-2415DEW	9-36	±15	±500	801	82	±200
RP15-4805SEW	18-75	5	3000	411	80	6800
RP15-4812SEW	18-75	12	1250	401	82	890
RP15-4815SEW	18-75	15	1000	401	82	570
RP15-4805DEW	18-75	±5	±1500	411	80	±1700
RP15-4812DEW	18-75	±12	±625	401	82	±300
RP15-4815DEW	18-75	±15	±500	401	82	±200

RP15-4805SEW: Derating & Efficiency Curves

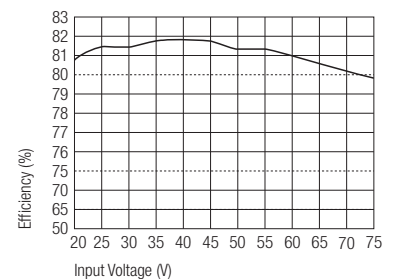
RP15-4805SEW Derating Curve



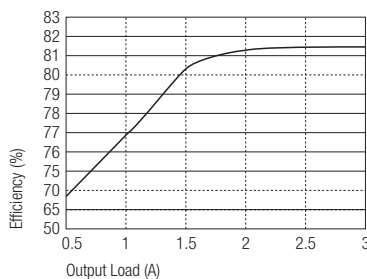
RP15-4805SEW Derating Curve with Heat Sink (see note 3)



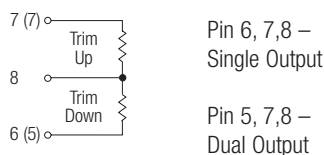
RP15-4805SEW Efficiency vs Input Voltage



RP15-4805SEW Efficiency vs Output



External Output Trimming



Pin 6, 7,8 –
Single Output

Pin 5, 7,8 –
Dual Output

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

Output Power		15W max.
Voltage Accuracy (full Load and nominal Vin)		±2%
Voltage Adjustability		±10%
Minimum Load (see note 1)		10% of FL
Line Regulation (LL-HL at full load)		±0.5%
Load Regulation (10% to 100% FL)	Single	±1%
	Dual	±5%
Cross Regulation (asymmetrical load 25%/100% FL)	Dual	±5%
Ripple and Noise (20MHz bandwidth)	Single	75mVp-p
Temperature Coefficient		±0.02%/°C, max.
Transient Response (25% load step change)		500µsec
Over Voltage Protection (with zener diode clamp)	5V output	6.2V
	12V output	15V
	15V output	18V
Over Load Protection (% of full load at nominal Vin)		150% max.
Short Circuit Protection		Hiccup, automatic recovery
Input Voltage Range	RP15 24V nominal input	9-36VDC
	RP15 48V nominal input	18-75VDC
Input Filter		Pi Type
Input Surge Voltage (100 ms max.)	24V input	50VDC
	48V input	100VDC
Input Reflected Ripple (nominal Vin and full load, see note 2)		20mAp-p
Start Up Time (nominal Vin and constant resistor load)		20ms typ.
Remote ON/OFF (see note 3)	DC-DC ON	Open or 3.5V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
Remote off input current	Nominal input	20mA
Efficiency		see „Selection Guide“ table
Isolation Voltage		1600VDC min.
Isolation Resistance		10 ⁹ Ω min.
Isolation Capacitance		300pF max.
Switching Frequency		270kHz typ.
Approved to Safety Standards		UL 1950, EN60950
Case Material		Nickel-coated copper
Base Material		Non-conducted black plastic
Potting Material		Epoxy (UL94-V0)
Weight		48g
Dimensions		50.8 x 40.6 x 10.2 mm
MTBF (see note 4)		2.041 x 10 ⁶ Hours
Operating Temperature Range (see derating curves on previous page)		-40°C to +85°C (with derating)
Maximum Case Temperature		+100°C
Storage Temperature Range		-55°C to +105°C

continued on next page

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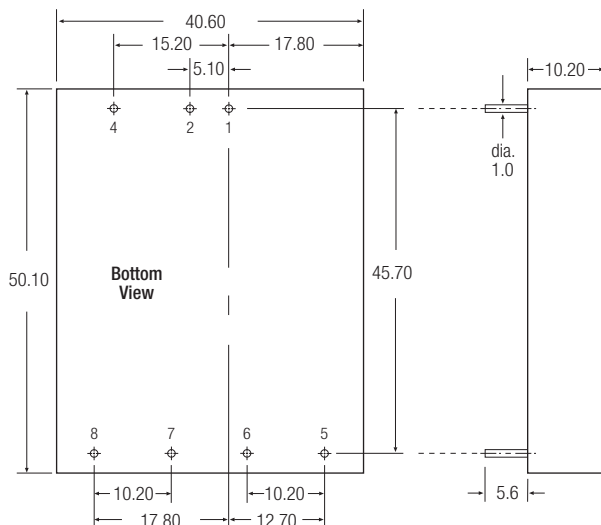
Specifications continued (typical at nominal input and 25°C unless otherwise noted)

Thermal Impedance (see note 5)	Natural convection	10°C/Watt
Thermal Shock		MIL-STD-810D
Vibration		10-55Hz, 2G, 30 Min. along X, Y and Z
Relative Humidity		5% to 95% RH
Conducted Emissions	EN55022	Level A
Radiated Emissions	EN55022	Level A
Conducted Immunity	EN61000-4-6	Perf. Criteria 2
Radiated Immunity	EN61000-4-3	Perf. Criteria 2
Surge	EN61000-4-5	Perf. Criteria 2
Fast Transient	EN61000-4-4	Perf. Criteria 2
ESD	EN61000-4-2	Perf. Criteria 2

Notes

- The RP15 E series requires a minimum of 10% loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specification.
- Simulated source impedance of 12uH. 12uH inductor in series with +Vin.
- The ON/OFF control is referenced to negative input.
- BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40 °C. (Ground fixed and controlled environment).
- Heat sink is optional. Thermal impedance is 8.24°C/Watt for natural convection and the P/N is 7G-0011A.
- Maximum value at nominal input voltage and full load.
- Typical value at nominal input voltage and full load.

Package Style and Pinning (mm)



Pin Connections

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
4	CTRL	CTRL
5	No Pin	+Vout
6	+Vout	Common
7	-Vout	-Vout
8	Trim	Trim

Pin Pitch Tolerance ± 0.35 mm