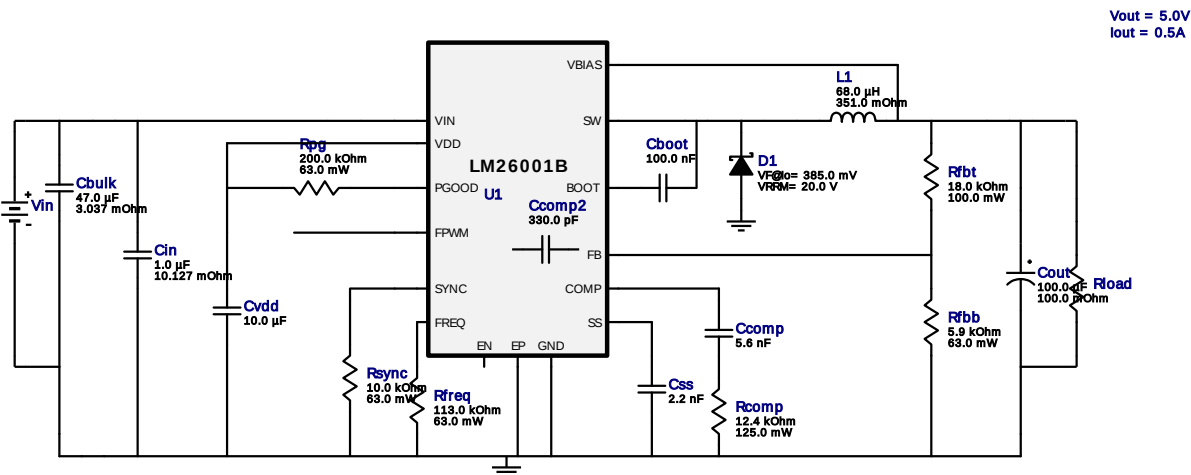


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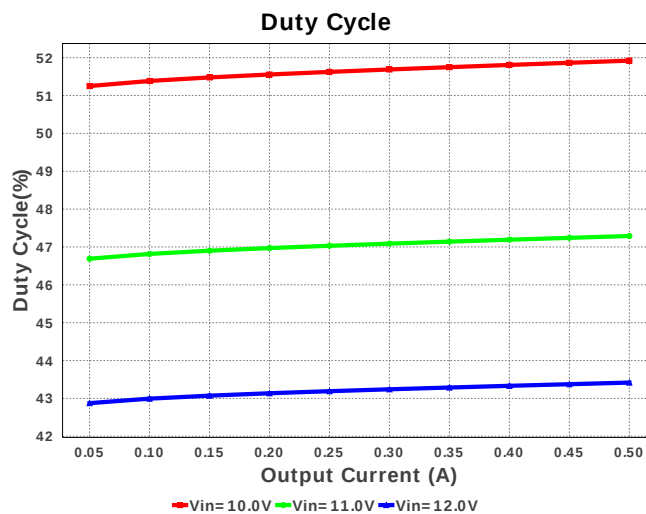
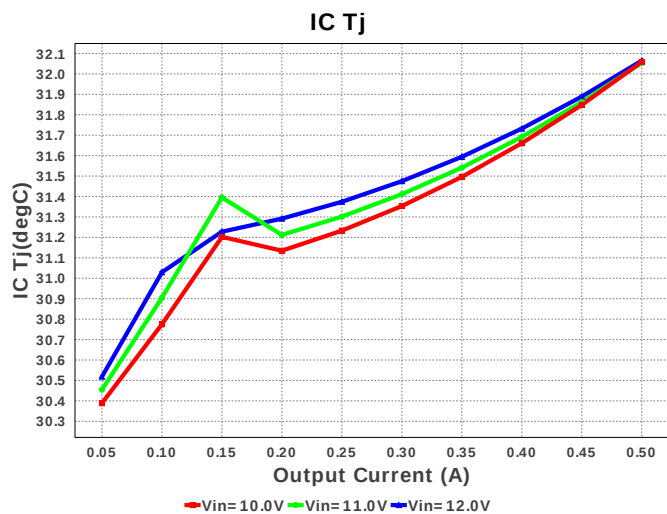
Design : 4742013/262 LM26001BMHX/NOPB
LM26001BMHX/NOPB 10.0V-12.0V to 5.00V @ 0.5A

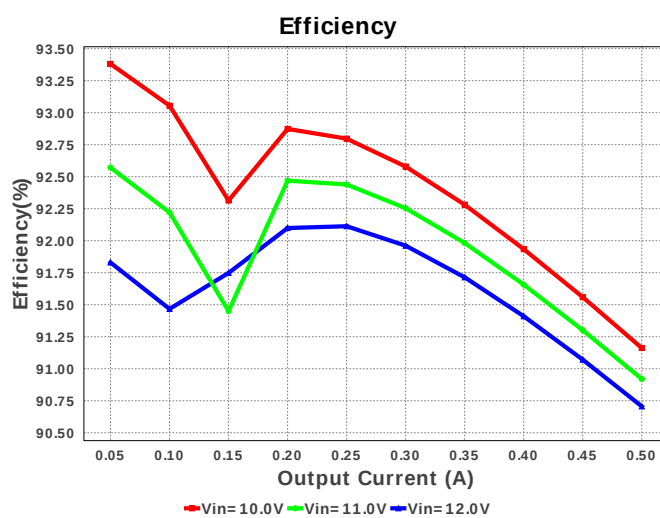
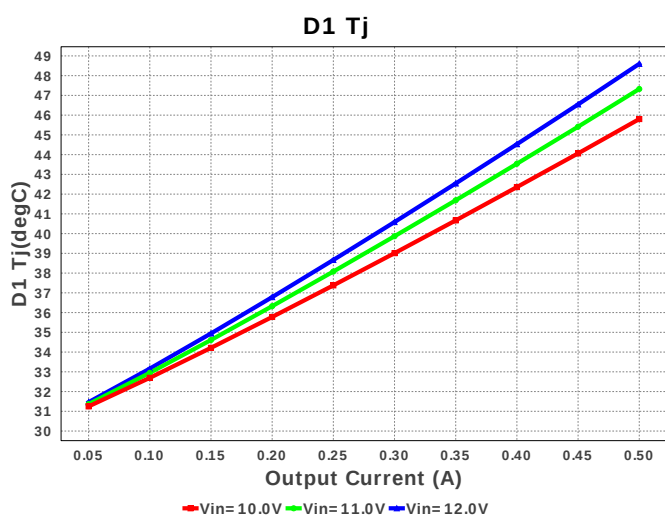
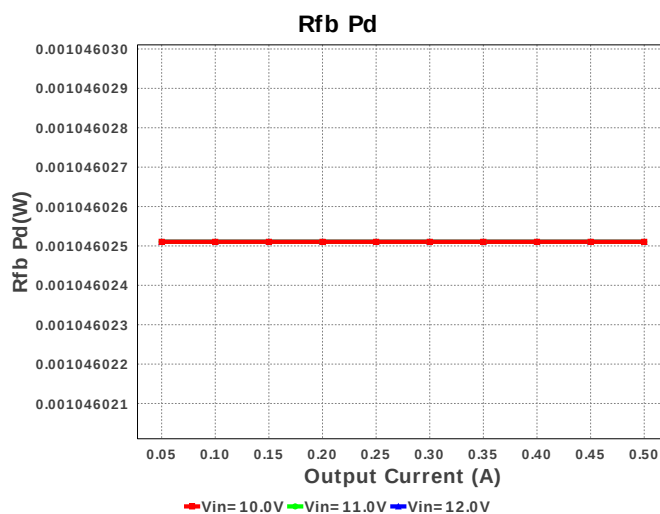
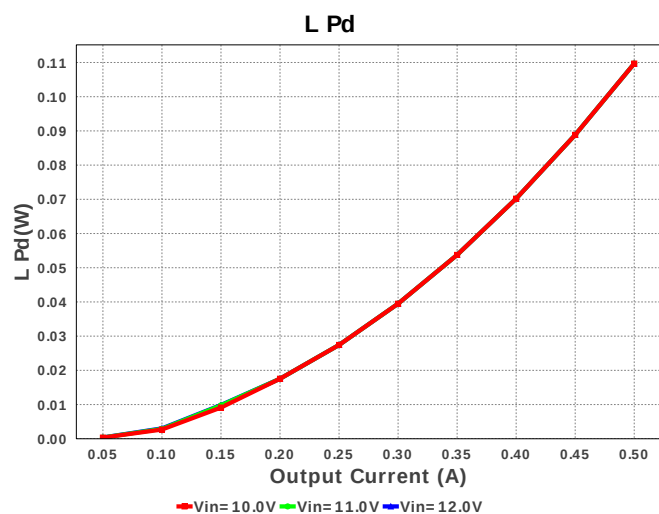
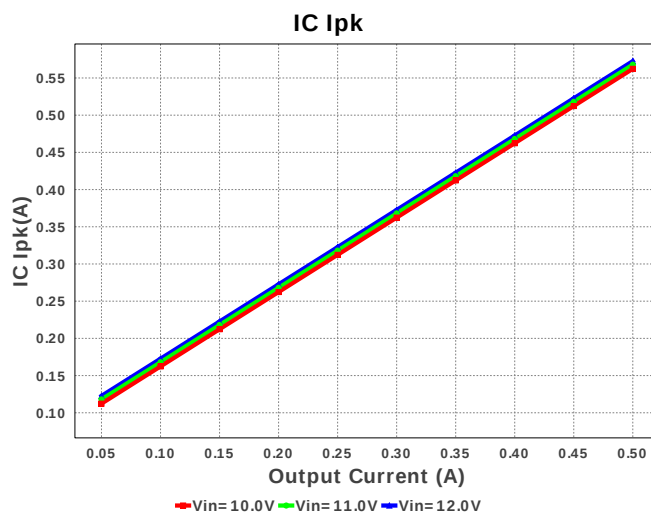
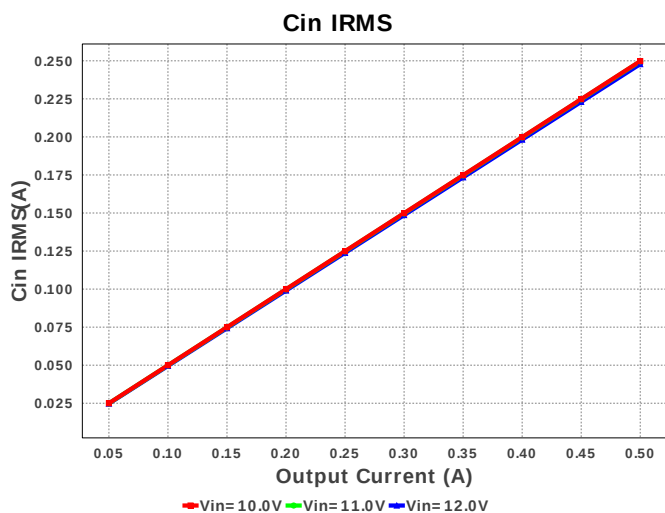


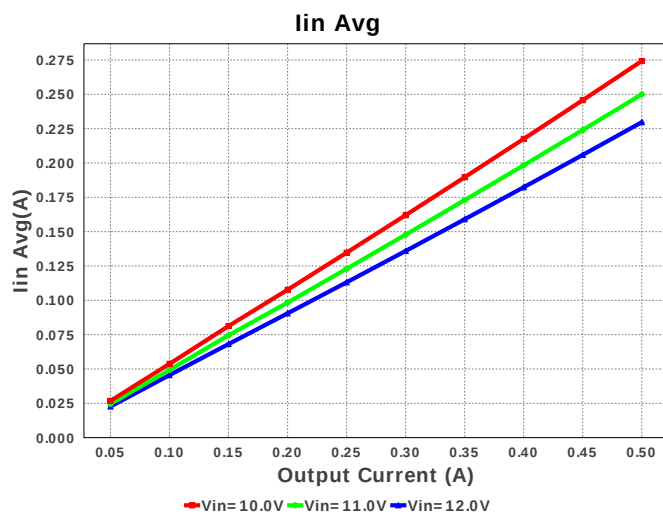
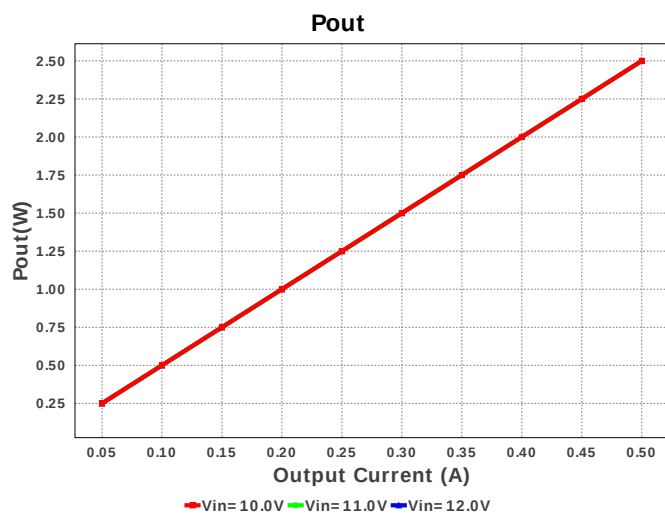
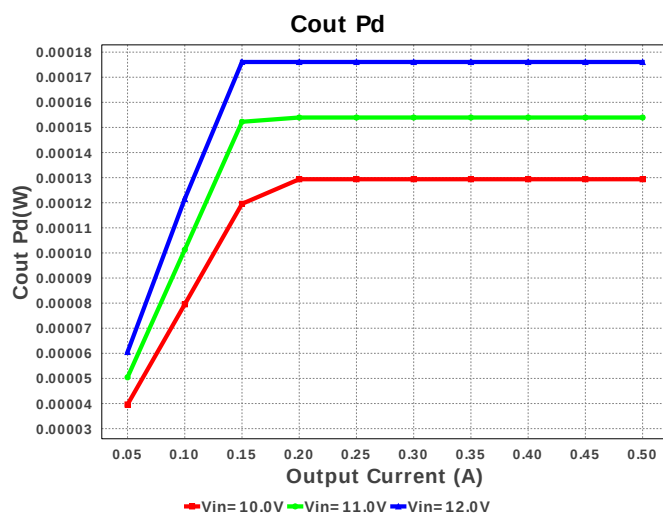
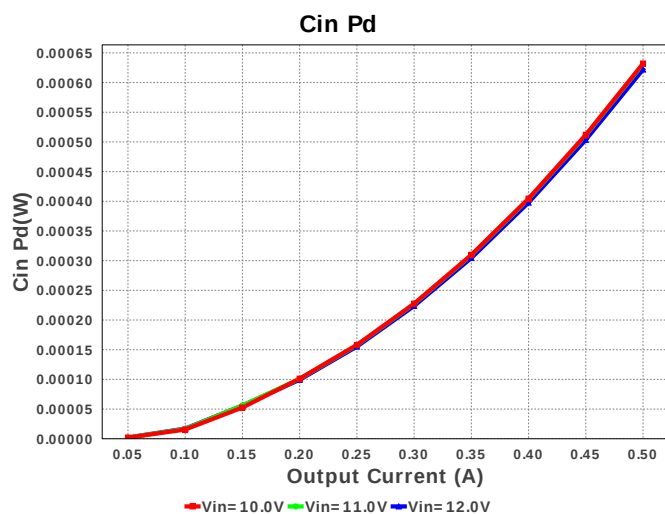
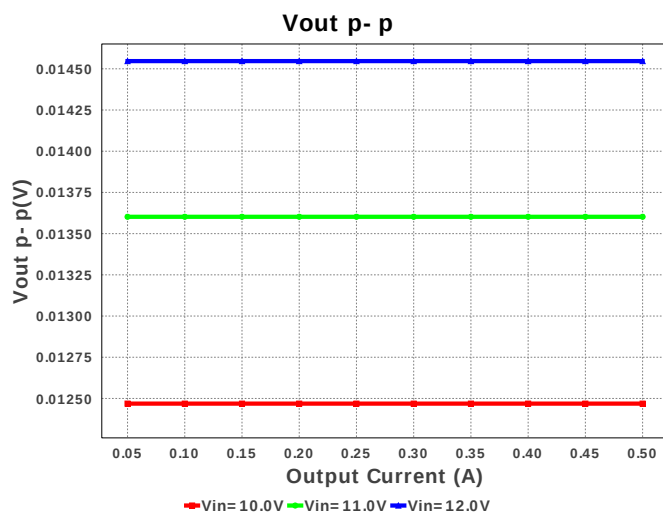
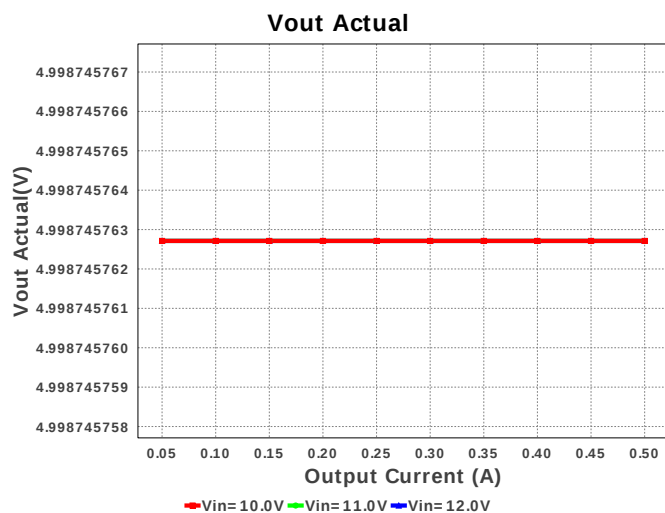
Electrical BOM

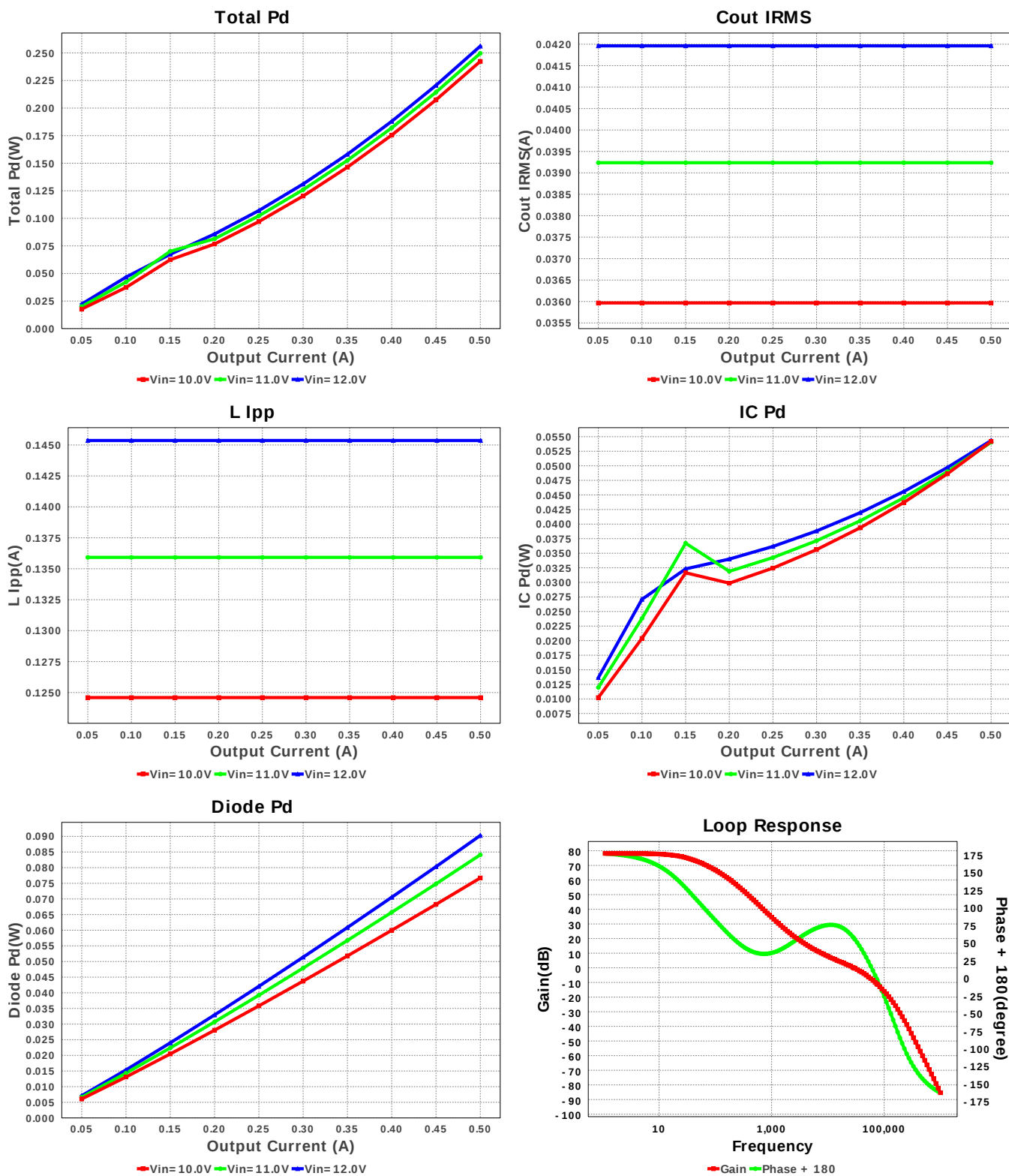
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM21BR71E104KA01L Series= X7R	Cap= 100.0 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
2.	Cbulk	MuRata	GRM32ER61C476ME15L Series= X5R	Cap= 47.0 uF ESR= 3.037 mOhm VDC= 16.0 V IRMS= 4.59346 A	1	\$0.24	 1210_280 15 mm ²
3.	Ccomp	Yageo America	CC0805KRX7R9BB562 Series= X7R	Cap= 5.6 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
4.	Ccomp2	Samsung Electro-Mechanics	CL21C331JBANFNC Series= C0G/NP0	Cap= 330.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
5.	Cin	MuRata	GRM188R61C105KA93D Series= X5R	Cap= 1.0 uF ESR= 10.127 mOhm VDC= 16.0 V IRMS= 994.63 mA	1	\$0.01	 0603 5 mm ²
6.	Cout	Vishay-Sprague	593D107X0010D2TE3 Series= 593D	Cap= 100.0 uF ESR= 100.0 mOhm VDC= 10.0 V IRMS= 1.22 A	1	\$0.27	 7343-31 59 mm ²
7.	Css	Yageo America	CC0805KRX7R9BB222 Series= X7R	Cap= 2.2 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
8.	Cvdd	Taiyo Yuden	LMK212BJ106KG-T Series= X5R	Cap= 10.0 uF VDC= 10.0 V IRMS= 0.0 A	1	\$0.03	 0805 7 mm ²
9.	D1	ON Semiconductor	MBR0520LT1G	Vf@Io= 385.0 mV VRRM= 20.0 V	1	\$0.06	 SOD-123 13 mm ²
10.	L1	Bourns	SRN6045-680M	L= 68.0 uH DCR= 351.0 mOhm	1	\$0.16	 SRN6045 64 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11.	Rcomp	Panasonic	ERJ-6ENF1242V Series= ERJ-6E	Res= 12.4 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
12.	Rfbb	Vishay-Dale	CRCW04025K90FKED Series= CRCW..e3	Res= 5.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
13.	Rfbt	Yageo America	RC0603FR-0718KL Series= ?	Res= 18.0 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	 0603 5 mm ²
14.	Rfreq	Vishay-Dale	CRCW0402113KFKED Series= CRCW..e3	Res= 113.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
15.	Rpg	Vishay-Dale	CRCW0402200KFKED Series= CRCW..e3	Res= 200.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
16.	Rsync	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
17.	U1	Texas Instruments	LM26001BMHX/NOPB	Switcher	1	\$0.80	 MXA16A 59 mm ²









Operating Values

#	Name	Value	Category	Description
1.	BOM Count	17		Total Design BOM count
2.	Total BOM	\$1.67		Total BOM Cost
3.	Cin IRMS	247.824 mA	Current	Input capacitor RMS ripple current
4.	Cout IRMS	41.962 mA	Current	Output capacitor RMS ripple current
5.	IC IpK	572.68 mA	Current	Peak switch current in IC
6.	Iin Avg	229.68 mA	Current	Average input current
7.	L Ipp	145.36 mA	Current	Peak-to-peak inductor ripple current
8.	FootPrint	271.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	324.583 kHz	General	Switching frequency

#	Name	Value	Category	Description
10.	Pout	2.5 W	General	Total output power
11.	D1 Tj	48.597 degC	Op_Point	D1 junction temperature
12.	Low Freq Gain	78.152 dB	Op_Point	Gain at 10Hz
13.	Vout Actual	4.999 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
15.	Cross Freq	28.932 kHz	Op_point	Bode plot crossover frequency
16.	Duty Cycle	43.418 %	Op_point	Duty cycle
17.	Efficiency	90.706 %	Op_point	Steady state efficiency
18.	Gain Marg	-10.876 dB	Op_point	Bode Plot Gain Margin
19.	IC Tj	32.065 degC	Op_point	IC junction temperature
20.	ICThetaJA	38.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
21.	IOUT_OP	500.0 mA	Op_point	Iout operating point
22.	Phase Marg	57.685 deg	Op_point	Bode Plot Phase Margin
23.	VIN_OP	12.0 V	Op_point	Vin operating point
24.	Vout p-p	14.547 mV	Op_point	Peak-to-peak output ripple voltage
25.	Cin Pd	621.97 µW	Power	Input capacitor power dissipation
26.	Cout Pd	176.079 µW	Power	Output capacitor power dissipation
27.	Diode Pd	90.276 mW	Power	Diode power dissipation
28.	IC Pd	54.339 mW	Power	IC power dissipation
29.	L Pd	109.688 mW	Power	Inductor power dissipation
30.	Rfb Pd	1.046 mW	Power	Rfb Power Dissipation
31.	Total Pd	256.158 mW	Power	Total Power Dissipation
32.	Vout Tolerance	2.756 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	500.0 m	Maximum Output Current
2.	VinMax	12.0	Maximum input voltage
3.	VinMin	10.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	LM26001B	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LM26001B** Product Folder : <http://www.ti.com/product/LM26001B> : contains the data sheet and other resources.

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