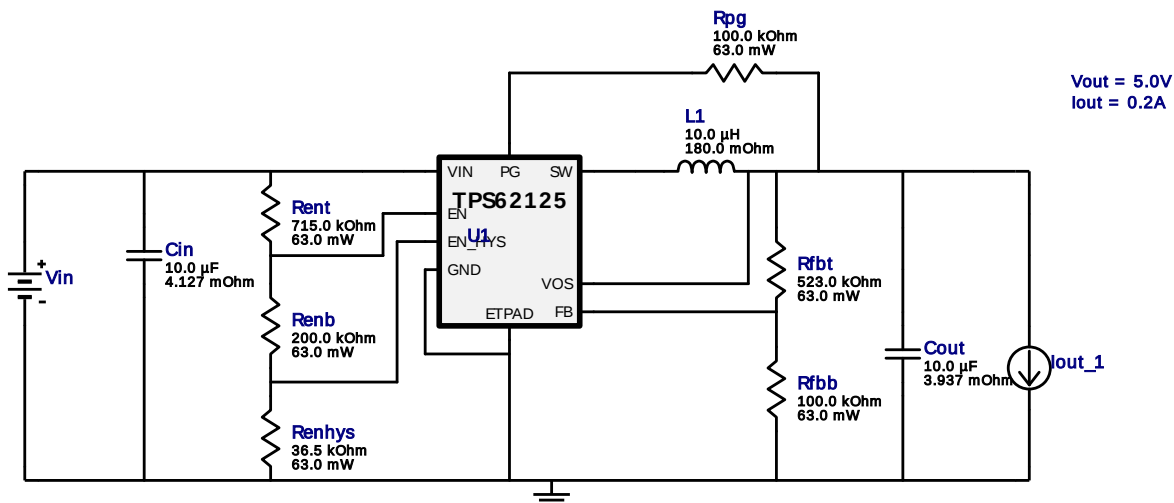


WEBENCH® Design Report

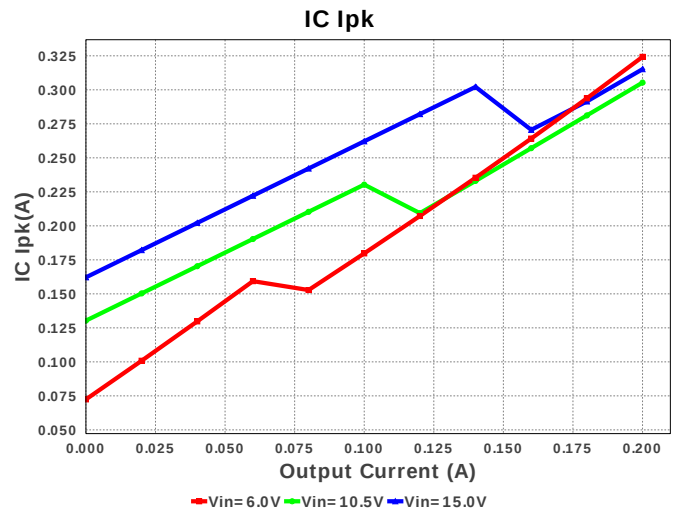
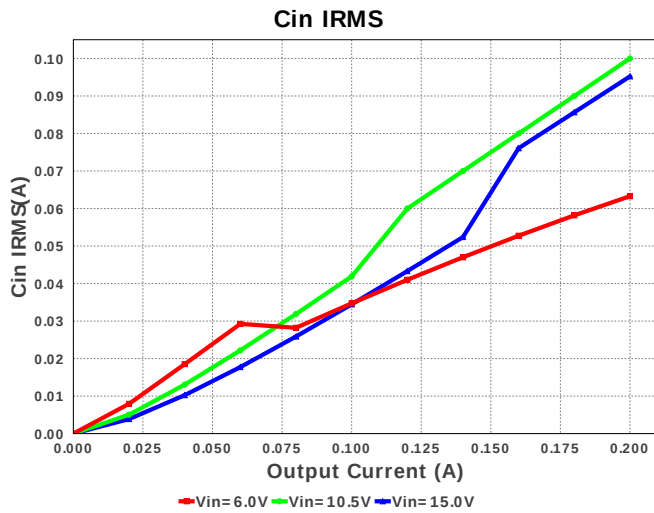
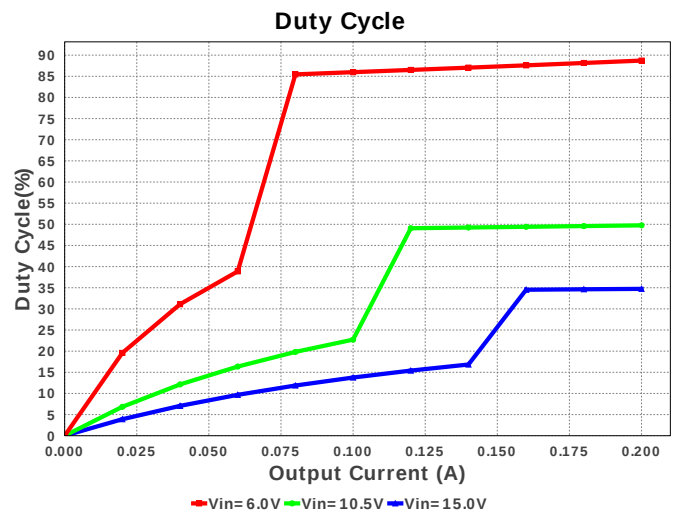
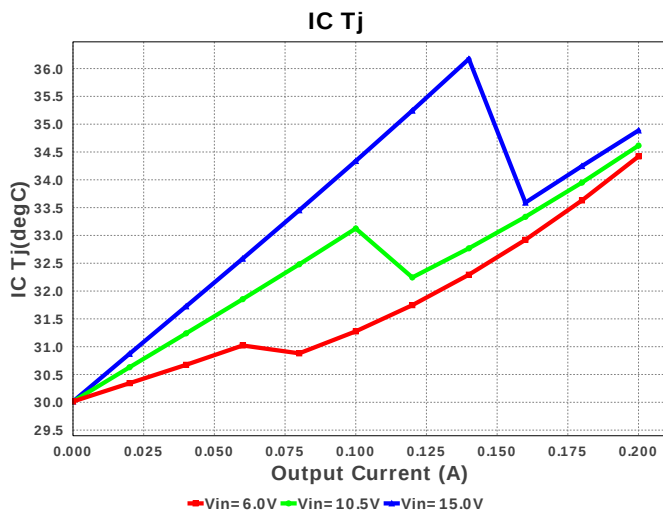
Design : 2425056/73 TPS62125DSGR
TPS62125DSGR 6.0V-15.0V to 5.00V @ 0.2A

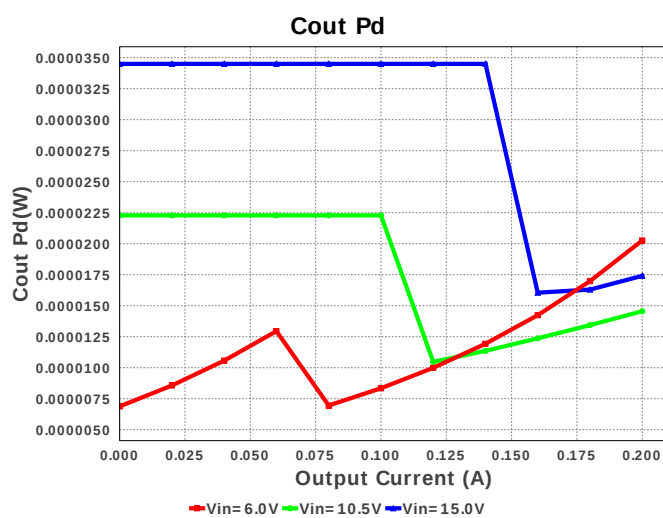
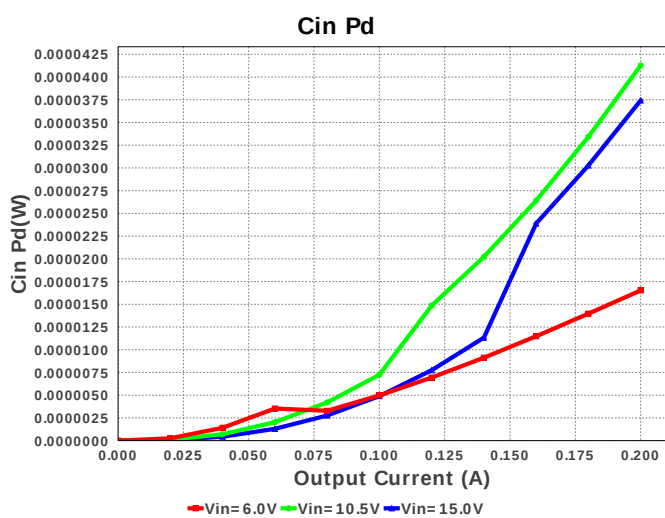
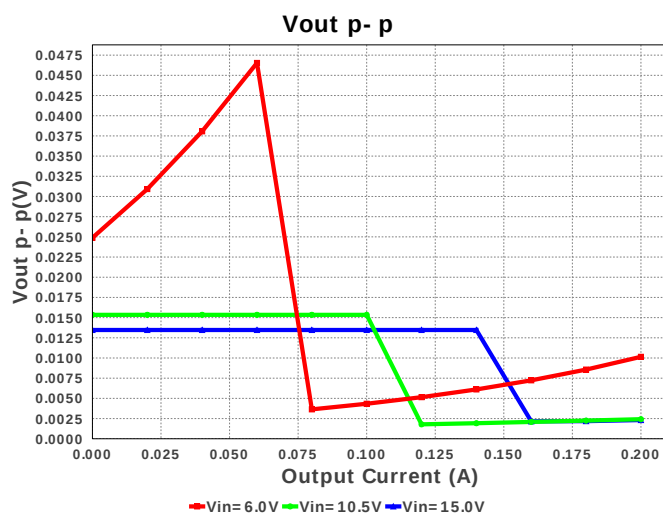
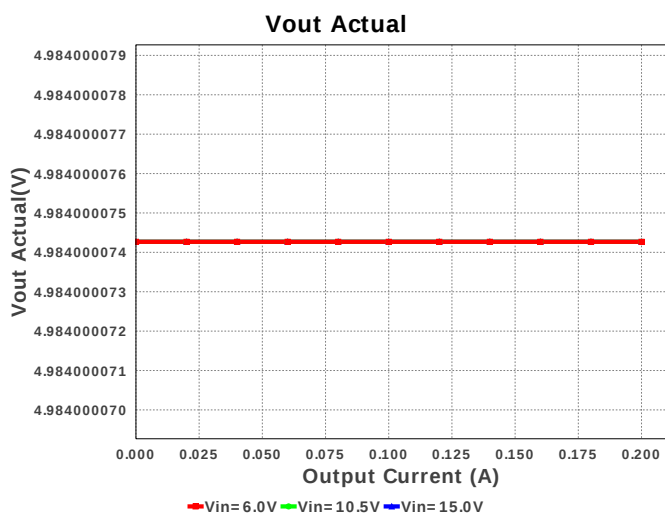
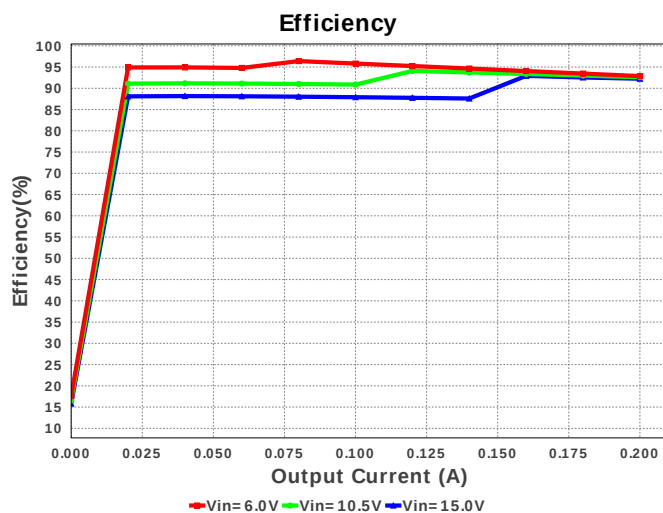
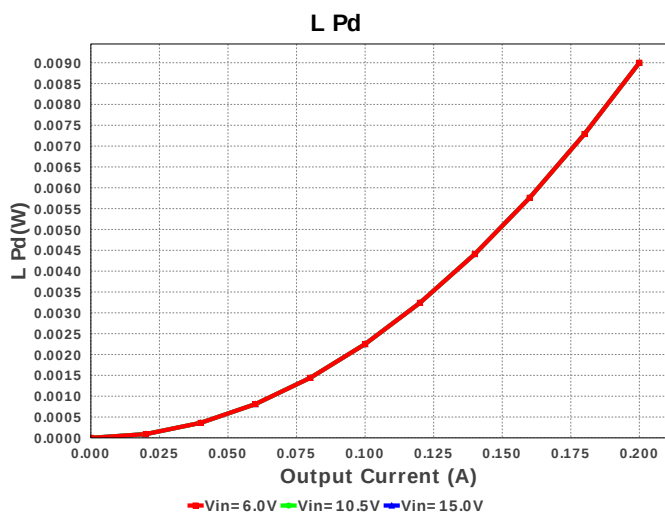


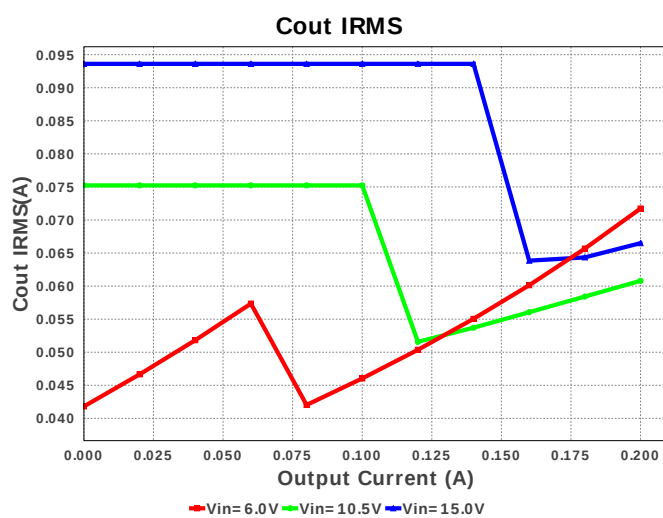
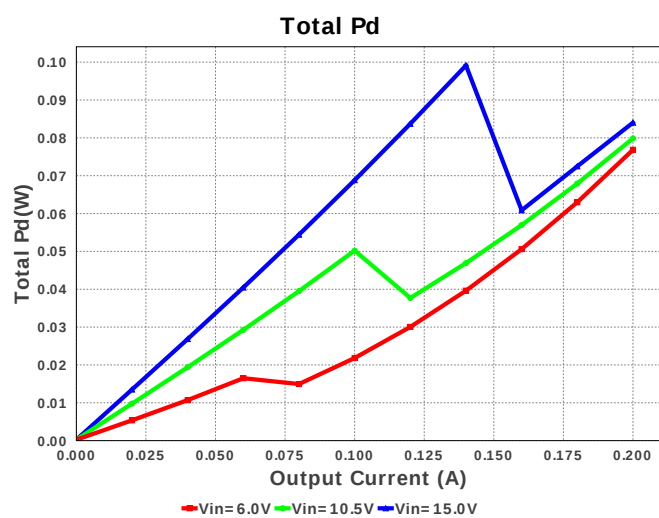
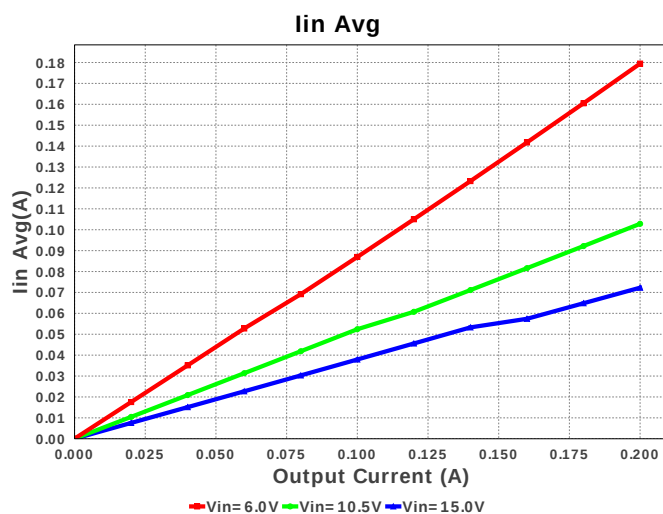
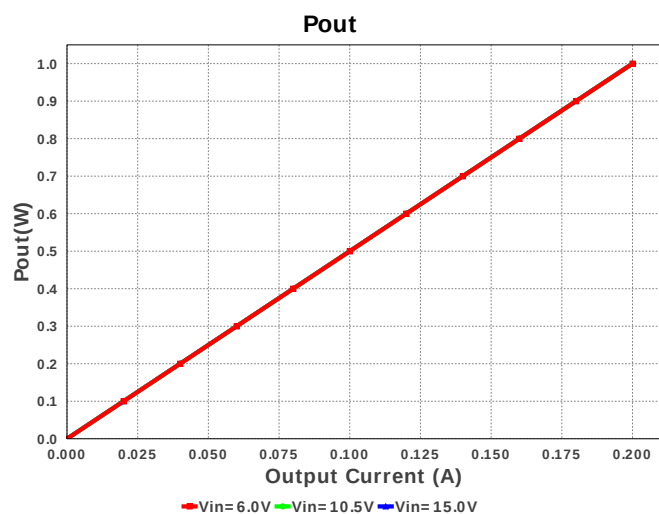
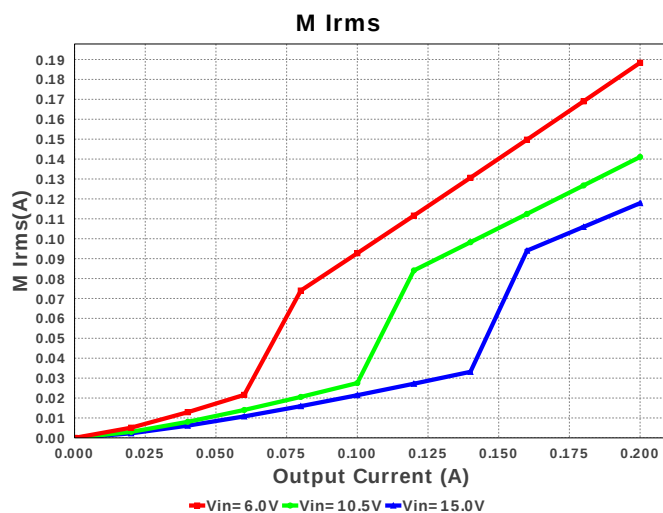
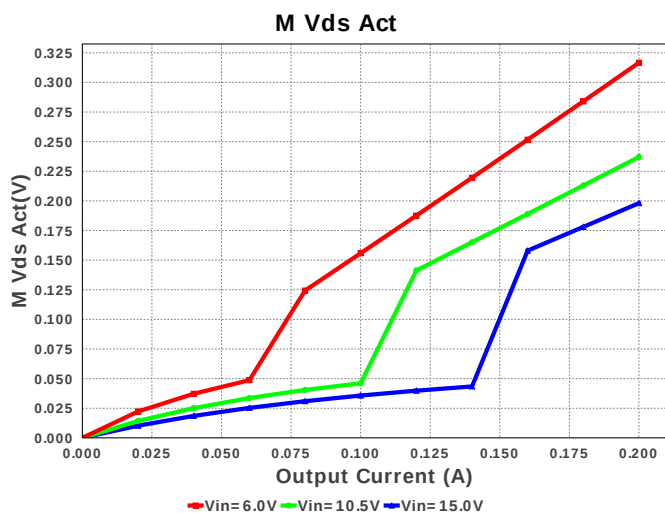
Electrical BOM

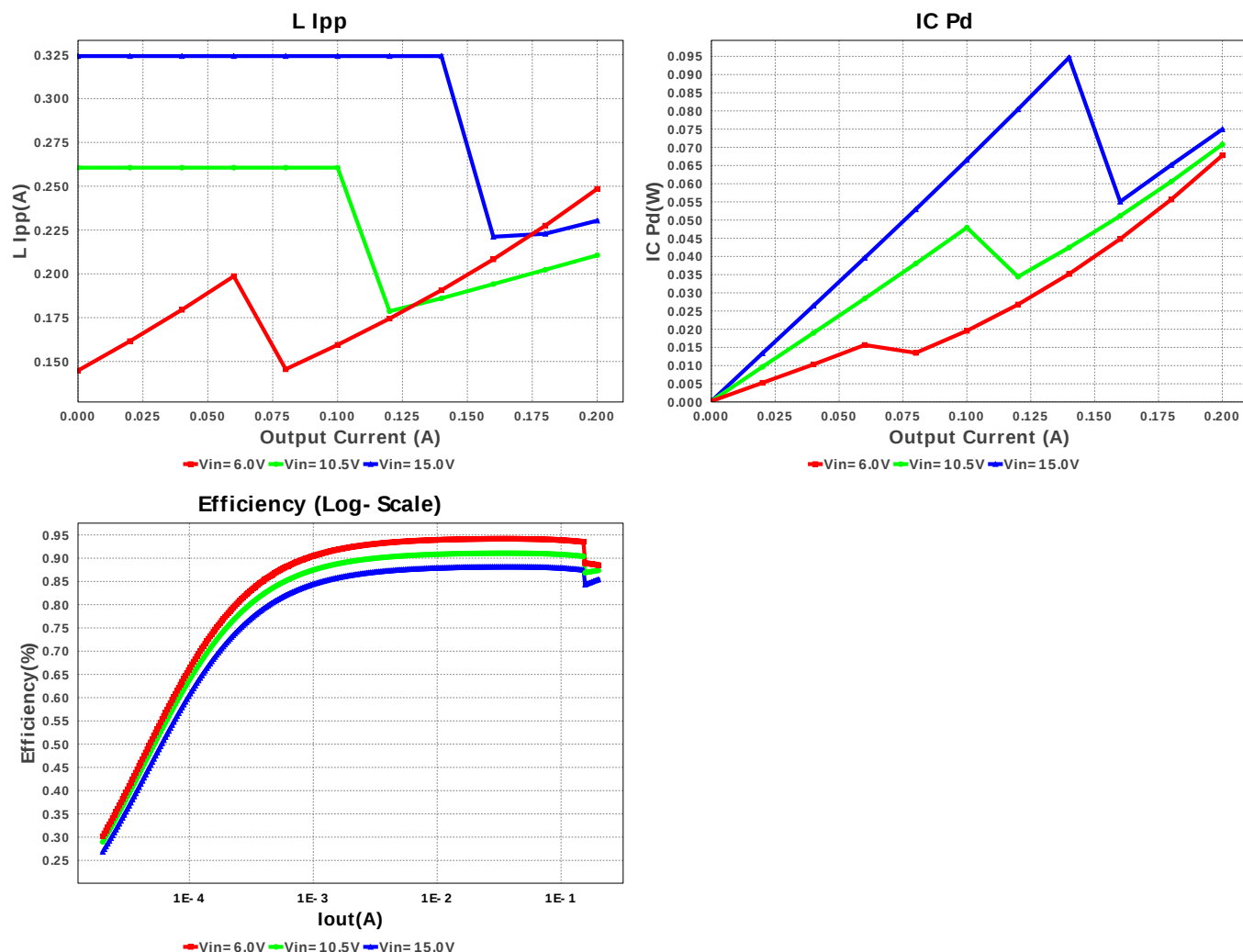
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	MuRata	GRM21BR61C106KE15L Series= X5R	Cap= 10.0 uF ESR= 4.127 mOhm VDC= 16.0 V IRMS= 2.46634 A	1	\$0.03	0805 7 mm ²
2.	Cout	MuRata	GRM219R61A106KE44D Series= X5R	Cap= 10.0 uF ESR= 3.937 mOhm VDC= 10.0 V IRMS= 2.7713 A	1	\$0.03	0805 7 mm ²
3.	L1	Bourns	SDR0403-100ML	L= 10.0 uH DCR= 180.0 mOhm	1	\$0.18	SDR0403 28 mm ²
4.	Renb	Vishay-Dale	CRCW0402200KFKED Series= CRCW..e3	Res= 200.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
5.	Renhys	Vishay-Dale	CRCW040236K5FKED Series= CRCW..e3	Res= 36.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
6.	Rent	Vishay-Dale	CRCW0402715KFKED Series= CRCW..e3	Res= 715.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
7.	Rfbb	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
8.	Rfht	Vishay-Dale	CRCW0402523KFKED Series= CRCW..e3	Res= 523.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
9.	Rpg	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	U1	Texas Instruments	TPS62125DSGR	Switcher	1	\$0.53	 S-PWSON-N8 10 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	95.223 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	66.496 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	315.174 mA	Current	Peak switch current in IC
4.	Iin Avg	72.267 mA	Current	Average input current
5.	L Ipp	230.35 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	117.866 mA	Current	Q lavg
7.	BOM Count	10	General	Total Design BOM count
8.	FootPrint	69.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	1.508 MHz	General	Switching frequency
10.	IC Tolerance	20.2 mV	General	IC Feedback Tolerance
11.	M Vds Act	198.107 mV	General	Voltage drop across the MosFET
12.	Mode	CCM	General	Conduction Mode
13.	Pout	1.0 W	General	Total output power
14.	Total BOM	\$0.83	General	Total BOM Cost
15.	Vout Actual	4.984 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
16.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
17.	Duty Cycle	34.731 %	Op_point	Duty cycle
18.	Efficiency	92.25 %	Op_point	Steady state efficiency
19.	IC Tj	34.887 degC	Op_point	IC junction temperature
20.	ICThetaJA	65.2 degC/W	Op_point	IC junction-to-ambient thermal resistance
21.	IOUT_OP	200.0 mA	Op_point	Iout operating point
22.	VIN_OP	15.0 V	Op_point	Vin operating point
23.	Vout p-p	2.316 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	37.421 μW	Power	Input capacitor power dissipation
25.	Cout Pd	17.408 μW	Power	Output capacitor power dissipation
26.	IC Pd	74.957 mW	Power	IC power dissipation
27.	L Pd	9.0 mW	Power	Inductor power dissipation
28.	Total Pd	84.01 mW	Power	Total Power Dissipation
29.	Vout Tolerance	4.264 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	200.0 m	Maximum Output Current
2.	VinMax	15.0	Maximum input voltage
3.	VinMin	6.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	TPS62125	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS62125** Product Folder : <http://www.ti.com/product/TPS62125> : contains the data sheet and other resources.

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