Specifications (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

BASIC CHARACTERISTICS

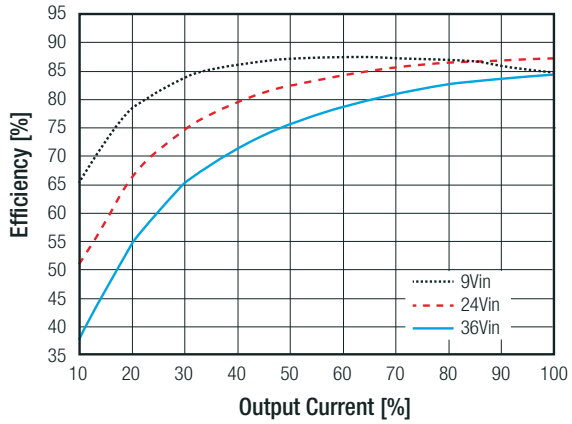
Parameter	Condition		Min.	Typ.	Max.
Input Filter					Pi-Type
Input Voltage Range	nom. Vin = 24VDC nom. Vin = 48VDC		9VDC 18VDC	24VDC 48VDC	36VDC 75VDC
Input Surge Voltage	100ms max.	nom. Vin = 24VDC nom. Vin = 48VDC			50VDC 100VDC
Under Voltage Lockout (UVLO)	nom. Vin = 24VDC	DC-DC ON DC-DC OFF		7.5VDC	9VDC
	nom. Vin = 48VDC	DC-DC ON DC-DC OFF		15VDC	18VDC
Input Reflected Ripple Current				20mAp-p	
Minimum Load			0%		
Start-up Time	Power up			20ms	
ON/OFF CTRL [5]	Positive Logic	DC-DC ON DC-DC OFF			Open or 3.0VDC < V_{CTRL}< 12VDC Short or 0VDC < V_{CTRL}< 1.2VDC
	Negative Logic	DC-DC ON DC-DC OFF			Short or 0VDC < V_{CTRL}< 1.2VDC Open or 3.0VDC < V_{CTRL}< 12VDC
Input Current of CTRL pin	DC-DC ON		-0.5mA		+0.5mA
Standby Current	DC-DC OFF			2.5mA	
Internal Operating Frequency			360kHz	400kHz	440kHz
Ripple and Noise	measured at 20MHz BW with a 0.1µF/50V MLCC	3.3Vout, 5Vout 12Vout, 15Vout		50mVp-p 75mVp-p	
		±5Vout, ±12Vout, ±15Vout		75mVp-p	

Notes:

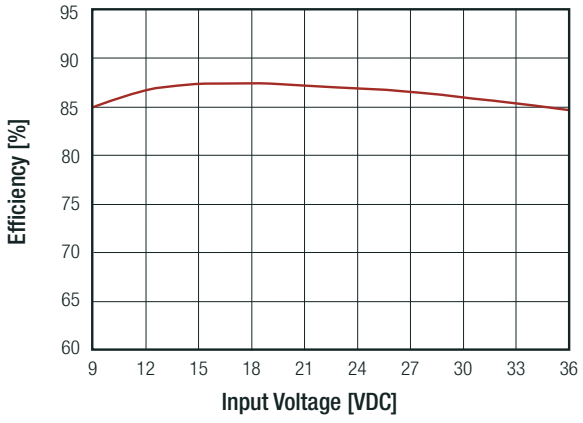
Note5: If no suffix is specified, the control pin will be omitted. If fitted, the ON/OFF control function can be positive or negative logic. The pin voltage is referenced to -Vin pin

RP15-2405SFW

Efficiency vs. Output Current



Efficiency vs. Input Voltage full load



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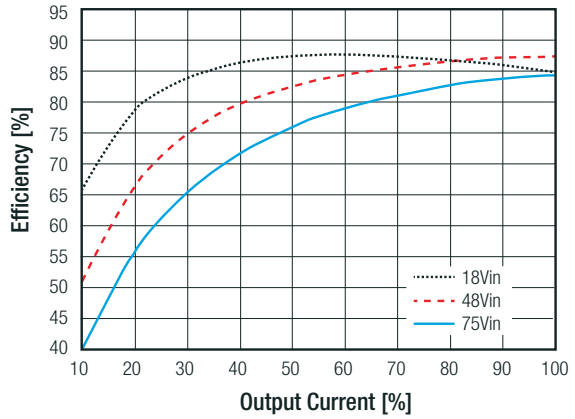
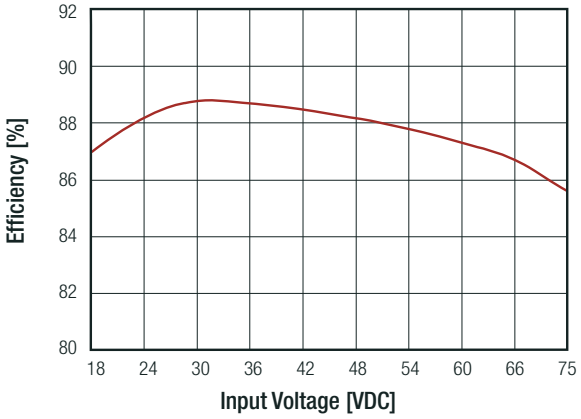
Specifications (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

RP20-4805SFW

Efficiency vs. Output Current



Efficiency vs. Input Voltage full load



REGULATIONS			
Parameter	**Condition**		**Value**
Output Accuracy			±1.0%.
Line Regulation	low line to high line, full load	Single Dual	±0.2% ±0.5%
Load Regulation	0% to 100% load	Single Dual	±0.5% ±1.0%
Cross Regulation	asymmetrical 25%<>100% load		±5.0%
Transient Response Recovery Time	25% load step change		250µs typ.

PROTECTIONS			
Parameter	**Condition**		**Value**
Short Circuit Protection (SCP)			continuous, automatic recovery
Over Voltage Protection (OVP)	zener diode clamp	3.3Vout 5Vout 12Vout 15Vout	3.9VDC 6.2VDC 15VDC 18VDC
Over Load Protection (OLP)	% Iout rated		150% typ.
Isolation Voltage (6)	I/P to O/P I/P to O/P to case		1.6kVDC/ 1 minute 1.6kVDC/ 1 minute
Isolation Resistance	Viso= 500VDC		1GΩ min.
Isolation Capacitance			1500pF max.

Notes:

Note6: For repeat Hi-Pot testing, reduce the time and/or the test voltage

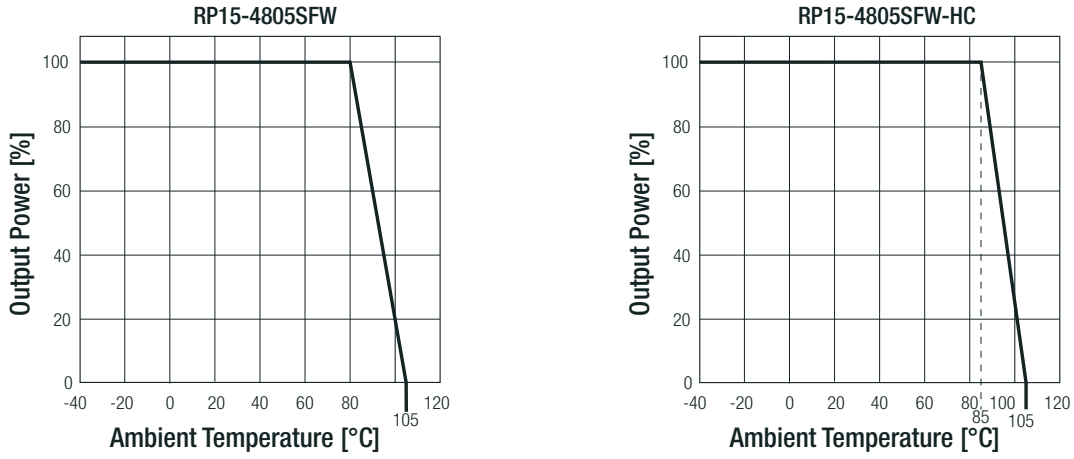
Note7: This power module is not internally fused. An input line fuse must always be used

Specifications (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	without derating with derating		-40°C to +80°C -40°C to +105°C
Maximum Case Temperature			+105°C
Temperature Coefficient			±0.02%/K max.
Thermal Impedance	@ natural convection 0.1m/s	without heat-sink with heat-sink	12K/W 10K/W
Operating Humidity	non-condensing		5% - 95% RH
Operating Altitude			2000m
Thermal Shock			according to MIL-STD-810F
Vibration			according to MIL-STD-810F
MTBF	MIL-HDBK-217F, G.B. Bellcore TR-NWT-000332 (8)		2430 x 10^3 hours 2350 x 10^3 hours

Derating Graph (9)



Notes:

Note8: BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C (Ground fixed and controlled environment)

Note9: Derating graphs are valid only for the shown part numbers. If you need detailed derating-information about a part-number not shown here please contact RECOM Techsupport for detailed information

SAFETY AND CERTIFICATIONS

Certificate Type (Safety)	Condition	Standard
Information Technology Equipment, General Requirements for Safety	E196683	UL60950-1, 2nd Edition, 2011 CAN/CSA-C22.2 No. 60950-1-07, 2nd Edition, 2011
EAC	RU-AT.49.09571	TP TC 004/2011
RoHS2		RoHS-2011/65/EU + AM-2015/863

EMC Compliance	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment - Emission requirements	with external filter (see filter suggestion below)	EN55032, Class A and B
ESD Electrostatic discharge immunity test	Air ±8kV and Contact ±6kV	EN61000-4-2, Criteria B
Radiated, radio-frequency, electromagnetic field immunity test	10 V/m	EN61000-4-3, Criteria A
Fast Transient and Burst Immunity (10)	±2kV	EN61000-4-4, Criteria B
Surge Immunity (10)	±1kV	EN61000-4-5, Criteria A
Immunity to conducted disturbances, induced by radio-frequency fields	10 Vr.m.s	EN61000-4-6, Criteria A
Power Magnetic Field Immunity	100A/m continuous; 1000A/m 1s	EN61000-4-8, Criteria A

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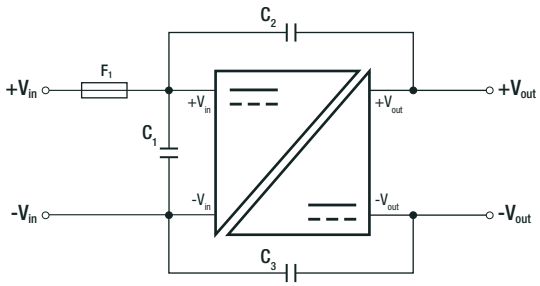
Specifications (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

Notes:

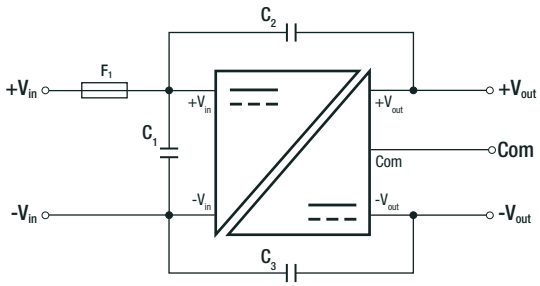
Note10 : An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5
Recom suggests Nippon chemi-con KY series 220µF/100V

EMC Filtering Suggestions according to EN55032

Single



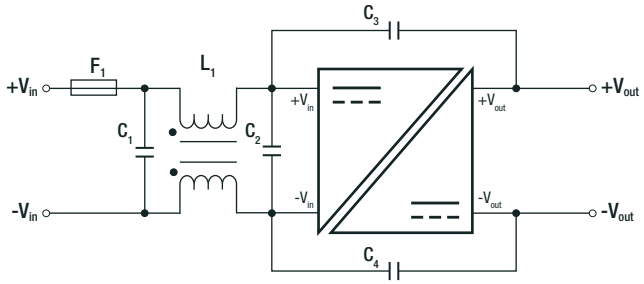
Dual



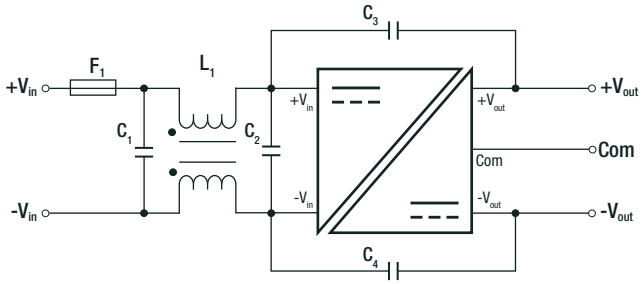
Component List Class A

MODEL	C1	C2	C3
RP15-24xxSFW RP15-24xxDFW	N/A	1000pF/2kV 1206 MLCC	1000pF/2kV 1206 MLCC
RP15-48xxSFW RP15-48xxDFW	1µF/100V 1210 MLCC	1000pF/2kV 1206 MLCC	1000pF/2kV 1206 MLCC

Single



Dual



Component List Class B

MODEL	C1	C2	C3/C4	L1
RP15-24xxSFW RP15-24xxDFW	2.2µF/50V 1812 MLCC	N/A	1000pF/2kV 1206 MLCC	CMC: 450µH ref.: WE 7448227005 ref.: CMC-05
RP15-48xxSFW RP15-48xxDFW	2.2µF/50V 1812 MLCC	2.2µF/50V 1812 MLCC	1000pF/2kV 1206 MLCC	CMC: 325µH ref.: WE 744290321 ref.: CMC-06

DIMENSIONS and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case base potting	nickel coated copper FR4 PCB epoxy (UL94V-0)
Dimensions (LxWxH)	without Heat-sink with Heat-sink	50.8 x 25.4 x 10.2mm 56.8 x 25.4 x 16.8mm
Weight	without Heat-sink with Heat-sink	27g 37.89g

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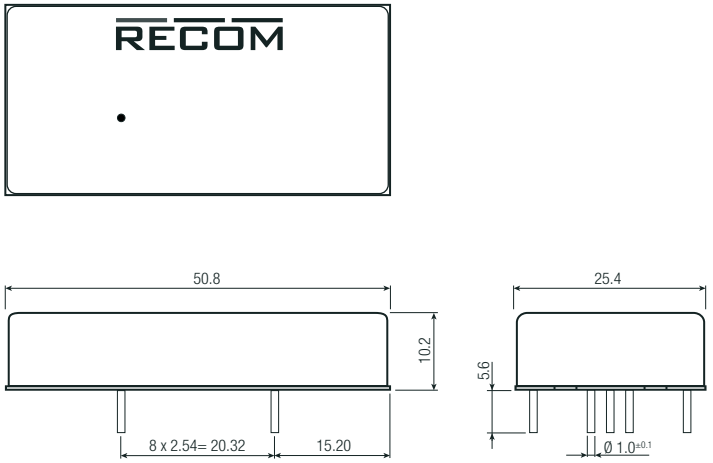
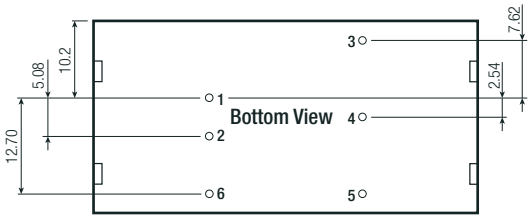
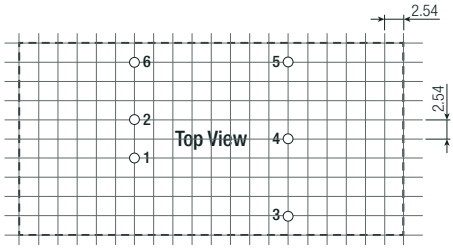
Specifications (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

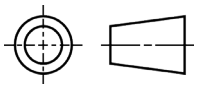
Dimension Drawing (mm)





Recommended Footprint Details



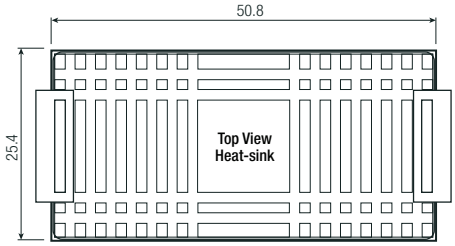


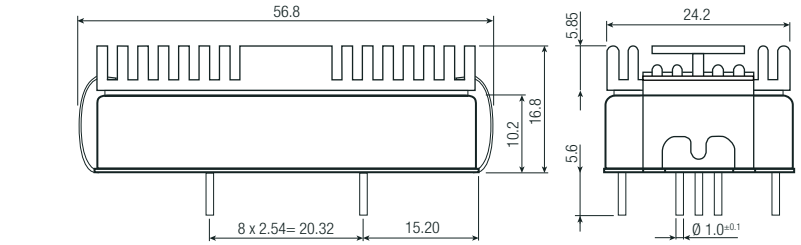
Pinning Information

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	no Pin	Com
5	-Vout	-Vout
6	CTRL (3)	CTRL (3)

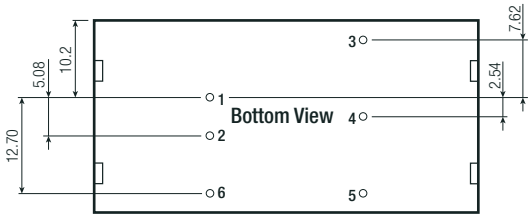
Tolerance: xx.x= ±0.5mm
xx.xx= ±0.25mm

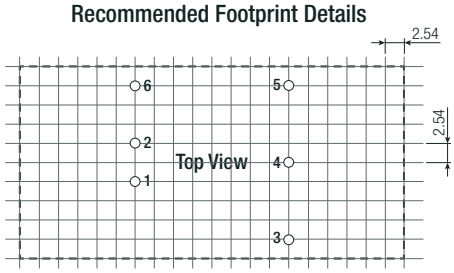
Dimension Drawing with Heat-sink (mm)





Recommended Footprint Details





Specifications (measured @ Ta= 25°C, nom. Vin, full load unless otherwise stated)

PACKAGING INFORMATION			
Parameter	**Type**		**Value**
Packaging Dimension (LxWxH)	tube tray	without heat-sink with heat-sink	255.0 x 54.0 x 22.0mm 302.5 x 222.0 x 20.0mm
Packaging Quantity	tube tray	without heat-sink with heat-sink	9pcs 20pcs
Storage Temperature Range			-55°C to +125°C
Storage Humidity	non-condensing		5% - 95% RH

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

RECOM:

RP15-2405DFW RP15-2405DFW/N RP15-2405DFW/N-HC RP15-2405DFW/P RP15-2405DFW/P-HC RP15-2405DFW-HC RP15-2405SFW RP15-2405SFW/N RP15-2405SFW/N-HC RP15-2405SFW/P RP15-2405SFW/P-HC RP15-2405SFW-HC RP15-2412DFW RP15-2412DFW/N RP15-2412DFW/N-HC RP15-2412DFW/P RP15-2412DFW/P-HC RP15-2412DFW-HC RP15-2412SFW RP15-2412SFW/N RP15-2412SFW/N-HC RP15-2412SFW/P RP15-2412SFW/P-HC RP15-2412SFW-HC RP15-2415DFW RP15-2415DFW/N RP15-2415DFW/N-HC RP15-2415DFW/P RP15-2415DFW/P-HC RP15-2415DFW-HC RP15-2415SFW RP15-2415SFW/N RP15-2415SFW/N-HC RP15-2415SFW/P RP15-2415SFW/P-HC RP15-2415SFW-HC RP15-243.3SFW RP15-243.3SFW/N RP15-243.3SFW/N-HC RP15-243.3SFW/P RP15-243.3SFW/P-HC RP15-243.3SFW-HC RP15-4805DFW RP15-4805DFW/N RP15-4805DFW/N-HC RP15-4805DFW/P RP15-4805DFW/P-HC RP15-4805DFW-HC RP15-4805SFW RP15-4805SFW/N RP15-4805SFW/N-HC RP15-4805SFW/P RP15-4805SFW/P-HC RP15-4805SFW-HC RP15-4812DFW RP15-4812DFW/N RP15-4812DFW/N-HC RP15-4812DFW/P RP15-4812DFW/P-HC RP15-4812DFW-HC RP15-4812SFW RP15-4812SFW/N RP15-4812SFW/N-HC RP15-4812SFW/P RP15-4812SFW/P-HC RP15-4812SFW-HC RP15-4815DFW RP15-4815DFW/N RP15-4815DFW/N-HC RP15-4815DFW/P RP15-4815DFW/P-HC RP15-4815DFW-HC RP15-4815SFW RP15-4815SFW/N RP15-4815SFW/N-HC RP15-4815SFW/P RP15-4815SFW/P-HC RP15-4815SFW-HC RP15-483.3SFW RP15-483.3SFW/N RP15-483.3SFW/N-HC RP15-483.3SFW/P RP15-483.3SFW/P-HC RP15-483.3SFW-HC