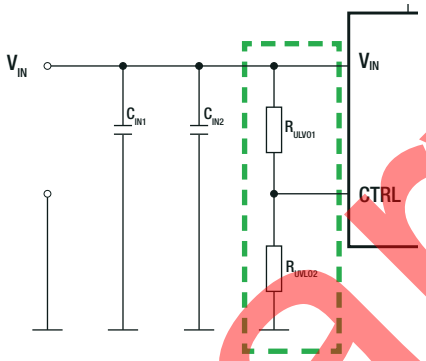
Specifications (measured @ ta= 25°C, 12Vin, 3.3Vout, full load and after warm-up unless otherwise stated, refer to test set up)

UNDER VOLTAGE LOCKOUT SETTING

The RPX-2.5 features an internal UVLO circuit that disables the converter until the input voltage exceeds 4.1V typ. This threshold can be raised by adding an external resistor divider R_{UVLO1} and R_{UVLO2}.

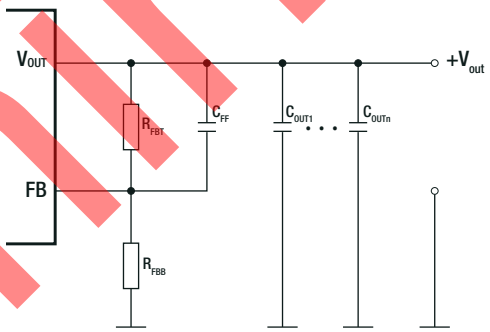
Standard Resistor Values					
VIN UVLO [VDC]	**4.5**	**10**	**15**	**18**	**20**
R_{UVLO1} [kΩ]	68.1	68.1	68.1	68.1	68.1
R_{UVLO2} [kΩ]	25.5	9.53	6.04	4.99	4.42



OUTPUT VOLTAGE SETTING

The recommended value of R_{FBT} is 10kΩ. The values for trim resistors shown in trim tables below are according to standard E96 values; therefore, the specified voltage may slightly vary. For other output voltages, the value of the required R_{FBB} resistor can be calculated using below equation:

$Vout_{nom}$	= nominal output voltage	[VDC]
$Vout_{set}$	= trimmed output voltage	[VDC]
V_{REF}	= reference voltage (6VDC)	[VDC]
d	= trim offset (0.6VDC)	[VDC]
R_{FBT}	= Trim resistor (10kΩ)	[kΩ]
R_{FBB}	= calculated trim resistor	[kΩ]



Calculation:

$$R_{FBB} = \left[\frac{V_{REF}}{Vout_{set} - d} \right]$$

Practical Example:

$$R_{FBB} = \left[\frac{6VDC}{3.3VDC - 0.6} \right] = 2.22k\Omega$$

R_{FBB} according to E96 ≈ **2.21kΩ**

Resistor Table:

$Vout_{set}$ =	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1	[VDC]
R_{FBB} (E96) ≈	10k	8k45	7k5	6k65	6k04	5k36	4k99	4k64	4k22	4k02	[Ω]
$Vout_{set}$ =	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3	3.1	[VDC]
R_{FBB} (E96) ≈	3k74	3k48	3k32	3k16	3k01	2k87	2k74	2k61	2k49	2k37	[Ω]
$Vout_{set}$ =	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	4.1	[VDC]
R_{FBB} (E96) ≈	2k32	2k21	2k15	2k05	2k	1k96	1k87	1k82	1k74	1k69	[Ω]
$Vout_{set}$ =	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5	5.1	[VDC]
R_{FBB} (E96) ≈	1k65	1k62	1k58	1k54	1k5	1k47	1k43	1k4	1k37	1k33	[Ω]
$Vout_{set}$ =	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6	[VDC]	
R_{FBB} (E96) ≈	1k3	1k27	1k24	1k22	1k2	1k18	1k15	1k13	1k1	[Ω]	

Specifications (measured @ ta= 25°C, 12Vin, 3.3Vout, full load and after warm-up unless otherwise stated, refer to test set up)

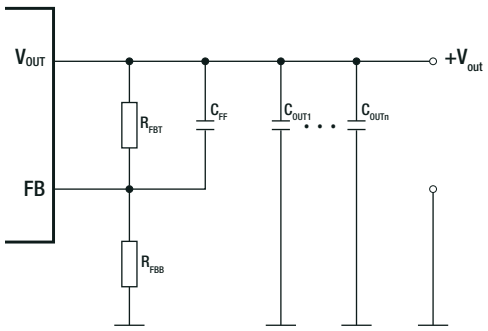
INPUT AND OUTPUT CAPACITOR

Input Capacitor

The RPX-2.5 requires a 10µF MLCC input capacitor for normal operation. For high transient load applications, an additional 47µF electrolytic capacitor connected in parallel is recommended, rated for a ripple current of 1.25A or higher.

Output Capacitor

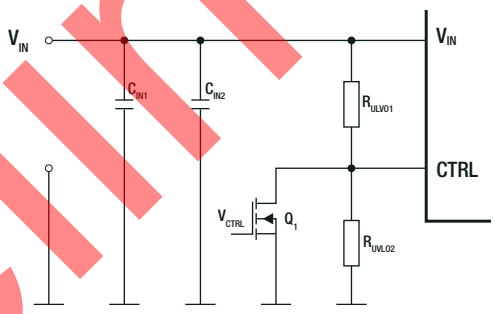
The RPX-2.5 requires MLCC output capacitors for normal operation (see table). Transient load reaction time can be improved by adding a speedup capacitor, C_{FF} across R_{FBT}, but it is not required for normal operation or for output voltages below 2.5V.



Minimum output capacitance			
Set Output Voltage [VDC]		Ceramic Capacitor (C_{OUTn}) [µF]	Feed Forward Capacitor (C_{FF}) [pF]
MIN	MAX		
1.2	<1.5	188 (4 x 47µF)	330
1.5	<2.5	141 (3 x 47µF)	220
2.5	<3.3	94 (2 x 47µF)	100
3.3	<5	94 (2 x 47µF)	100
5	<6	47	100

CTRL ON/OFF

The external CTRL input can also be used to disable the converter by pulling the CTRL pin to ground. An internal pull-up current source allows an external switch, open-collector transistor, open-drain transistor or a 3.3V/5V logic gate to be used to drive the CTRL pin. The UVLO adjust and external CTRL functions can be combined.



REGULATIONS

Parameter	Condition	Min.	Typ.	Max.
Feedback Voltage	no load	0.581VDC	0.596VDC	0.611VDC
Temperature Coefficient	I_{OUT}= 0.2A		0.003%/K	
Line Regulation	low line to high line		±0.2%	
Load Regulation	5 - 100% load		0.2%	
	0 - 5% load		0.5%	
Transient Response	10 <-> 100% load step change recovery time		6ms	200mV
	25% <-> 75% load step change recovery time		125µs	100mV