

# POWERLINE - DC/DC-Converter

E-Series, 60 Watt, 1.6 kV Isolation & Wide Input Range (Single & Dual Output)

# RECOM

## Features

- 2:1 Input Range
- Efficiency up to 90%
- Low Profile Case, 19 mm
- ON/OFF Control
- Over-Voltage Protection
- Six-Sided Shield
- Pi Input Filter
- Including 3.3/5.0VDC Output
- MTBF 1.250 x 10<sup>5</sup> Hours
- 2 Year Warranty



## Selection Guide 12V, 24V and 48V Input Types

Part Number	Input Range (VDC)	Output Voltage (VDC)	Output Current (A)	Efficiency (%)
RP60-1233SE	9-18	3.3	15	78
RP60-1205SE	9-18	5	12	81
RP60-1212SE	9-18	12	5	82
RP60-1215SE	9-18	15	4	82
RP60-1205DE	9-18	±5	+10 / -2	81
RP60-1212DE	9-18	±12	±2.5	82
RP60-1215DE	9-18	±15	±2.0	82
RP60-123305DE	9-18	3.3 / 5	6/6	78
RP60-2433SE	18-36	3.3	15	79
RP60-2405SE	18-36	5	12	83
RP60-2412SE	18-36	12	5	84
RP60-2415SE	18-36	+15	4	84
RP60-2405DE	18-36	±5	+10 / -2	83
RP60-2412DE	18-36	±12	±2.5	87
RP60-2415DE	18-36	±15	±2.0	87
RP60-243305DE	18-36	3.3 / 5	6 / 6	80
RP60-4833SE	36-75	3.3	15	80
RP60-4805SE	36-75	5	12	84
RP60-4812SE	36-75	12	5	89
RP60-4815SE	36-75	15	4	89
RP60-4805DE	36-75	±5	+10 / -2	84
RP60-4812DE	36-75	±12	±2.5	89
RP60-4815DE	36-75	±15	±2.0	89
RP60-483305DE	36-75	3.3 / 5.0	6 A/6	81
<b>Specials</b>				
RP60-485.5DEC	36-72	+5.5 / -5.4	+8 / -1.5	-

## Maximum Capacitive Load

RP60-xx05SE	20400µF
RP60-xx12SE	3550µF
RP60-xx15SE	3300µF
RP60-xx33SE	38700µF
RP60-xx05DE	17000µF (+5V) 3400µF (-5V)
RP60-xx12DE	900µF
RP60-xx15DE	600µF
RP60-xx3305DE	16000µF (+3.3V) 10200µF (+5V)

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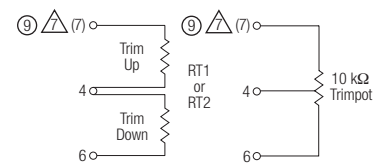
# RECOM

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

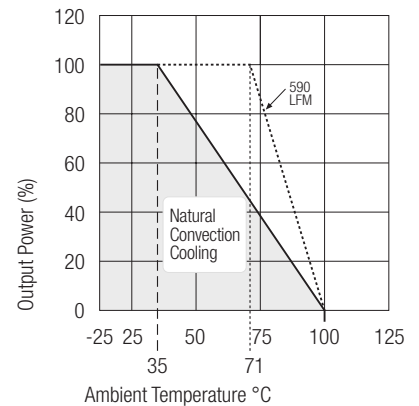
Input Voltage Range	See „Selection Guide“ table	
Input Filter	Pi Type	
Reflected Ripple Current	75mA, p-p	
Voltage Accuracy, Single, Dual Output Models	±2.0%, max.	
Voltage Balance, Dual Output Models	±2%, max.	
Ripple & Noise, 20MHz BW	1% p-p of Vout	
Line Regulation:	Single Output Models	±0.5%, max.
	Dual Output Models	±0.5%, max.
Load Regulation (1/10 Load Full-Load)	(xx3305DE) Models 3.3V	
Minimum Output Current 800mA)	Single Output Models	±0.5%, max.
	Dual Output Models	±0.5%, max.
Temperature Coefficient	±0.02%/°C	
Temp. Coefficient Balance	±1.0%	
Output Short Circuit Duration	Continuous	
Short Circuit Protection. All outputs, by input Current limiting Output	Continuous	
Short Circuit Duration	Continuous	
Overvoltage Protection Threshold:	3.3V Output	3.9V
	5.0V Output	6.2V
	12V Output	15V
	15V Output	18V
Control Voltage Referenced to Negative(-)Input Compatibility	CMOS, TTL	
ON-Control	4.8V min. or Open	
OFF-Control	0.4V max. or Short	
Switching Frequency	200kHz, typ.	
Isolation Voltage	1600VDC, min	
Isolation Resistance	10 <sup>9</sup> Ω	
Operating Temperature Range	-25°C to +71°C	
Storage Temperature Range	-55°C to +125°C	
Cooling	Free-air Convection	
EMI/RFI	Six-sided Continuous Shield	
Case Material	Nickel-Coated Copper with Non-Conductive Base	
Dimensions	100 x 70 x 19 mm	
MTBF (MIL-HDBK-217F TA = 25°C full load)	1.250 x 10 <sup>5</sup> Hours	

## External Output Trimming

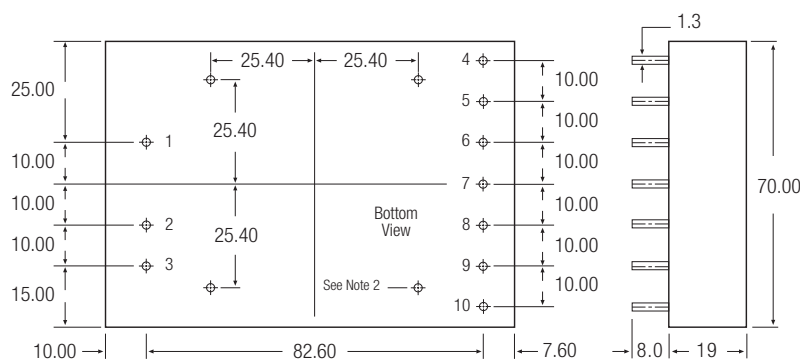
Output may optionally be externally trimmed (± 10%) with a fixed resistor or an external trimpot as shown.



○ for dual output    △ for 3.3/5.0VDC  
( · ) for single output



## Package Style and Pinning (mm)



Note: Mounting inserts: 4 - 40 x 2.5 Deep

## Pin Connections

Pin #	Single	Dual	3.3 VDC / 5.0 VDC
1	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin
3	On/Off	On/Off	On/Off
4	Trim	Trim	Trim
5	+Vout	+Vout	+3.3 Vout
6	+Vout	+Vout	+3.3 Vout
7	Ground	Ground	Common
8	Ground	Ground	Common
9	N/P	-Vout	+5.0 Vout
10	N/P	-Vout	+5.0 Vout

Pin Pitch Tolerance ±0.5 mm