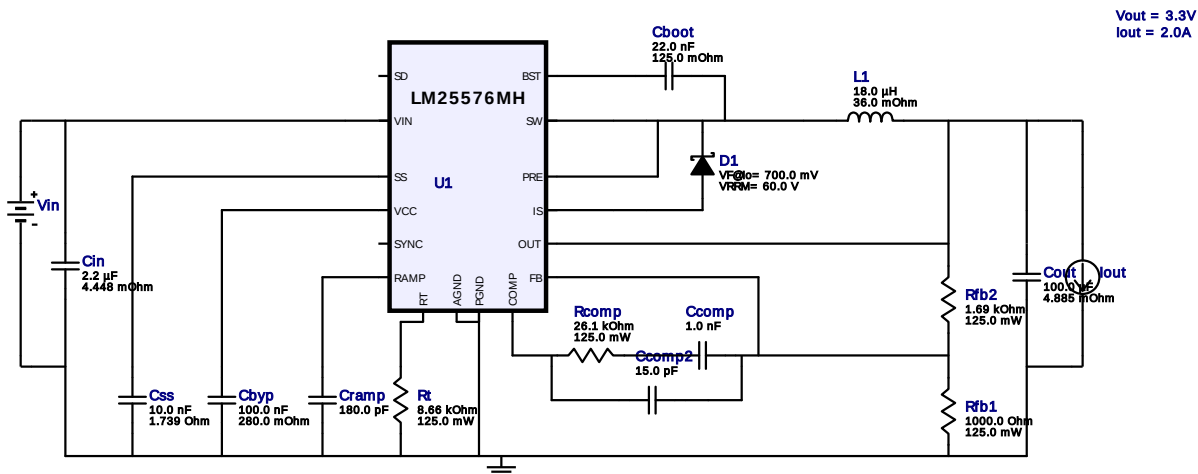


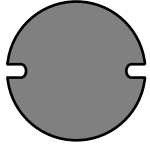
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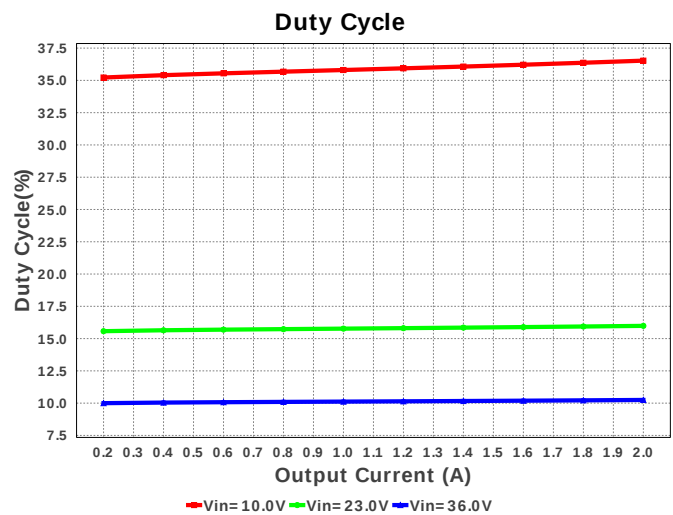
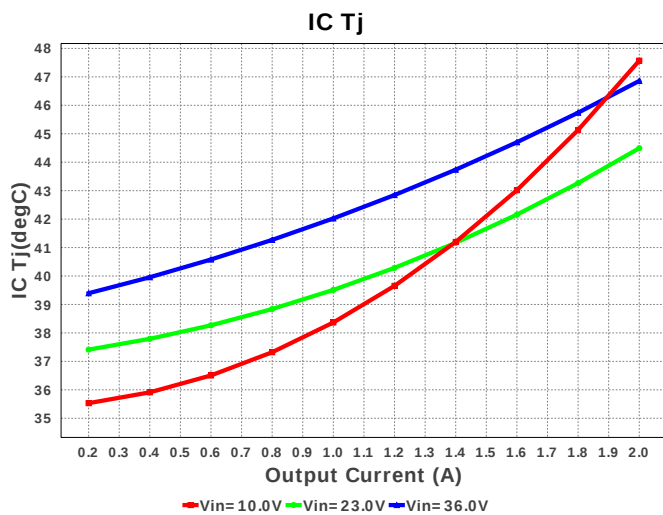
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LM25576MHX/NOPB 10.0V-36.0V to 3.30V @ 2.0A

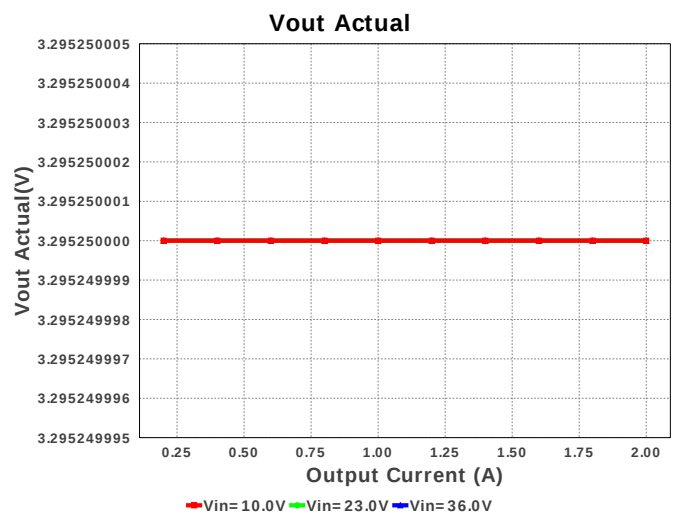
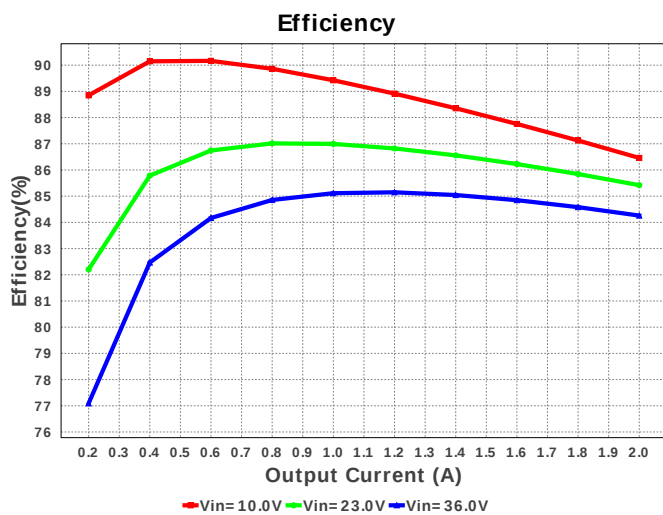
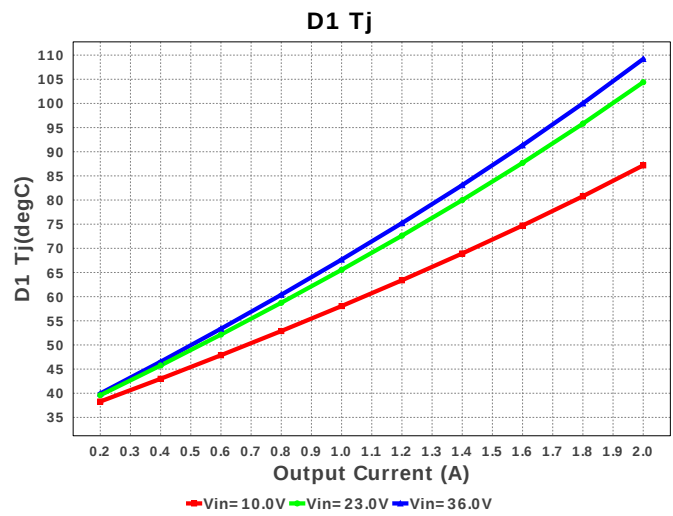
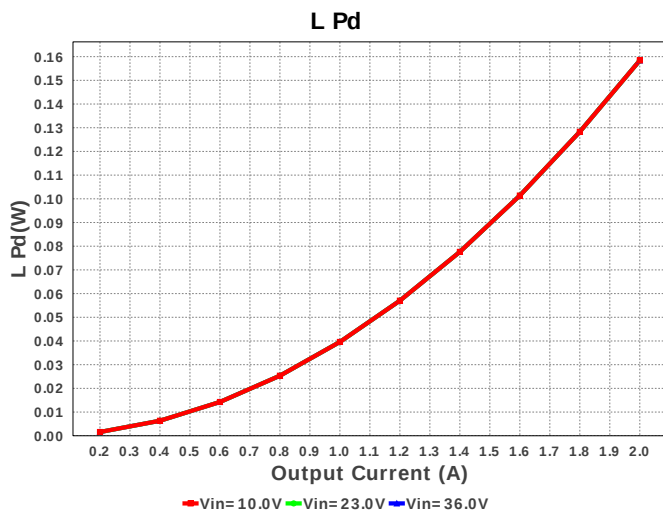
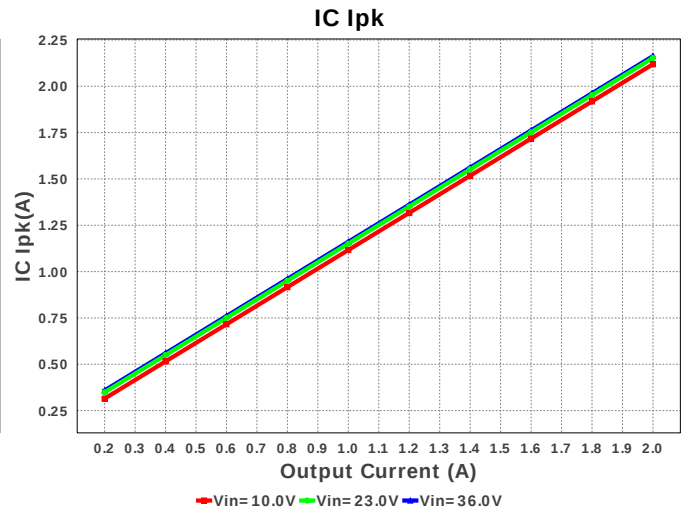
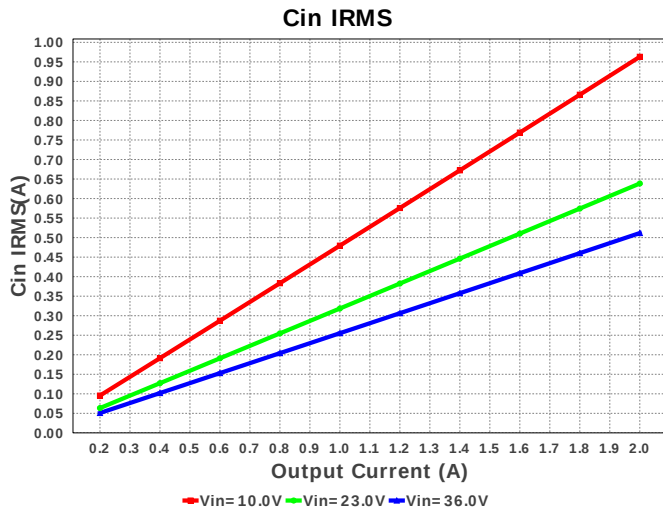


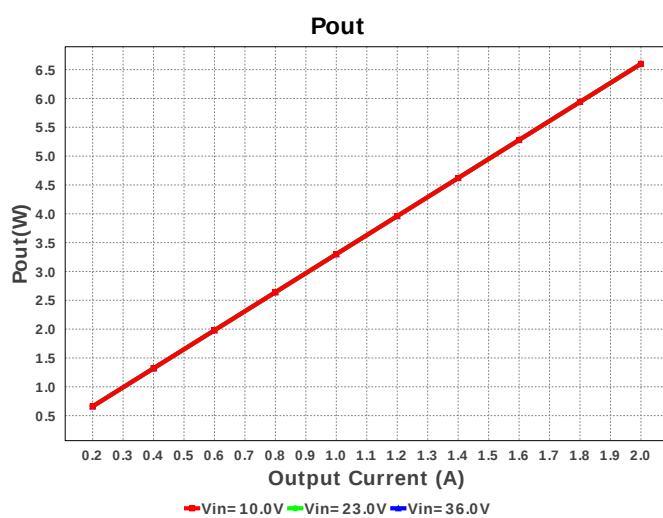
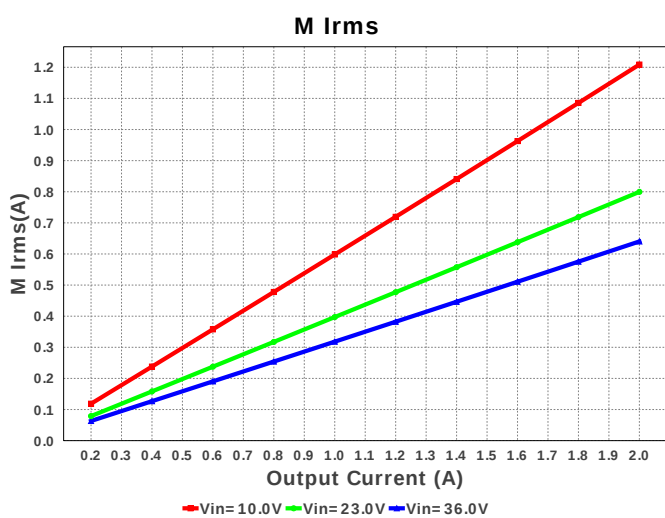
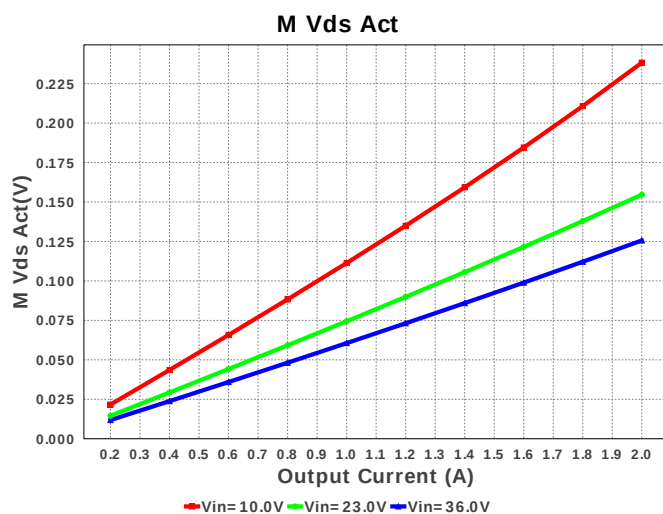
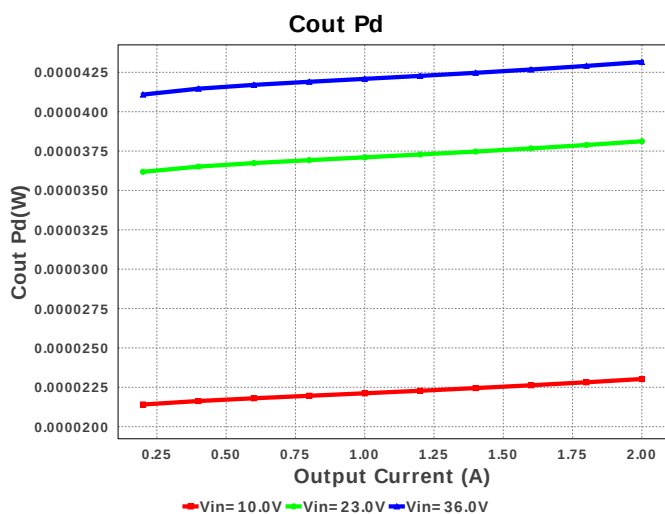
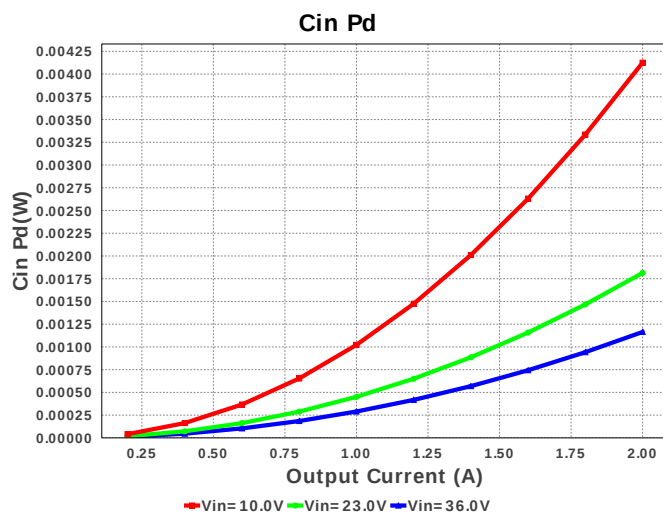
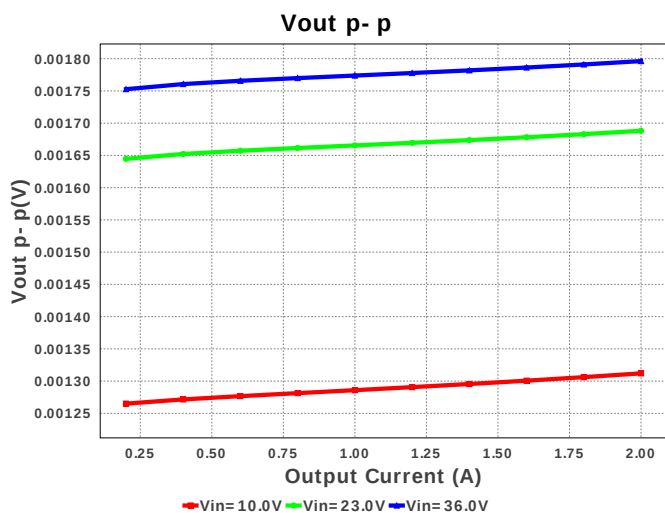
Electrical BOM

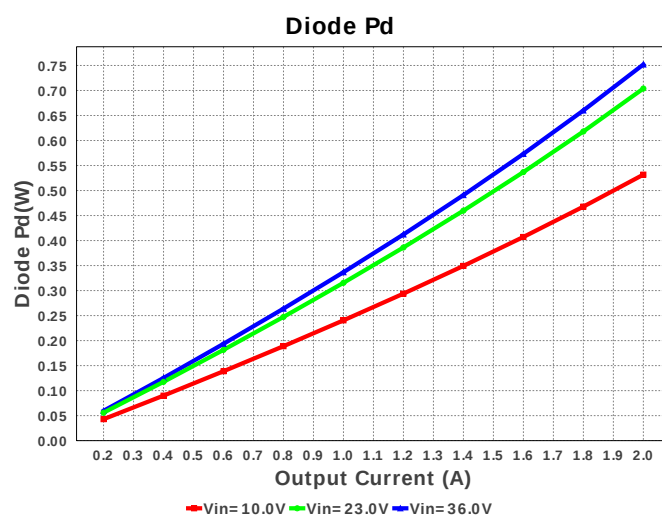
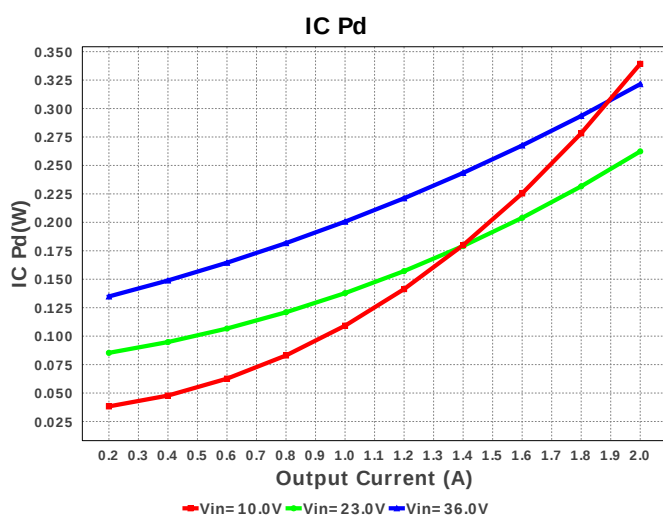
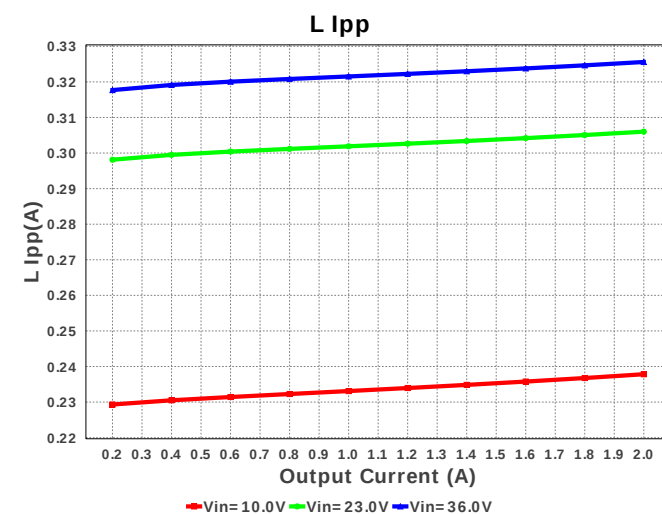
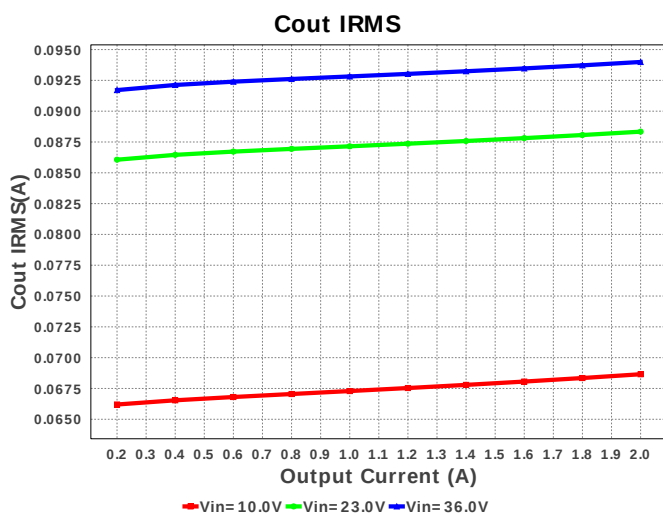
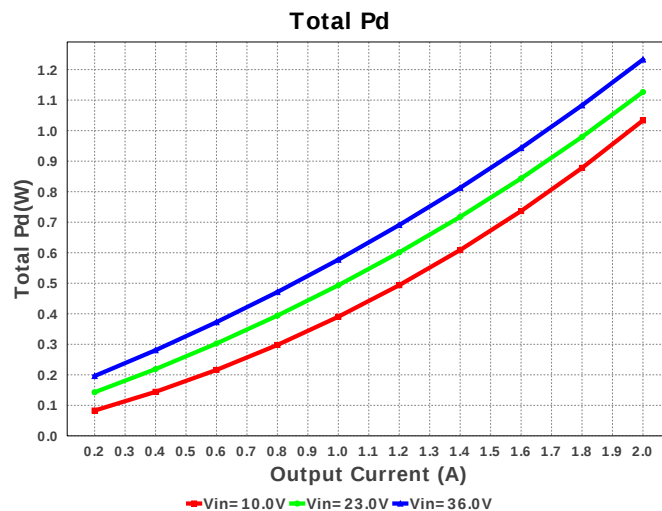
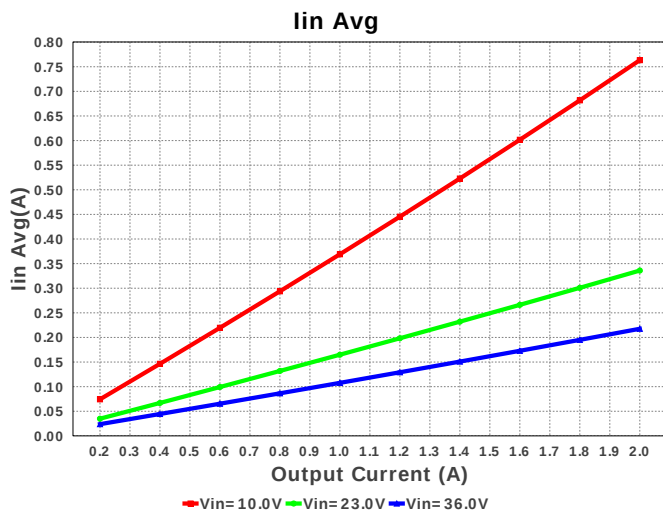
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Kemet	C0805C223K5RACTU Series= X7R	Cap= 22.0 nF ESR= 125.0 mOhm VDC= 50.0 V IRMS= 645.0 mA	1	\$0.01	0805 7 mm ²
2.	Cbyp	AVX	08053C104KAT2A Series= X7R	Cap= 100.0 nF ESR= 280.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
3.	Ccomp	MuRata	GRM216R71E102KA01D Series= X7R	Cap= 1.0 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
4.	Ccomp2	Yageo America	CC0805JRNPO9BN150 Series= C0G/NP0	Cap= 15.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
5.	Cin	MuRata	GRM31CR71H225KA88L Series= X7R	Cap= 2.2 uF ESR= 4.448 mOhm VDC= 50.0 V IRMS= 2.2252 A	1	\$0.05	1206_190 11 mm ²
6.	Cout	MuRata	GRM31CR60J107ME39L Series= X5R	Cap= 100.0 uF ESR= 4.885 mOhm VDC= 6.3 V IRMS= 4.4118 A	1	\$0.14	1206_190 11 mm ²
7.	Cramp	Kemet	C0805C181K5GACTU Series= C0G/NP0	Cap= 180.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
8.	Css	Kemet	C0805C103K5RACTU Series= X7R	Cap= 10.0 nF ESR= 1.739 Ohm VDC= 50.0 V IRMS= 411.0 mA	1	\$0.01	0805 7 mm ²
9.	D1	Diodes Inc.	B360A-13-F	VF@Io= 700.0 mV VRRM= 60.0 V	1	\$0.12	SMA 37 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	L1	Bourns	SDR1307-180ML	L= 18.0 μ H DCR= 36.0 mOhm	1	\$0.35	 SDR1307 227 mm ²
11.	Rcomp	Panasonic	ERJ-6ENF2612V Series= ERJ-6E	Res= 26.1 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
12.	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
13.	Rfb2	Panasonic	ERJ-6ENF1691V Series= ERJ-6E	Res= 1.69 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
14.	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
15.	U1	Texas Instruments	LM25576MHX/NOPB	Switcher	1	\$2.00	 MXA20A 71 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	511.653 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	93.992 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.162 A	Current	Peak switch current in IC
4.	Iin Avg	217.58 mA	Current	Average input current
5.	L Ipp	325.6 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	640.215 mA	Current	Q lavg
7.	BOM Count	15	General	Total Design BOM count
8.	FootPrint	425.0 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	125.628 mV	General	Voltage drop across the MosFET

#	Name	Value	Category	Description
12.	Pout	6.6 W	General	Total output power
13.	Total BOM	\$2.76	General	Total BOM Cost
14.	D1 Tj	109.2 degC	Op_Point	D1 junction temperature
15.	Vout Actual	3.295 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
16.	Vout OP	3.3 V	Op_Point	Operational Output Voltage
17.	Duty Cycle	10.247 %	Op_point	Duty cycle
18.	Efficiency	84.259 %	Op_point	Steady state efficiency
19.	IC Tj	46.857 degC	Op_point	IC junction temperature
20.	ICThetaJA	40.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
21.	IOUT_OP	2.0 A	Op_point	Iout operating point
22.	VIN_OP	36.0 V	Op_point	Vin operating point
23.	Vout p-p	1.796 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	1.164 mW	Power	Input capacitor power dissipation
25.	Cout Pd	43.156 µW	Power	Output capacitor power dissipation
26.	Diode Pd	752.004 mW	Power	Diode power dissipation
27.	IC Pd	321.421 mW	Power	IC power dissipation
28.	L Pd	158.4 mW	Power	Inductor power dissipation
29.	Total Pd	1.233 W	Power	Total Power Dissipation
30.	Vout Tolerance	2.757 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	2.0	Maximum Output Current
2.	VinMax	36.0	Maximum input voltage
3.	VinMin	10.0	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	base_pn	LM25576	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	34.0	Ambient temperature

Design Assistance

1. **LM25576** Product Folder : <http://www.ti.com/product/LM25576> : contains the data sheet and other resources.

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