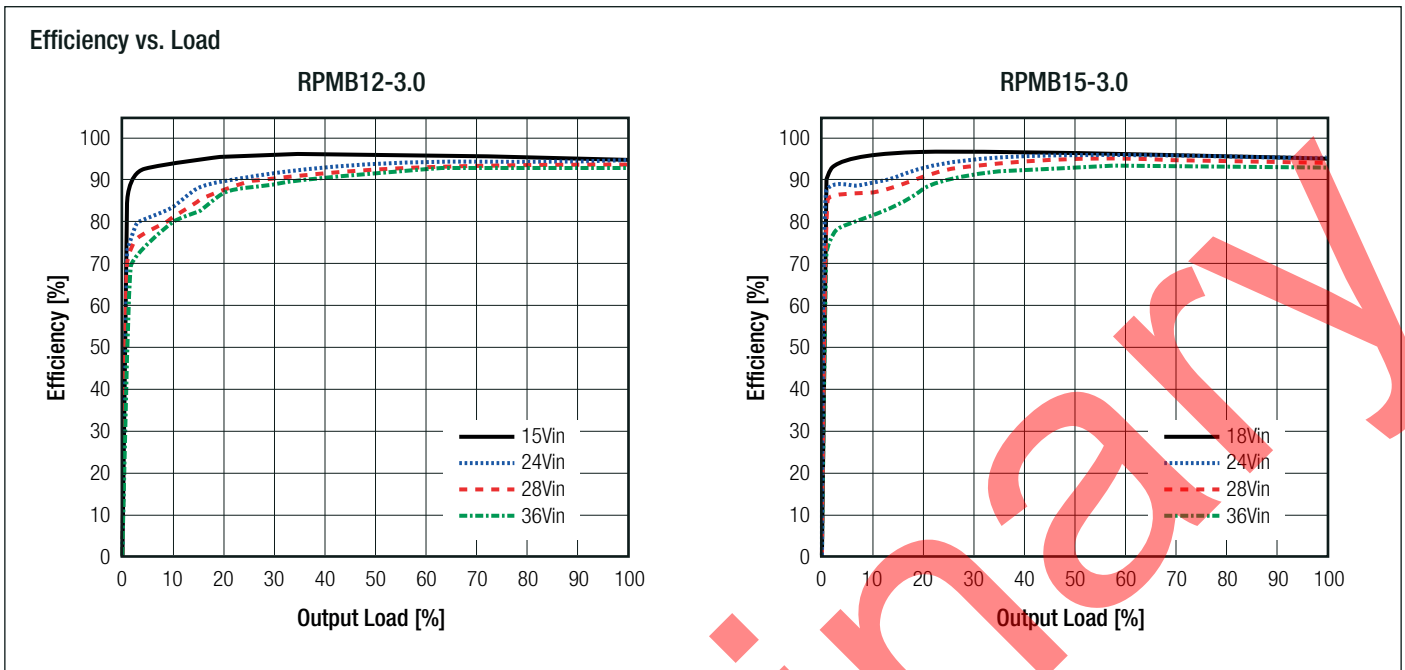
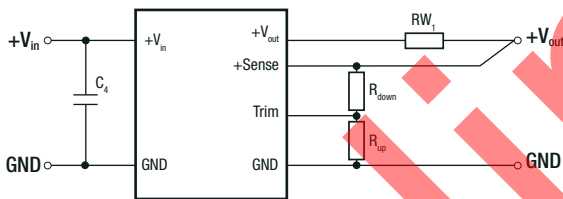


Specifications (@ Ta= 25°C, nom. Vin= 24VDC, full load, with input cap⁽⁹⁾, after warm-up unless otherwise stated)



REMOTE SENSE

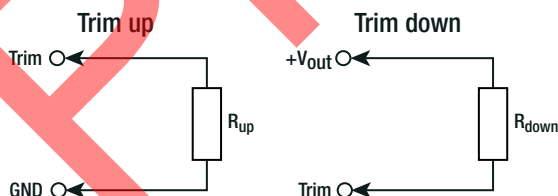


R_{W1} ... wire losses +
 R_{up} ... trim up resistor
 R_{down} ... trim down resistor

The output voltage can be adjusted via trim and sense functions. The maximum output voltage from trim and sense functions combined is 9V and 24V (based on models). Power or thermal derating may be required when using trim and/or sense functions.

OUTPUT VOLTAGE TRIMMING

The RPMB-series offers the feature of trimming the output voltage by using external trim resistors. The values for trim resistors shown in trim tables below are according to standard E96 values; therefore, the specified voltage may slightly vary. Refer to "Selection Guide" for applicable Vout Adjust Range.



$V_{out_{nom}}$ = nominal output voltage [VDC]
 $V_{out_{set}}$ = trimmed output voltage [VDC]
 R_{up} = trim up resistor [Ω]
 R_{down} = trim down resistor [Ω]
 R_3, R_4 = internal resistors [Ω]

Vout _{nom}	R ₃	R ₄
3.3VDC	100k Ω	43.2k Ω
5VDC	100k Ω	24.9k Ω
12VDC	100k Ω	9.09k Ω
15VDC	90.9k Ω	6.49k Ω

Calculation:

$$R_{up} = \frac{R_4 \times (V_{out_{set}} - 1) - R_3 \times (R_4 + 1)}{R_3 - R_4 \times (V_{out_{set}} - 1)}$$

$$R_{down} = \frac{R_4 \times (V_{out_{set}} - 1) \times (R_3 + 1) - R_3}{R_3 - R_4 \times (V_{out_{set}} - 1)}$$

continued on next page

Specifications (@ Ta= 25°C, nom. Vin= 24VDC, full load, with input cap ⁽⁶⁾, after warm-up unless otherwise stated)

Practical Example RPMB12-3.0

V_{outset} = 15VDC

$$R_{up} = \frac{9.09 \times (15 - 1) - 100 \times (9.09 + 1)}{100 - 9.09 \times (15 - 1)}$$

R_{up} according to E96 ≈ **32k4Ω**

RPMB3.3-3.0

Trim up

V _{outset} =	5	[VDC]
R _{up} (E96) ≈	57k6	[Ω]

Trim down

V _{outset} =	2.5	1.8	1.5	1.2	1.1	[VDC]
R _{down} (E96) ≈	182k	52k3	26k7	8k45	3k48	[Ω]

RPMB5.0-3.0

Trim up

V _{outset} =	5.5	9	[VDC]
R _{up} (E96) ≈	205k	23k7	[Ω]

Trim down

V _{outset} =	3.3	2.5	[VDC]
R _{down} (E96) ≈	133k	59k	[Ω]

Practical Example RPMB12-3.0

V_{outset} = 9VDC

$$R_{down} = \frac{9.09 \times (9 - 1) \times (100 + 1) - 100}{100 - 9.09 \times (9 - 1)}$$

R_{down} according to E96 ≈ **267kΩ**

RPMB12-3.0

Trim up

V _{outset} =	15	24	[VDC]
R _{up} (E96) ≈	32k4	7k32	[Ω]

Trim down

V _{outset} =	10	9	[VDC]
R _{down} (E96) ≈	453k	267k	[Ω]

RPMB15-3.0

Trim up

V _{outset} =	20	24	[VDC]
R _{up} (E96) ≈	16k9	9k09	[Ω]

Trim down

V _{outset} =	12	9.99	[VDC]
R _{down} (E96) ≈	332k	162k	[Ω]

REGULATIONS		
Parameter	Condition	Value
Output Accuracy		±1.0% typ. / ±3.0% max.
Line Regulation	low line to high line, full load	±0.25% typ. / ±0.5% max.
Load Regulation	10% to 100% load	0.05% typ.
Transient Response	25% load step change recovery time	200mV 100µs

PROTECTIONS		
Parameter	Condition	Value
Short Circuit Protection (SCP)	less than 50mΩ	hiccup mode, automatic recovery
Over Current Protection (OCP)		120% min.
Over Temperature Protection (OTP)	case temperature (measured on tc point)	DC-DC OFF DC-DC ON 105°C min., auto restart after cool down 100°C typ.

ENVIRONMENTAL		
Parameter	Condition	Value
Operating Temperature Range ⁽⁶⁾	@ natural convection 0.1m/s with derating (refer to "Derating Graph")	-40°C to +100°C
Maximum Case Temperature	measured on tc point (refer to "Dimension Drawing")	+105°C
Temperature Coefficient		0.02%/K
Thermal Impedance ⁽⁶⁾	0.1m/s, horizontal (T _{case} to T _{AMB})	12K/W
Operating Altitude ⁽⁷⁾	with derating @ natural convection 0.1m/s	5000m
Operating Humidity	non-condensing	5% - 95% RH

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