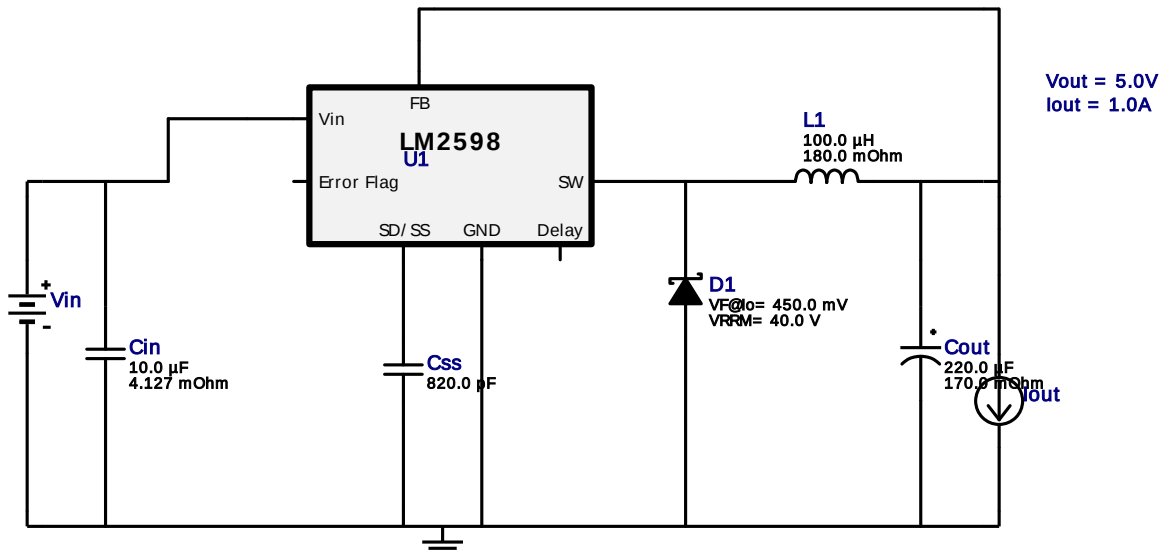
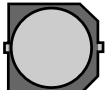


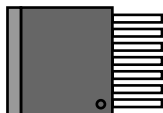
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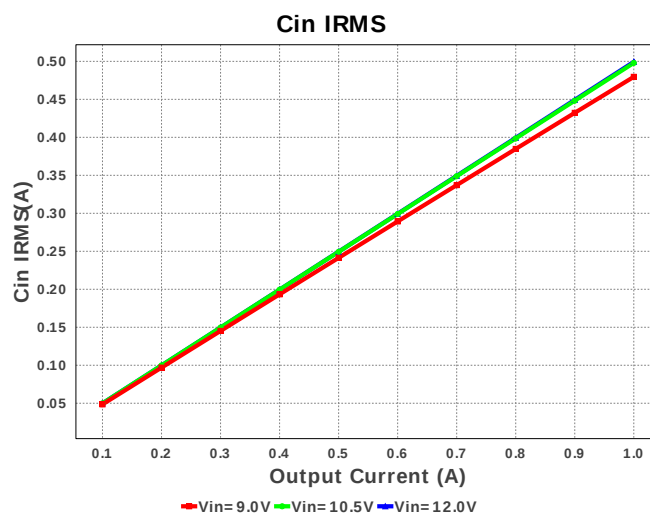
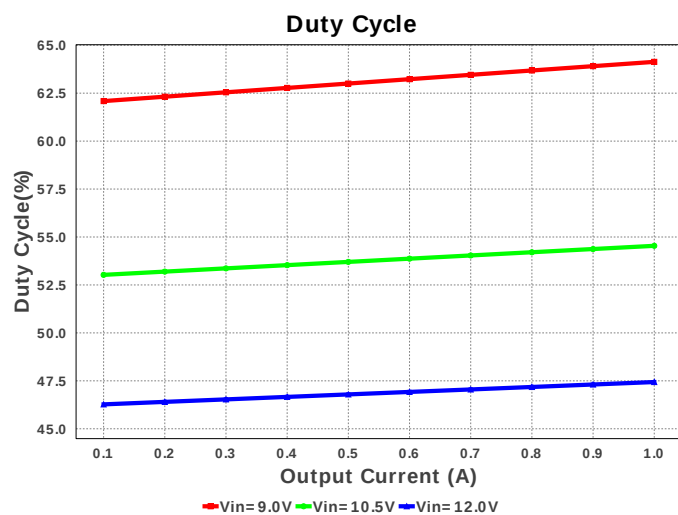
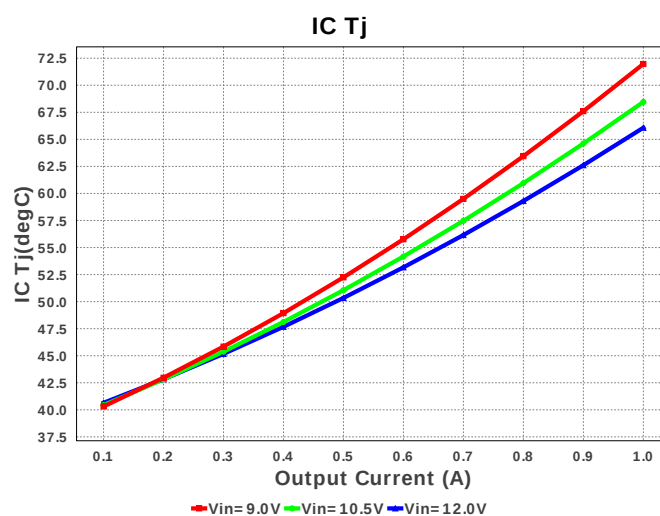
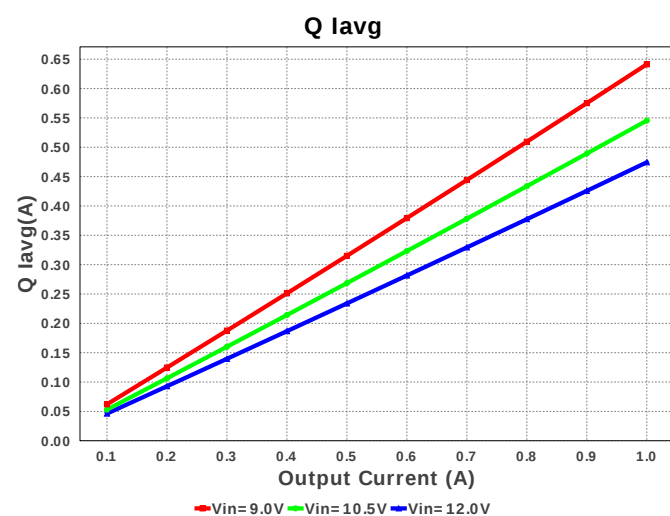
Design : 4372614/40 LM2598SX-5.0/NOPB
LM2598SX-5.0/NOPB 9.0V-12.0V to 5.00V @ 1.0A

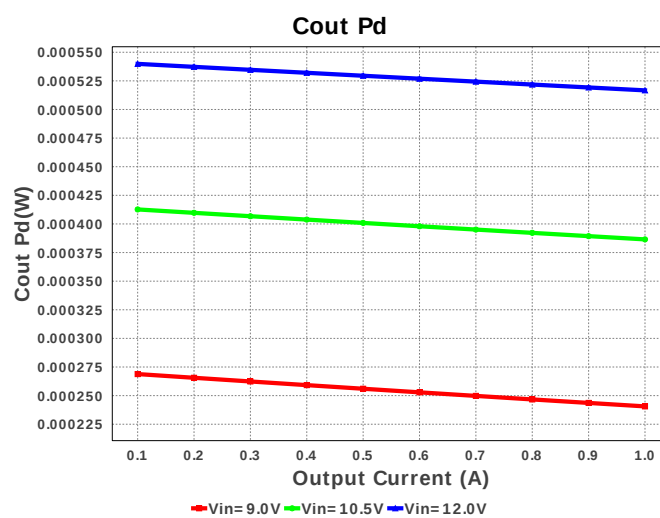
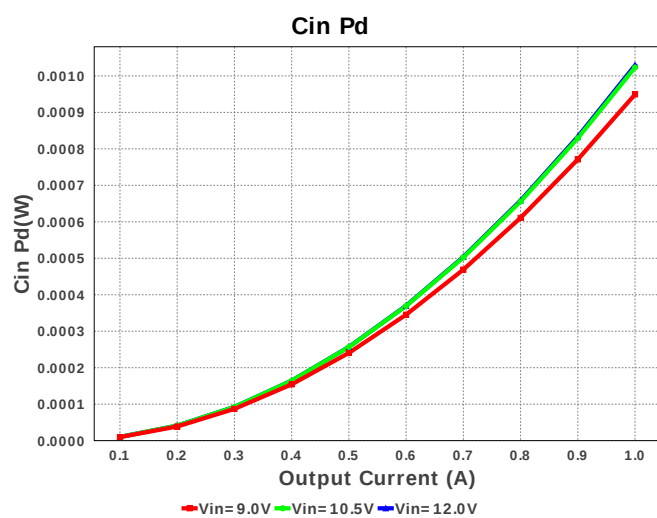
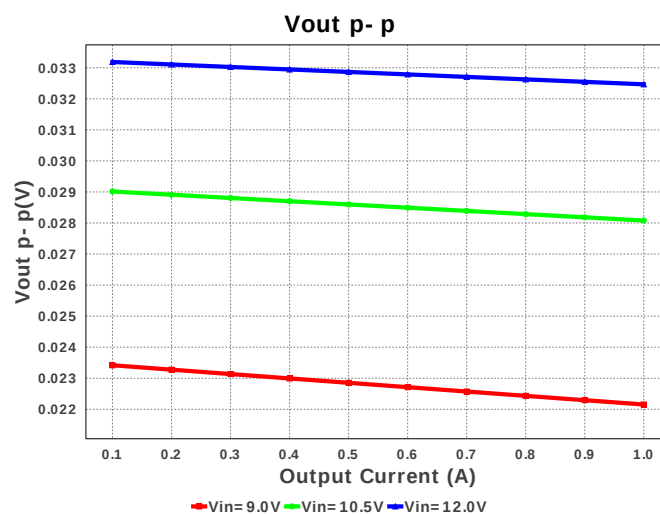
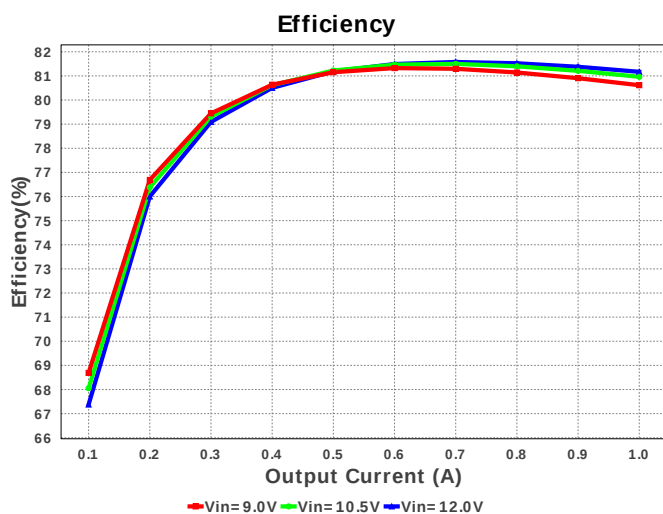
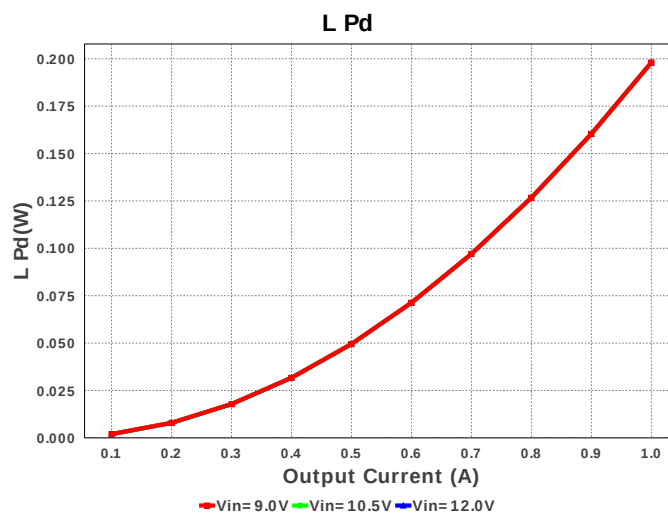
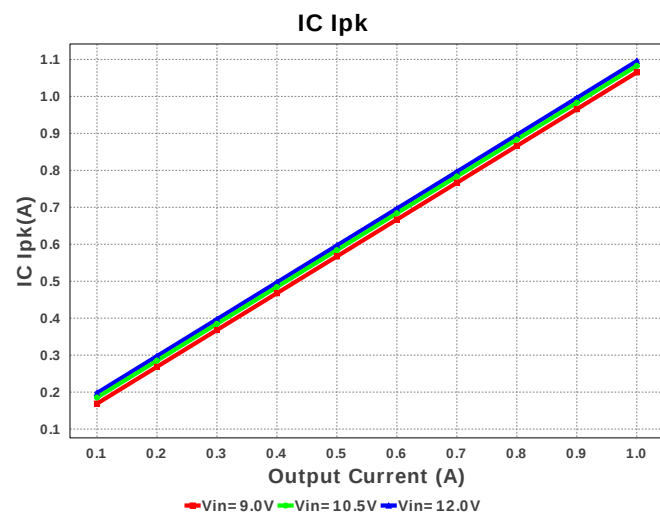


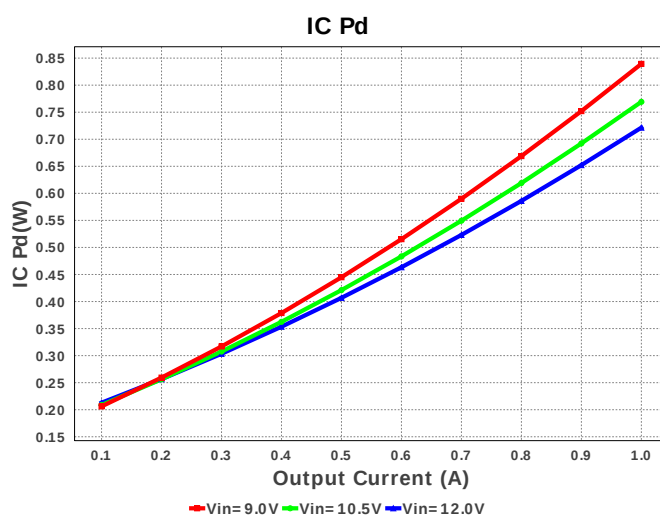
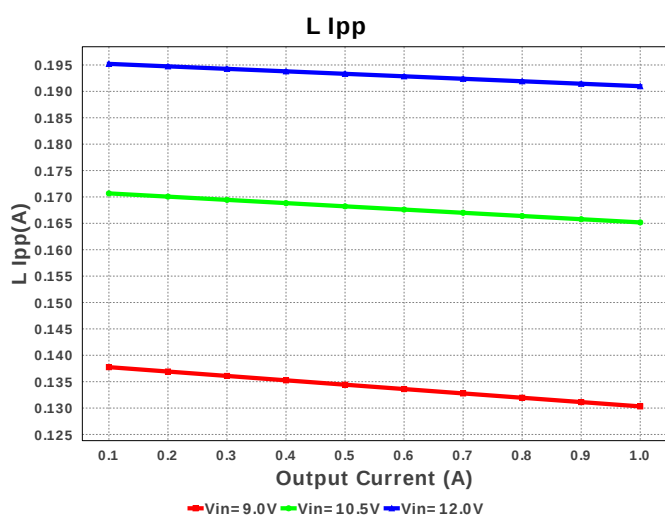
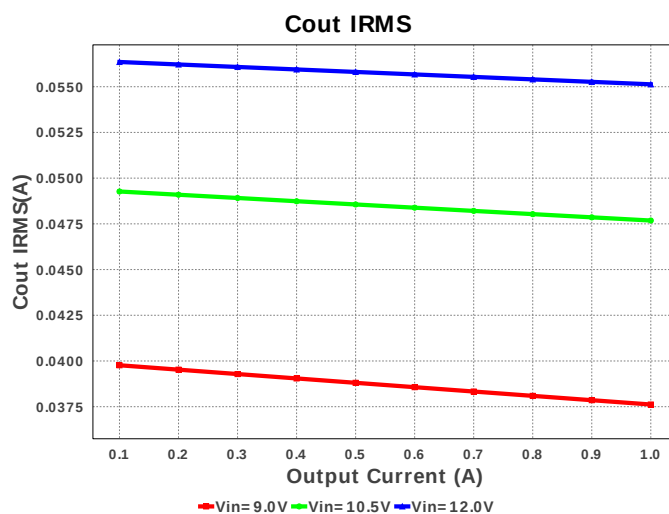
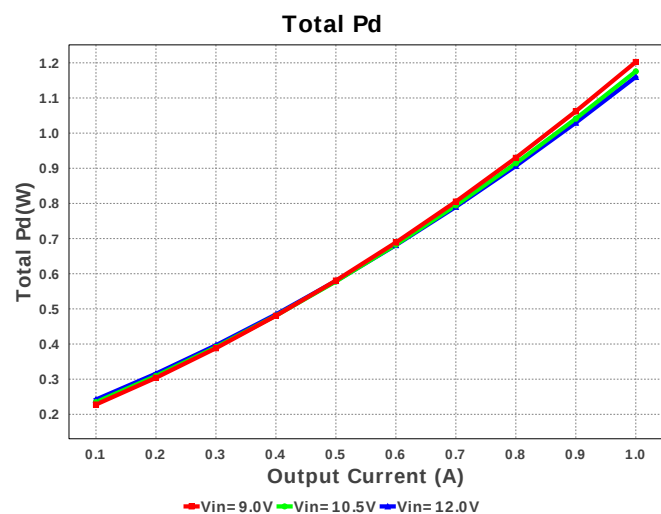
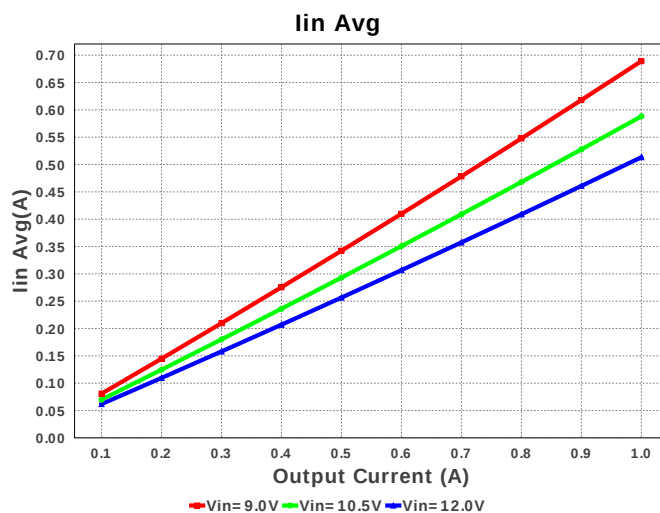
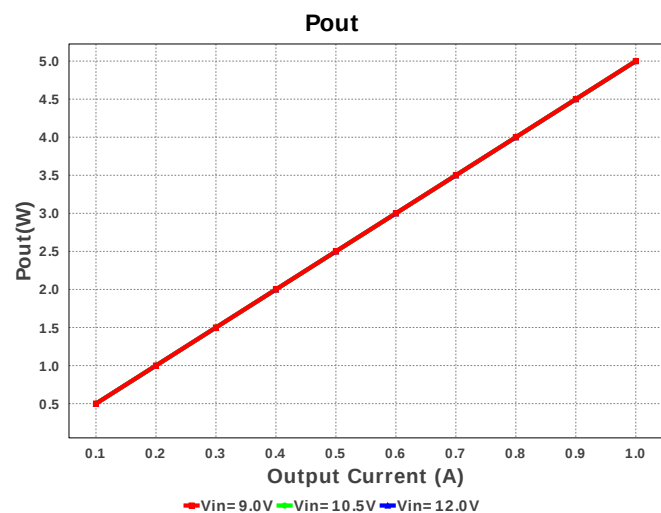
Electrical BOM

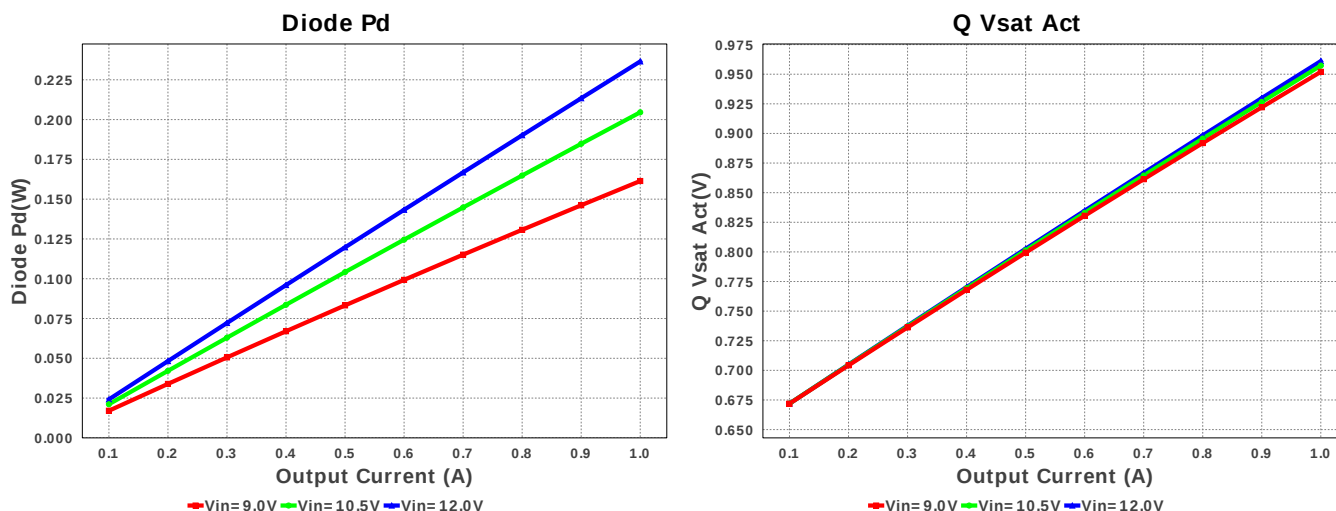
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	MuRata	GRM21BR61C106KE15L Series= X5R	Cap= 10.0 uF ESR= 4.127 mOhm VDC= 16.0 V IRMS= 2.46634 A	1	\$0.03	 0805 7 mm ²
2.	Cout	Nichicon	UUD1E221MNL1GS Series= uD	Cap= 220.0 uF ESR= 170.0 mOhm VDC= 25.0 V IRMS= 450.0 mA	1	\$0.16	 SM_RADIAL_8MM 113 mm ²
3.	Css	Yageo America	CC0805KRX7R9BB821 Series= X7R	Cap= 820.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
4.	D1	Diodes Inc.	1N5819HW-7-F	VF@Io= 450.0 mV VRRM= 40.0 V	1	\$0.08	 SOD-123 13 mm ²
5.	L1	Bourns	SRR1260-101M	L= 100.0 uH DCR= 180.0 mOhm	1	\$0.41	 SRR1260 210 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
6.	U1	Texas Instruments	LM2598SX-5.0/NOPB	Switcher	1	\$1.70	 TS7B 199 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	499.343 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	55.131 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	1.095 A	Current	Peak switch current in IC
4.	Iin Avg	513.96 mA	Current	Average input current
5.	L Ipp	190.98 mA	Current	Peak-to-peak inductor ripple current
6.	Q Iavg	474.368 mA	Current	Q Iavg
7.	BOM Count	6	General	Total Design BOM count
8.	FootPrint	549.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	150.0 kHz	General	Switching frequency
10.	IC Tolerance	0.0 V	General	IC Feedback Tolerance
11.	Pout	5.0 W	General	Total output power
12.	Q Vsat Act	961.037 mV	General	Q Vsat
13.	Total BOM	\$2.39	General	Total BOM Cost
14.	Cross Freq	8.318 kHz	Op_point	Bode plot crossover frequency
15.	Duty Cycle	47.437 %	Op_point	Duty cycle
16.	Efficiency	81.07 %	Op_point	Steady state efficiency
17.	IC Tj	66.073 degC	Op_point	IC junction temperature
18.	ICThetaJA	50.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
19.	IOUT_OP	1.0 A	Op_point	Iout operating point
20.	Phase Marg	62.313 deg	Op_point	Bode Plot Phase Margin
21.	VIN_OP	12.0 V	Op_point	Vin operating point
22.	Vout p-p	32.467 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	1.029 mW	Power	Input capacitor power dissipation
24.	Cout Pd	516.703 μW	Power	Output capacitor power dissipation
25.	Diode Pd	236.534 mW	Power	Diode power dissipation
26.	IC Pd	721.453 mW	Power	IC power dissipation
27.	L Pd	198.0 mW	Power	Inductor power dissipation
28.	Total Pd	1.168 W	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	VinMax	12.0	Maximum input voltage
3.	VinMin	9.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	LM2598	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LM2598** Product Folder : <http://www.ti.com/product/LM2598> : contains the data sheet and other resources.

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