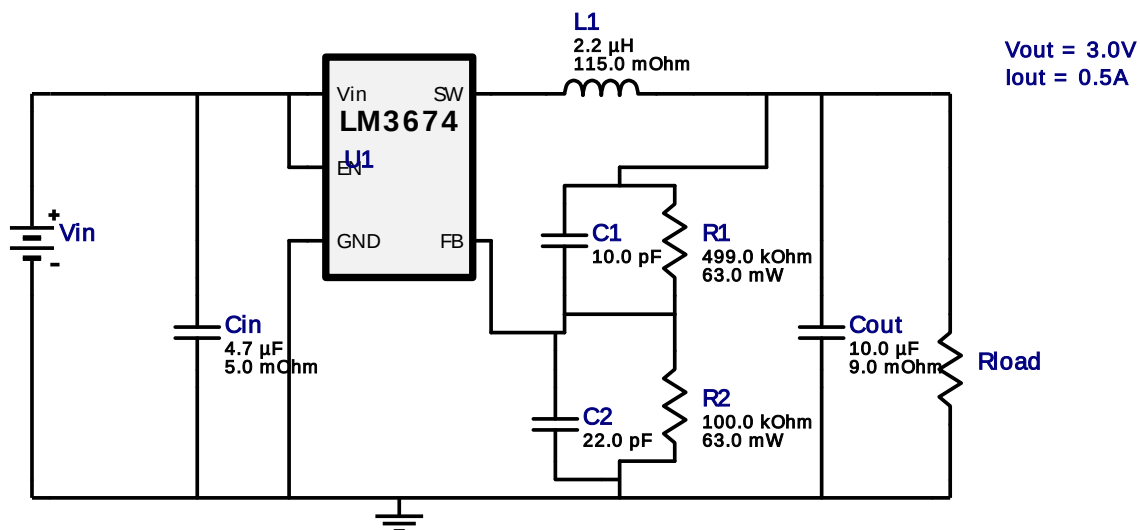


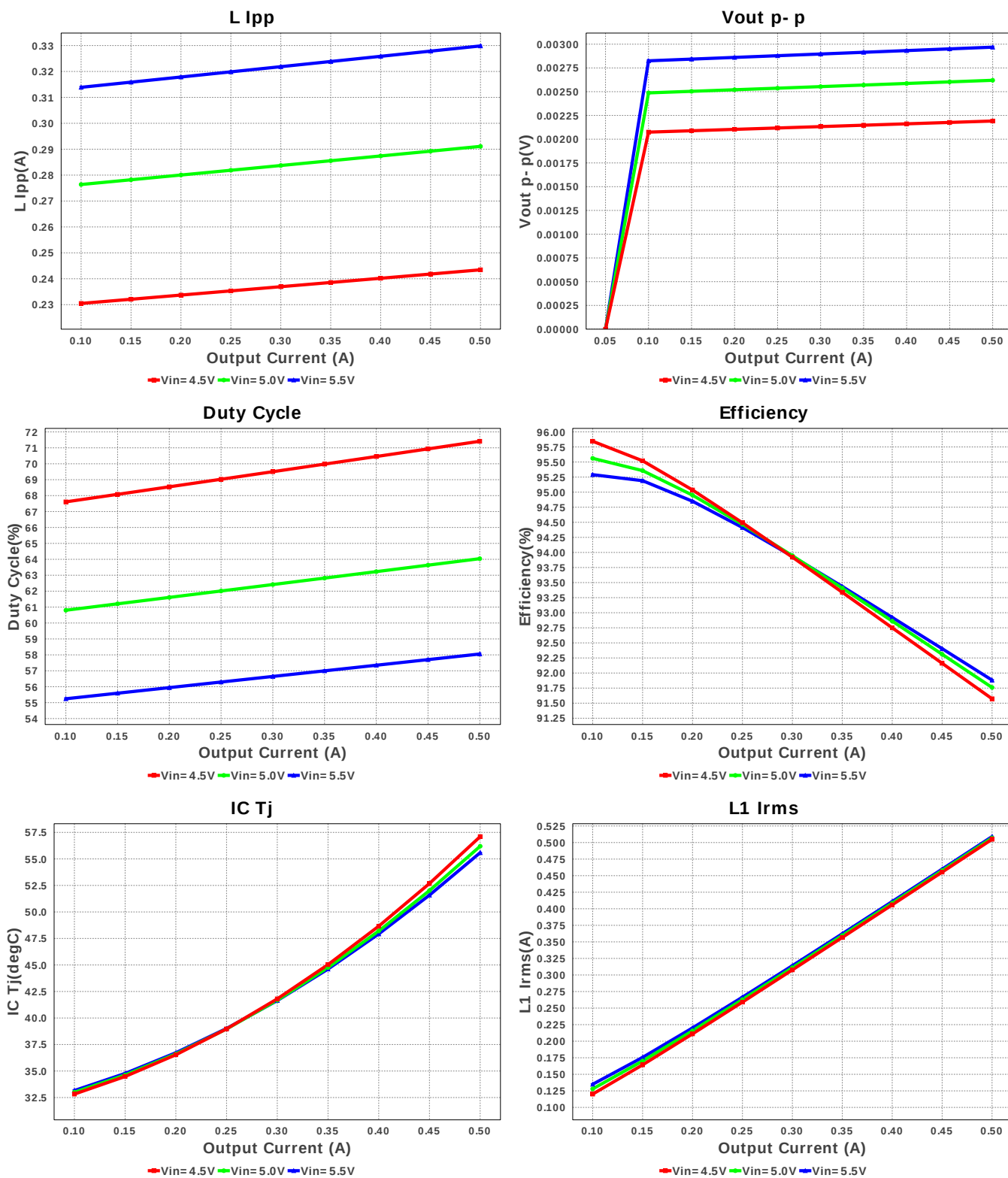
WEBENCH® Design Report

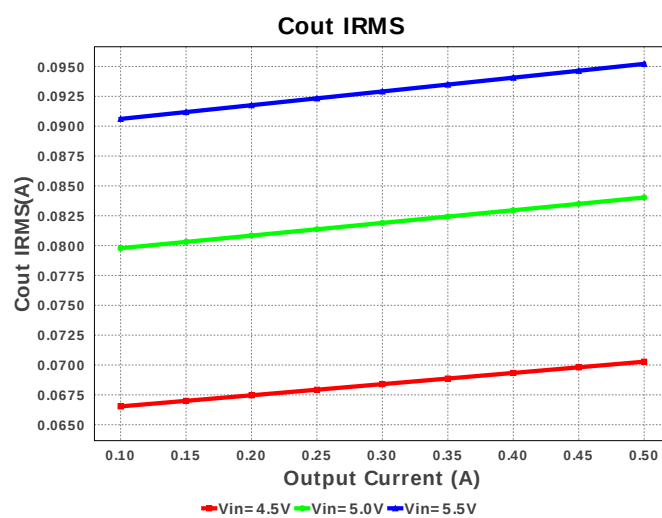
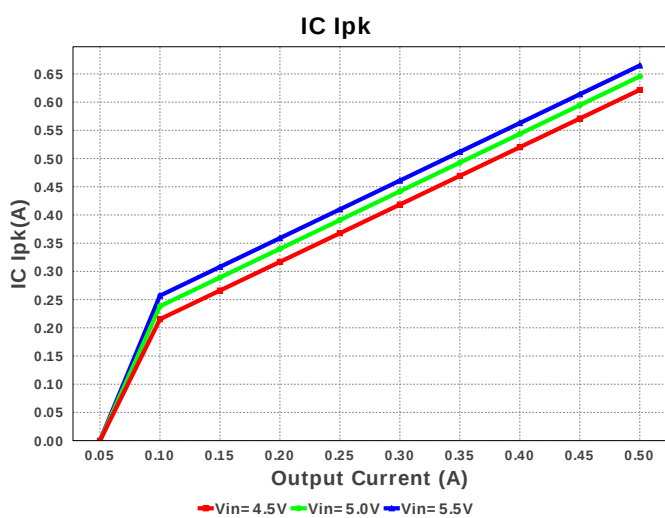
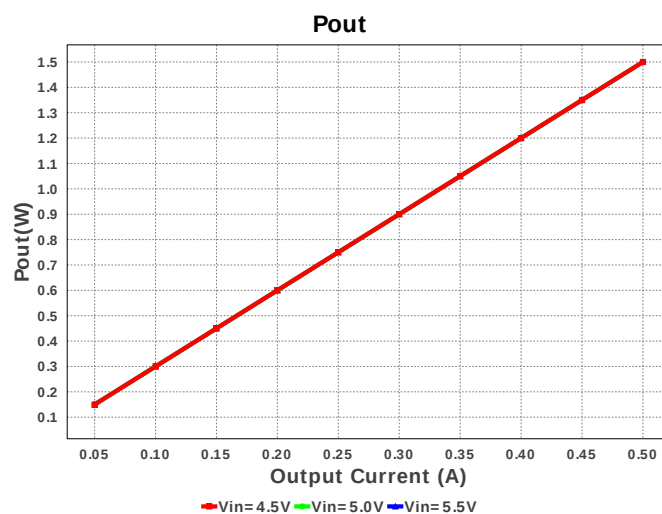
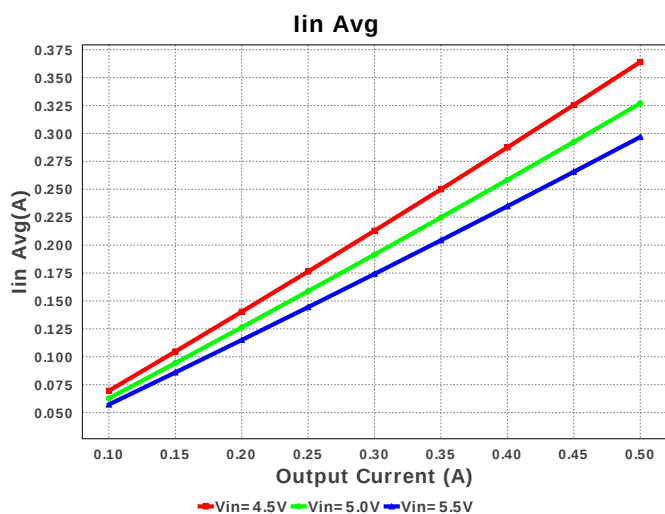
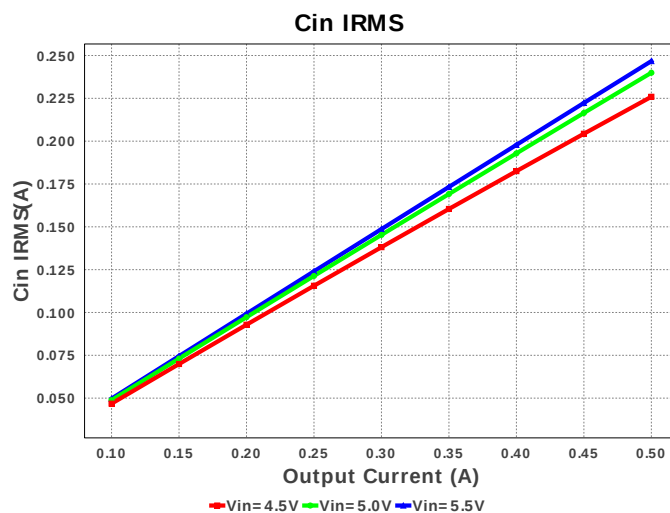
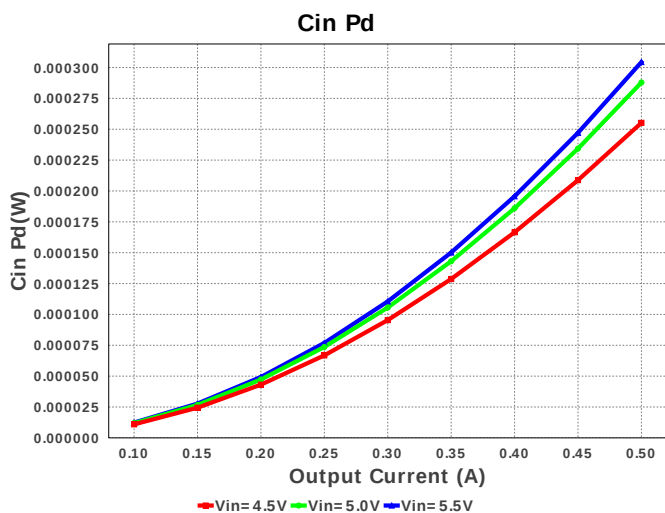
Design : 4742013/126 LM3674MFX-ADJ/NOPB
LM3674MFX-ADJ/NOPB 4.5V-5.5V to 3.00V @ 0.5A

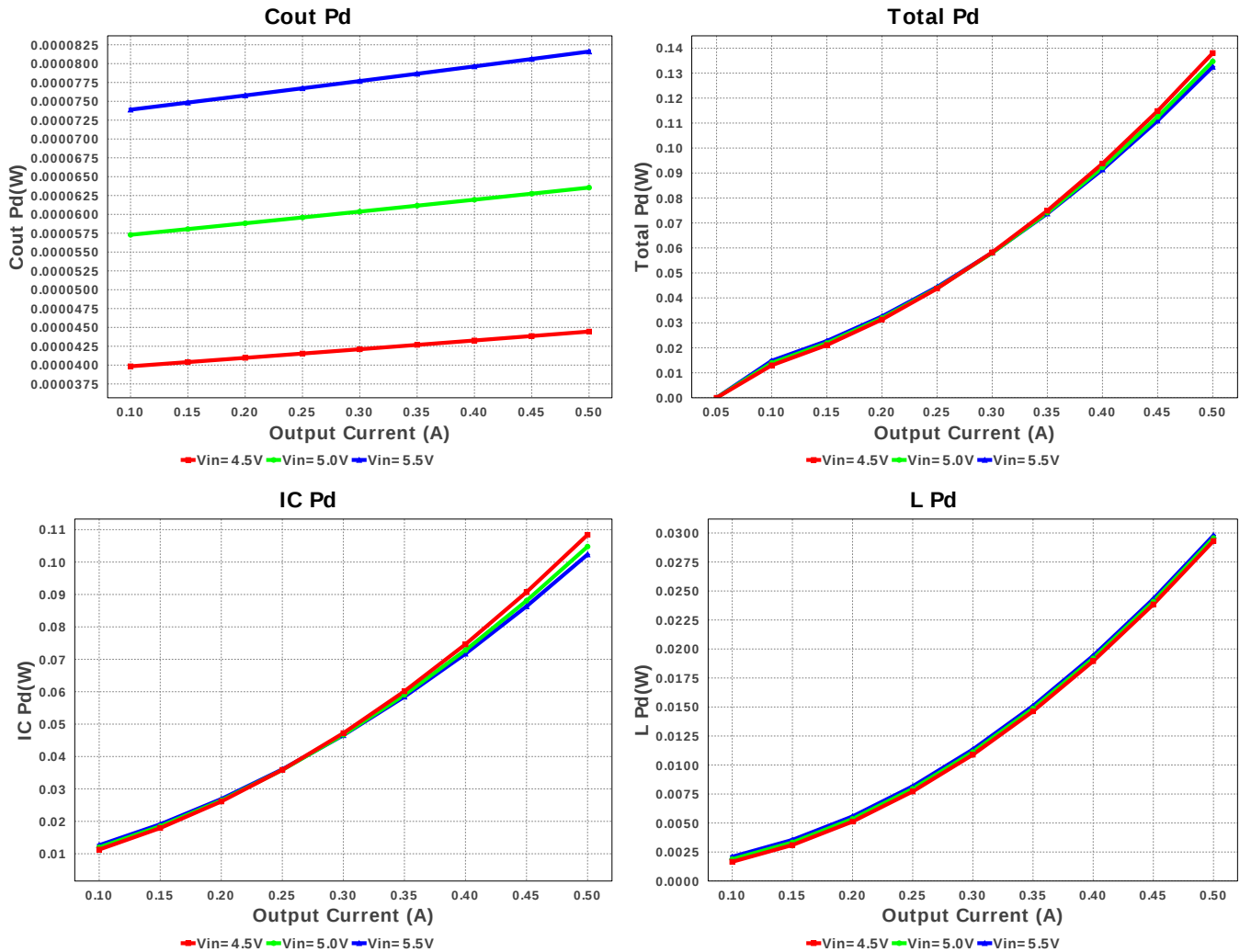


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	C1	Kemet	C0805C100M4GACTU Series= C0G/NP0	Cap= 10.0 pF VDC= 16.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
2.	C2	Kemet	C0805C220K3GACTU Series= C0G/NP0	Cap= 22.0 pF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
3.	Cin	MuRata	GRM188R60J475KE19D Series= X5R	Cap= 4.7 uF ESR= 5.0 mOhm VDC= 6.3 V IRMS= 2.0 A	1	\$0.01	0603 5 mm ²
4.	Cout	MuRata	GRM188R60J106ME47D Series= X5R	Cap= 10.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 2.74 A	1	\$0.02	0603 5 mm ²
5.	L1	TDK	NLCV32T-2R2M-PFR	L= 2.2 μH DCR= 115.0 mOhm	1	\$0.10	NLCV32 13 mm ²
6.	R1	Vishay-Dale	CRCW0402499KFKED Series= CRCW..e3	Res= 499.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
7.	R2	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.	U1	Texas Instruments	LM3674MFX-ADJ/NOPB	Switcher	1	\$0.32	MF05A 15 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	246.735 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	95.22 mA	Current	Output capacitor RMS ripple current
3.	IC IpK	664.926 mA	Current	Peak switch current in IC
4.	Iin Avg	296.82 mA	Current	Average input current
5.	L Ipp	329.85 mA	Current	Peak-to-peak inductor ripple current
6.	L1 Irms	508.986 mA	Current	Inductor ripple current
7.	BOM Count	8	General	Total Design BOM count
8.	FootPrint	57.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	2.0 MHz	General	Switching frequency
10.	IC Tolerance	0.0 V	General	IC Feedback Tolerance
11.	Pout	1.5 W	General	Total output power
12.	Total BOM	\$0.49	General	Total BOM Cost
13.	Duty Cycle	58.054 %	Op_point	Duty cycle
14.	Efficiency	91.882 %	Op_point	Steady state efficiency
15.	IC Tj	55.586 degC	Op_point	IC junction temperature
16.	ICThetaJA	250.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
17.	IOUT_OP	500.0 mA	Op_point	Iout operating point
18.	VIN_OP	5.5 V	Op_point	Vin operating point
19.	Vout p-p	2.969 mV	Op_point	Peak-to-peak output ripple voltage
20.	Cin Pd	304.392 μW	Power	Input capacitor power dissipation
21.	Cout Pd	81.602 μW	Power	Output capacitor power dissipation
22.	IC Pd	102.342 mW	Power	IC power dissipation
23.	L Pd	29.793 mW	Power	Inductor power dissipation
24.	Total Pd	132.527 mW	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	500.0 m	Maximum Output Current
2.	VinMax	5.5	Maximum input voltage
3.	VinMin	4.5	Minimum input voltage

#	Name	Value	Description
4.	Vout	3.0	Output Voltage
5.	base_pn	LM3674	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LM3674** Product Folder : <http://www.ti.com/product/LM3674> : contains the data sheet and other resources.

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