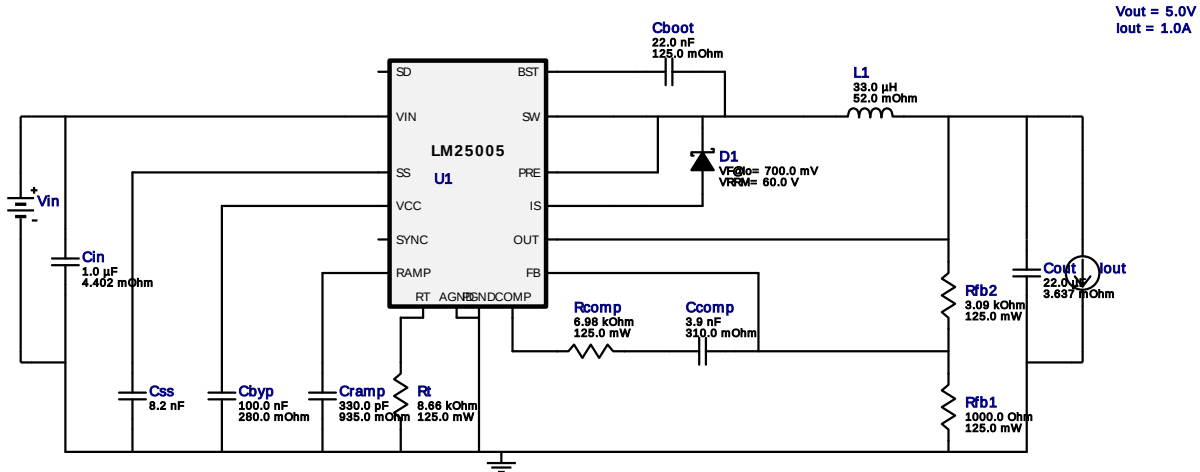


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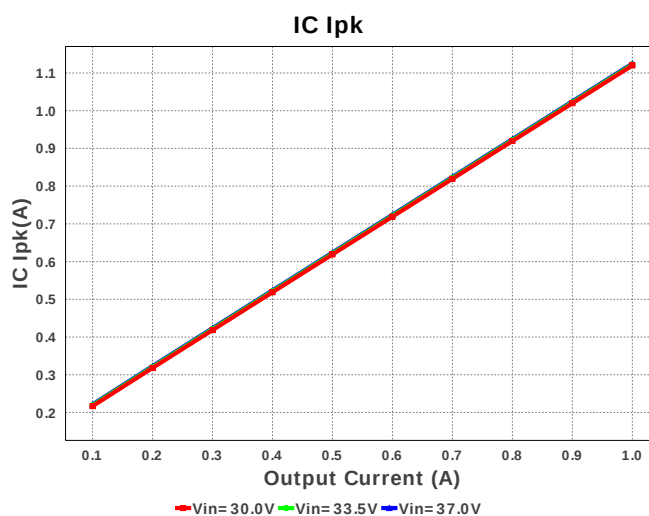
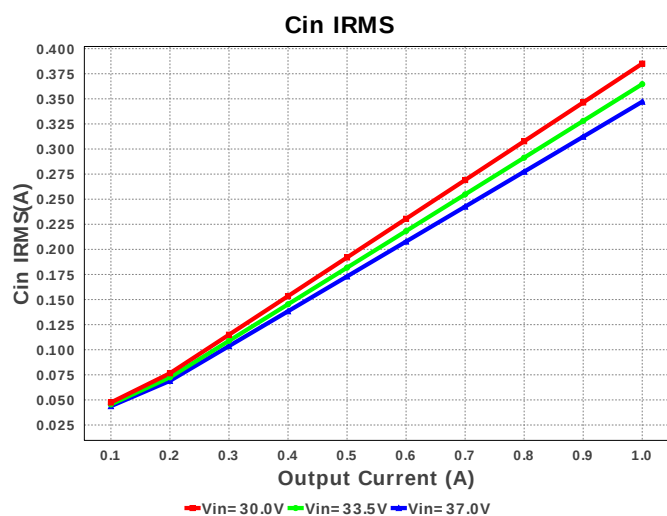
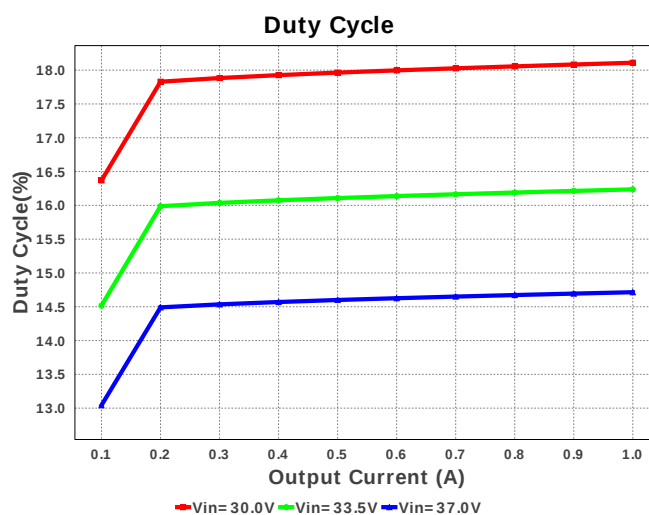
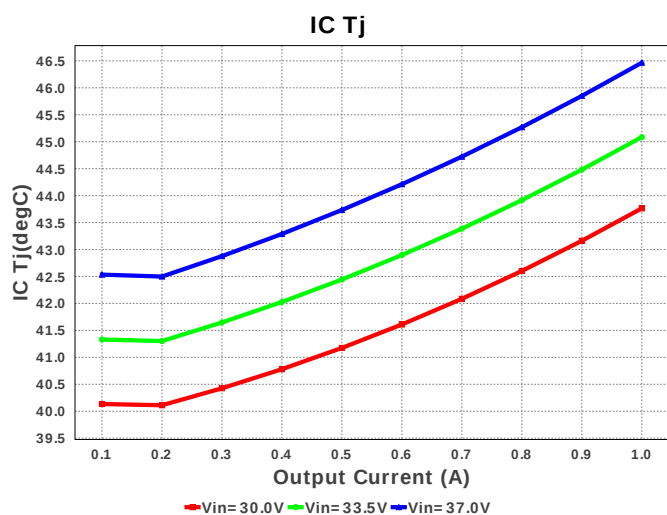
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LM25005MHX/NOPB 30.0V-37.0V to 5.00V @ 1.0A

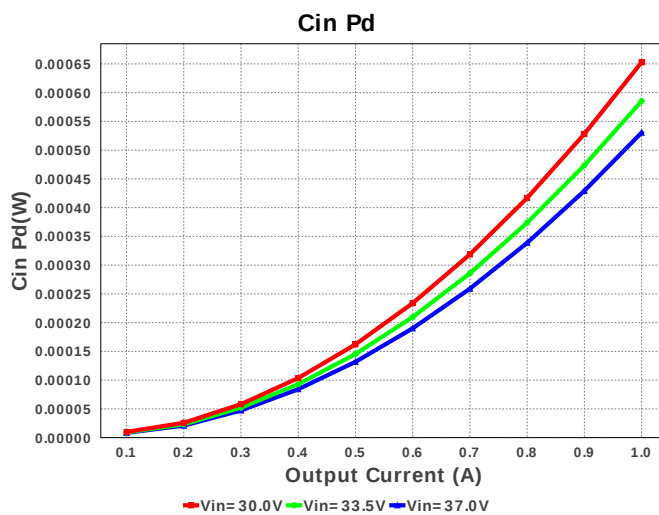
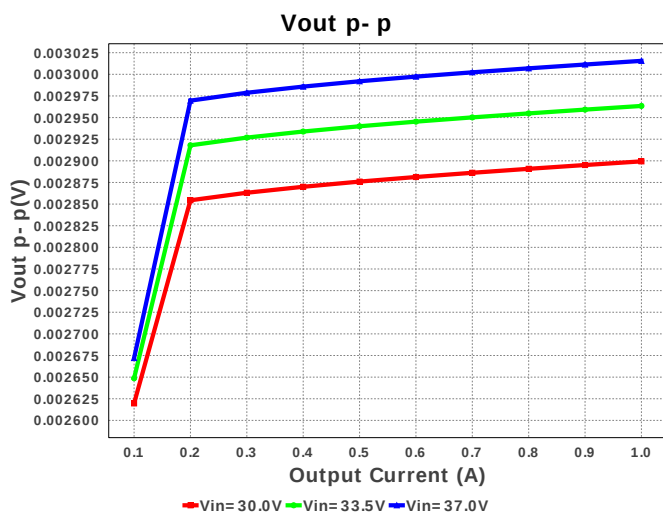
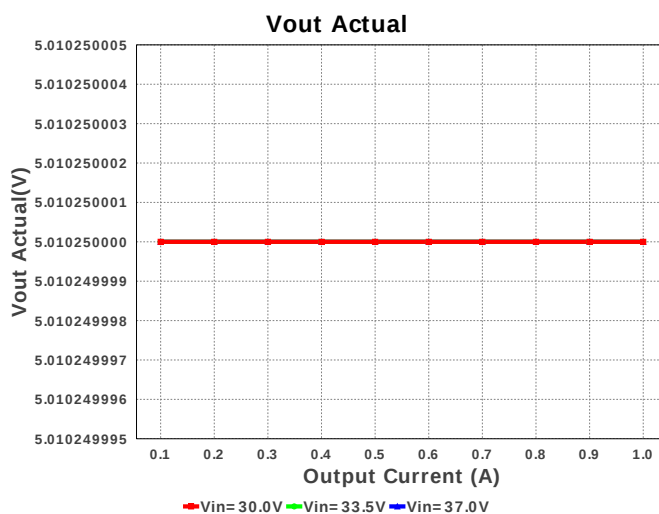
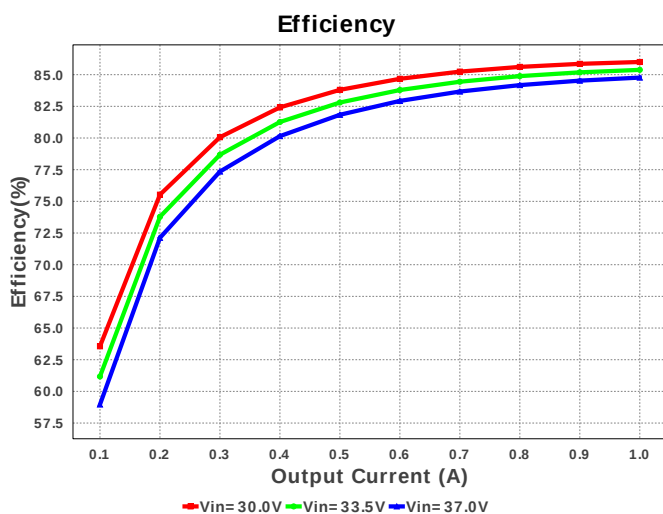
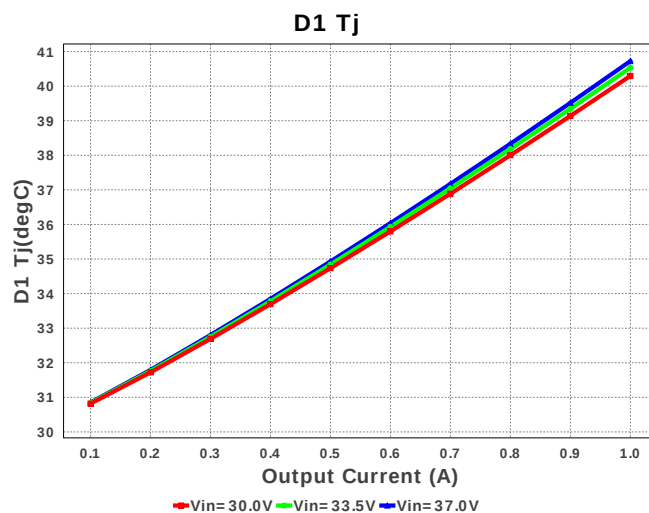
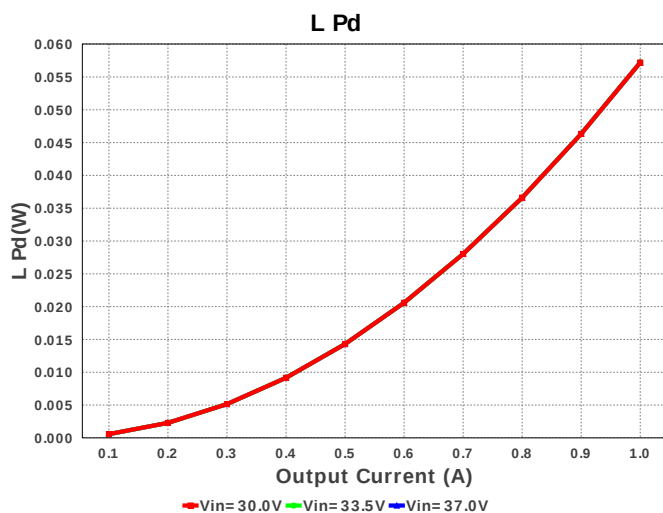


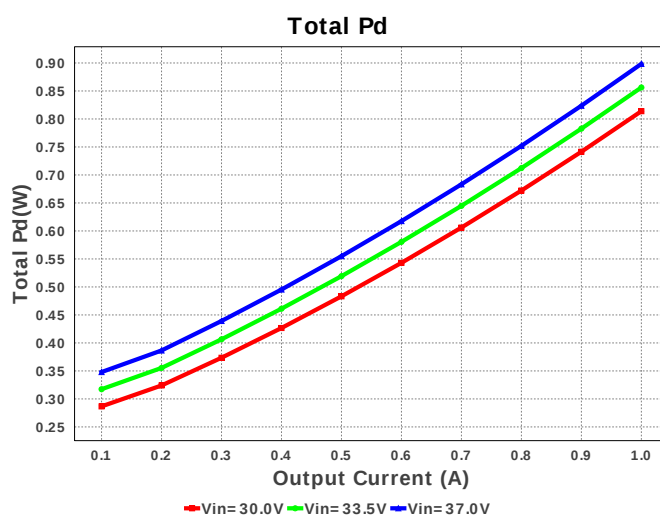
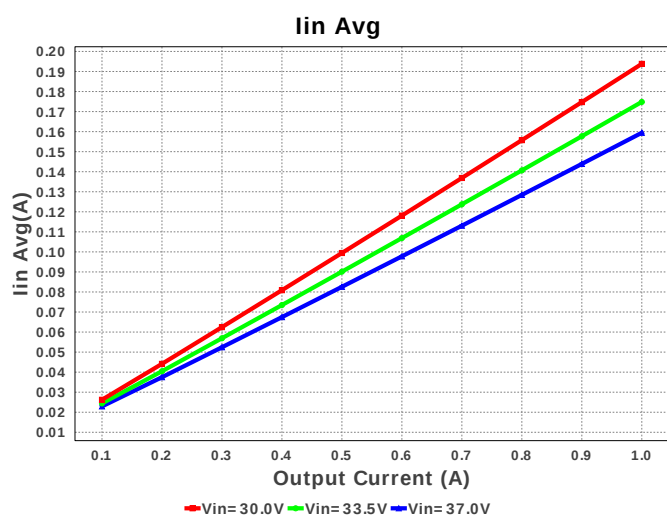
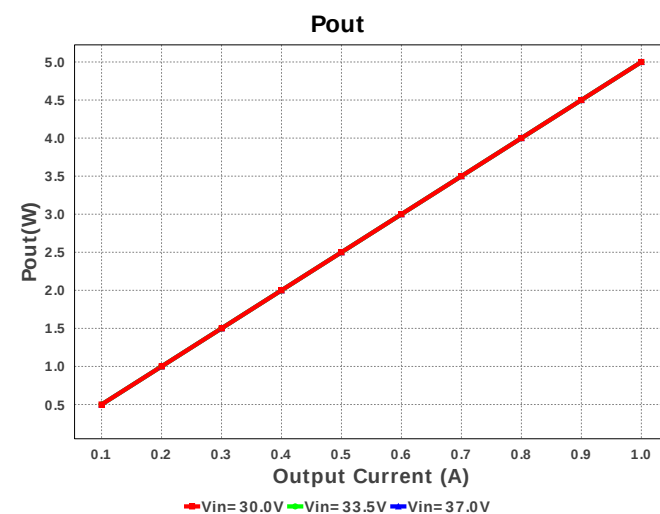
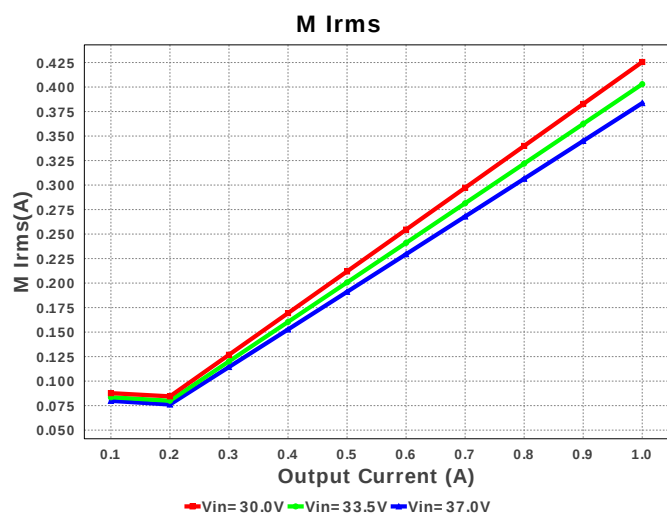
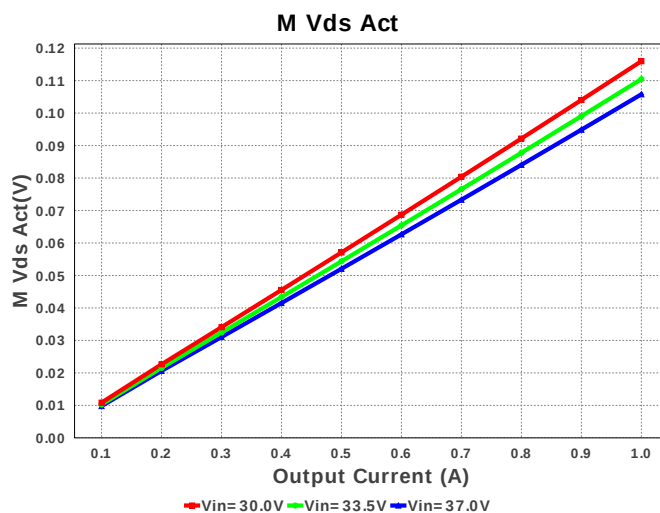
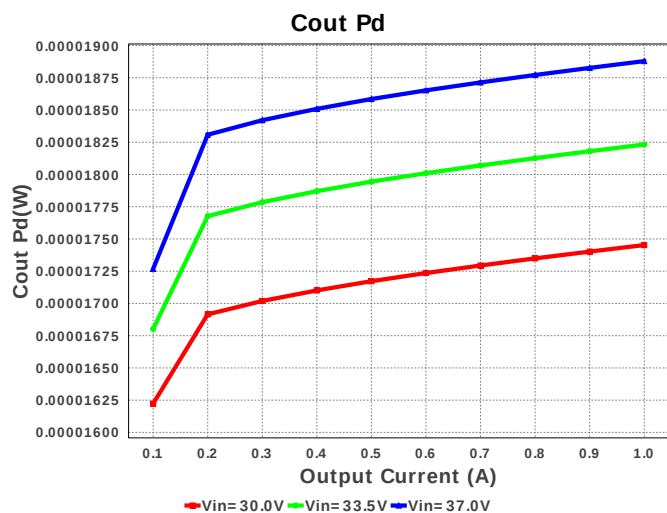
Electrical BOM

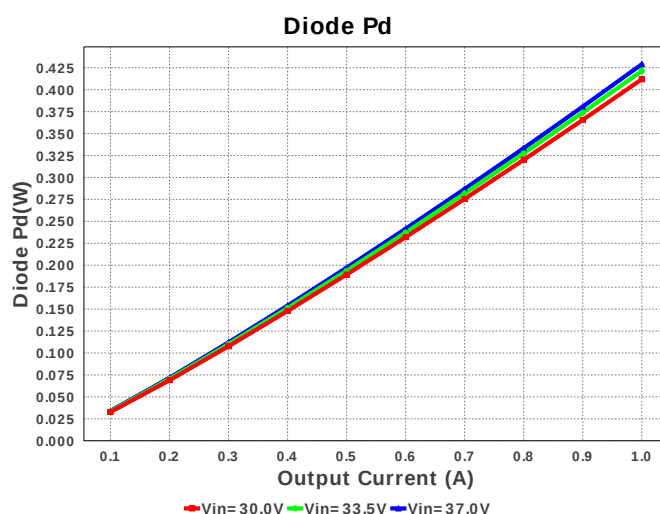
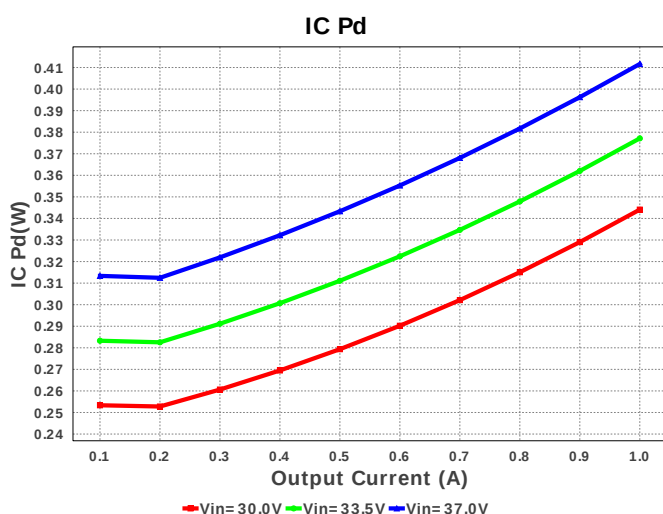
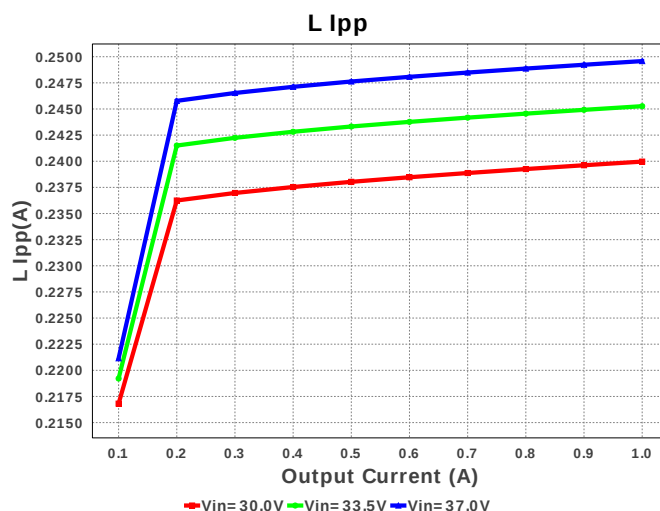
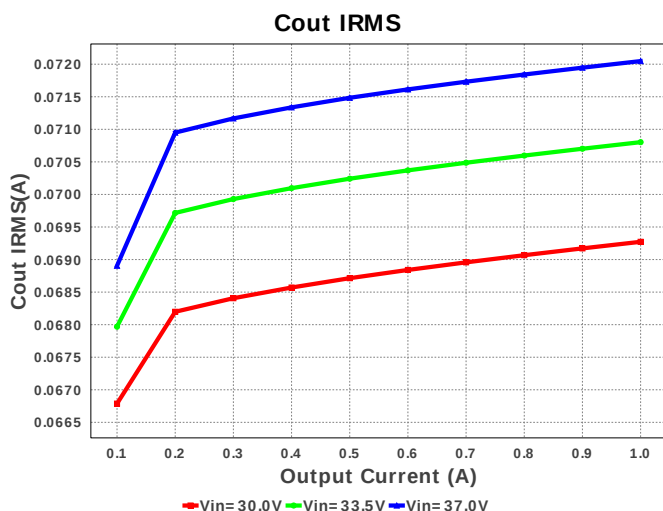
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Kemet	C0805C223K5RACTU Series= X7R	Cap= 22.0 nF ESR= 125.0 mOhm VDC= 50.0 V IRMS= 645.0 mA	1	\$0.01	0805 7 mm ²
2.	Cbyp	AVX	08053C104KAT2A Series= X7R	Cap= 100.0 nF ESR= 280.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
3.	Ccomp	Kemet	C0805C392K5RACTU Series= X7R	Cap= 3.9 nF ESR= 310.0 mOhm VDC= 50.0 V IRMS= 350.0 mA	1	\$0.01	0805 7 mm ²
4.	Cin	MuRata	GRM21BR71H105KA12L Series= X7R	Cap= 1.0 uF ESR= 4.402 mOhm VDC= 50.0 V IRMS= 1.677 A	1	\$0.05	0805 7 mm ²
5.	Cout	MuRata	GRM31CR61A226KE19L Series= X5R	Cap= 22.0 uF ESR= 3.637 mOhm VDC= 10.0 V IRMS= 3.56456 A	1	\$0.07	1206_190 11 mm ²
6.	Cramp	Kemet	C0805C331K5RACTU Series= X7R	Cap= 330.0 pF ESR= 935.0 mOhm VDC= 50.0 V IRMS= 167.0 mA	1	\$0.01	0805 7 mm ²
7.	Css	MuRata	GRM155R71E822KA01D Series= X7R	Cap= 8.2 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0402 3 mm ²
8.	D1	Diodes Inc.	B260A-13-F	VF@Io= 700.0 mV VRRM= 60.0 V	1	\$0.09	SMA 37 mm ²
9.	L1	Bourns	SRR1210-330M	L= 33.0 uH DCR= 52.0 mOhm	1	\$0.44	SRR1210 196 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	Rcomp	Panasonic	ERJ-6ENF6981V Series= ERJ-6E	Res= 6.98 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
11.	Rfb1	Panasonic	ERJ-6ENF1001V Series= ERJ-6E	Res= 1000.0 Ohm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
12.	Rfb2	Panasonic	ERJ-6ENF3091V Series= ERJ-6E	Res= 3.09 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
13.	Rt	Panasonic	ERJ-6ENF8661V Series= ERJ-6E	Res= 8.66 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
14.	U1	Texas Instruments	LM25005MHX/NOPB	Switcher	1	\$1.40	 MXA20A 71 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	347.146 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	72.048 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	1.124 A	Current	Peak switch current in IC
4.	Iin Avg	159.42 mA	Current	Average input current
5.	L Ipp	249.58 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	383.601 mA	Current	Q lavg
7.	BOM Count	14	General	Total Design BOM count
8.	FootPrint	379.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	571.723 kHz	General	Switching frequency
10.	IC Tolerance	18.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	105.781 mV	General	Voltage drop across the MosFET
12.	Pout	5.0 W	General	Total output power
13.	Total BOM	\$2.14	General	Total BOM Cost
14.	D1 Tj	40.724 degC	Op_Point	D1 junction temperature
15.	Vout Actual	5.01 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	14.715 %	Op_point	Duty cycle
18.	Efficiency	84.769 %	Op_point	Steady state efficiency
19.	IC Tj	46.466 degC	Op_point	IC junction temperature
20.	ICThetaJA	40.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
21.	IOUT_OP	1.0 A	Op_point	Iout operating point
22.	VIN_OP	37.0 V	Op_point	Vin operating point
23.	Vout p-p	3.016 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	530.487 μ W	Power	Input capacitor power dissipation
25.	Cout Pd	18.879 μ W	Power	Output capacitor power dissipation
26.	Diode Pd	428.978 mW	Power	Diode power dissipation
27.	IC Pd	411.638 mW	Power	IC power dissipation
28.	L Pd	57.2 mW	Power	Inductor power dissipation
29.	Total Pd	898.407 mW	Power	Total Power Dissipation
30.	Vout Tolerance	3.018 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	VinMax	37.0	Maximum input voltage
3.	VinMin	30.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	LM25005	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LM25005** Product Folder : <http://www.ti.com/product/LM25005> : contains the data sheet and other resources.

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