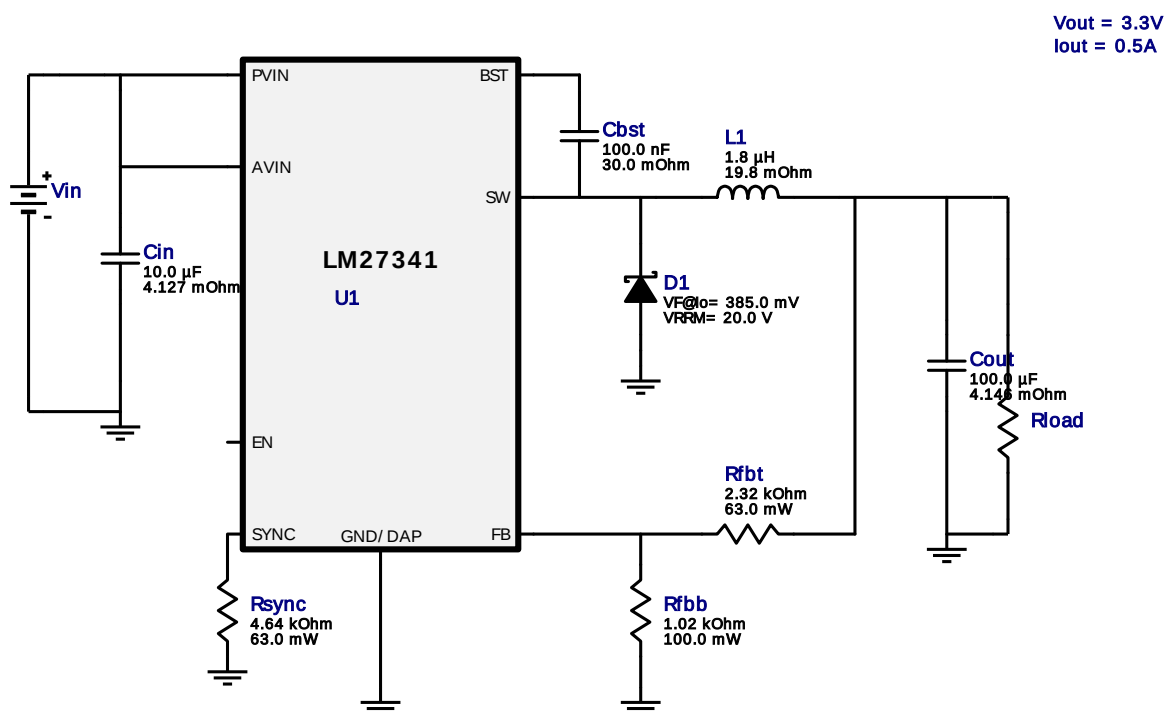


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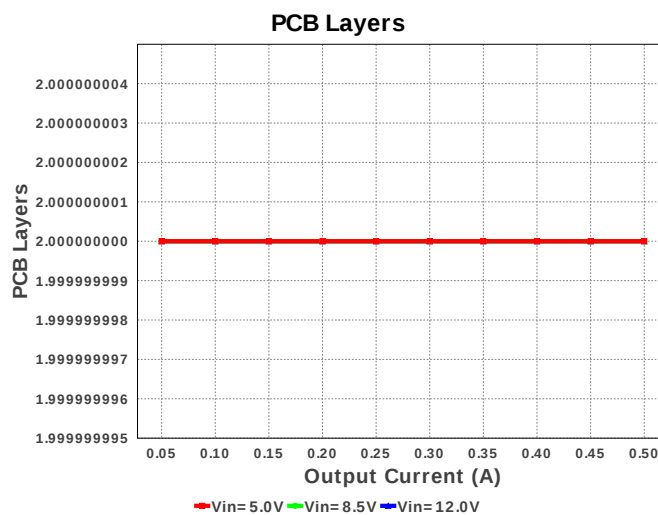
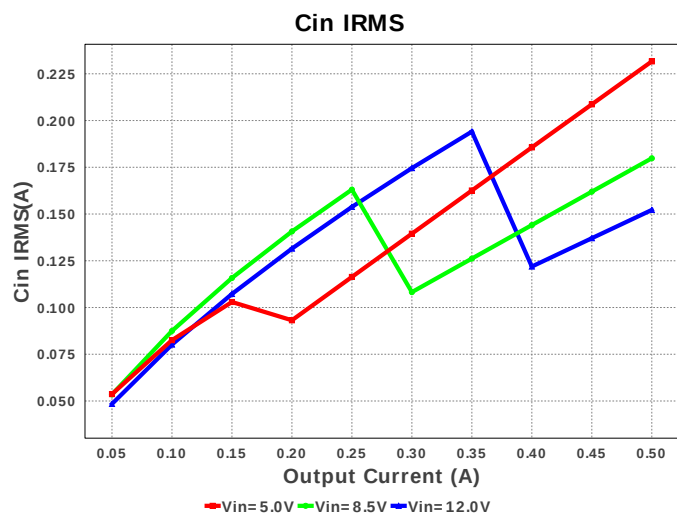
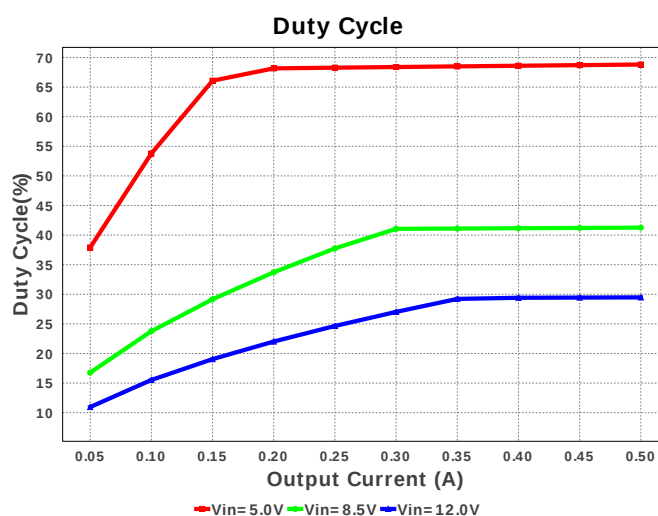
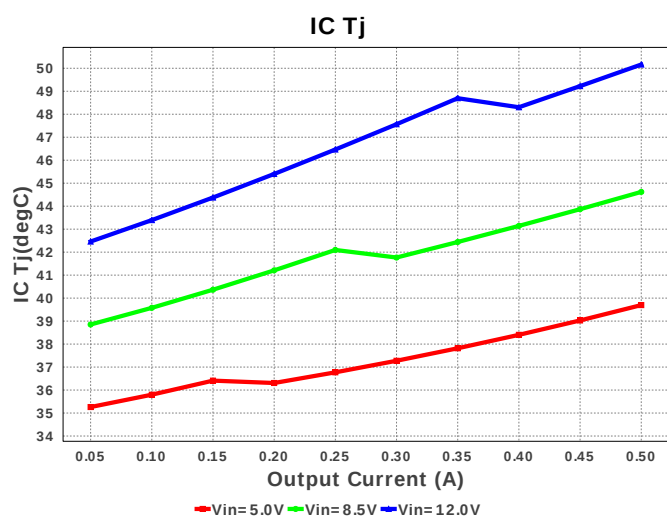
Design : 4372614/34 LM27341MY/NOPB
LM27341MY/NOPB 5.0V-12.0V to 3.30V @ 0.5A

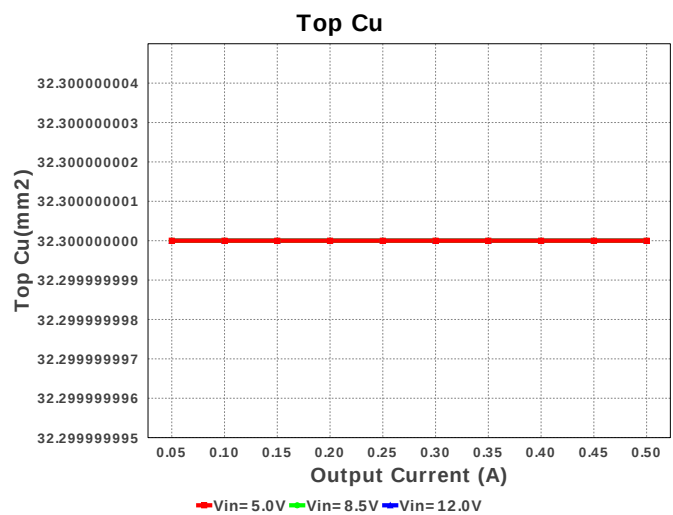
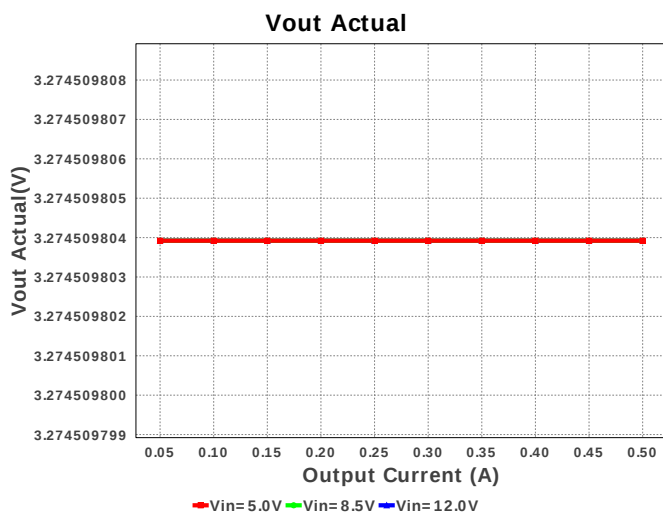
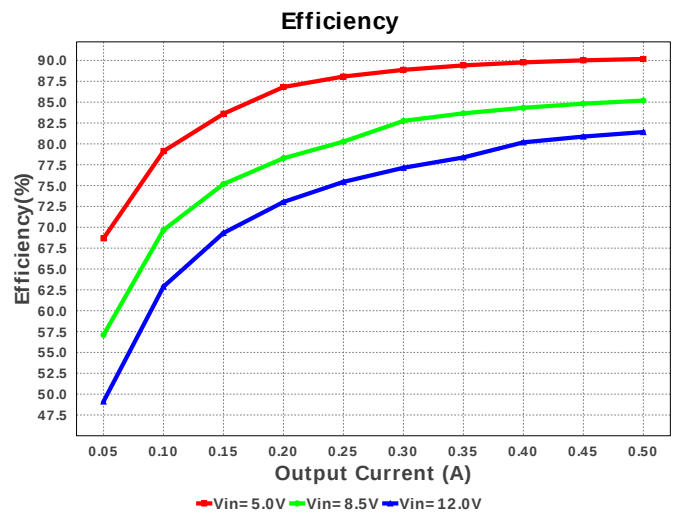
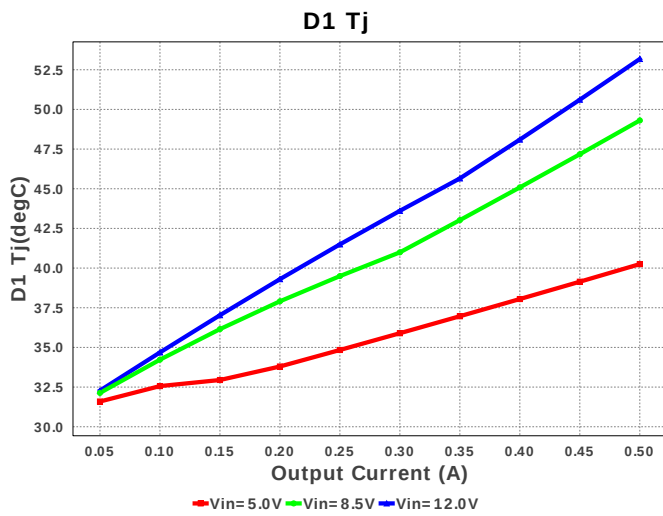
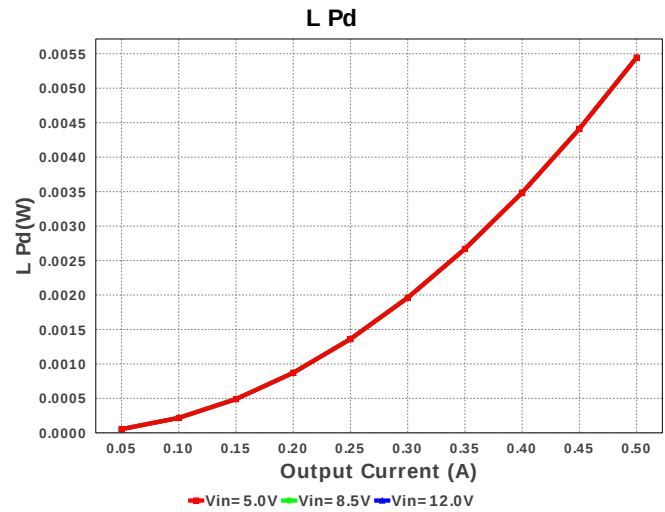
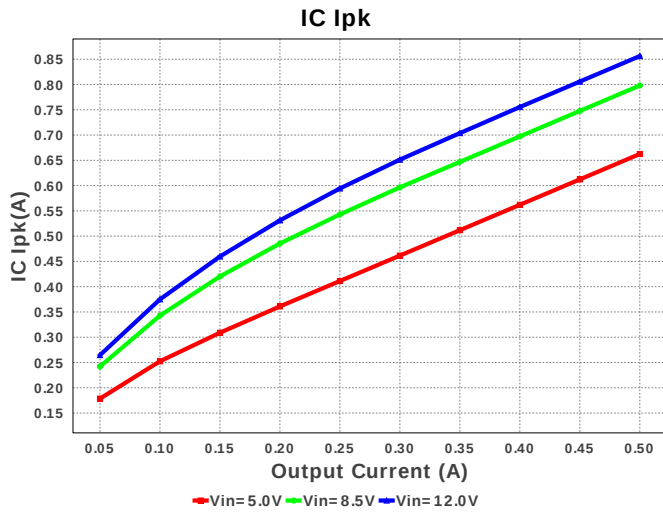


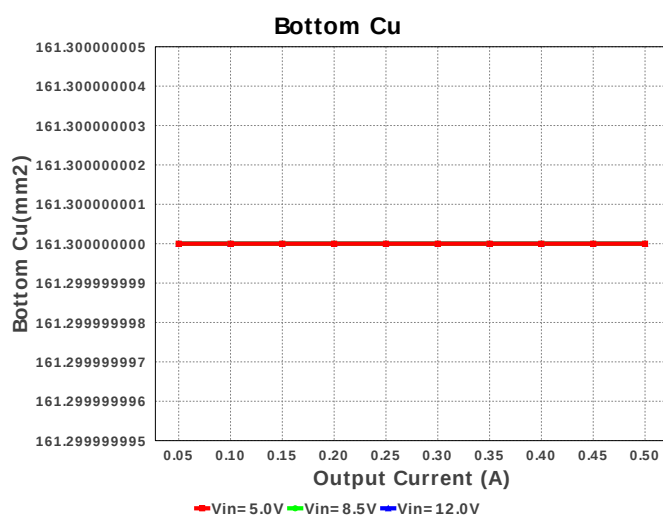
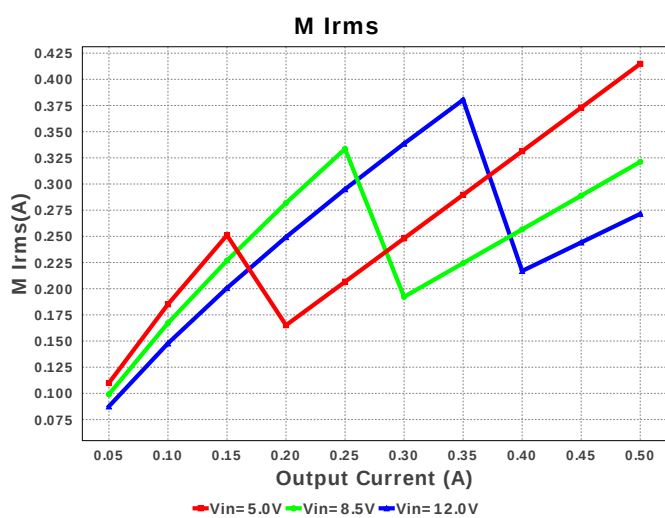
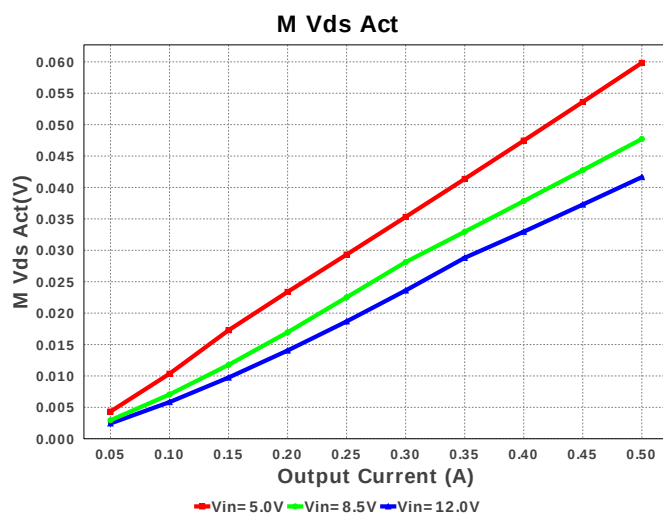
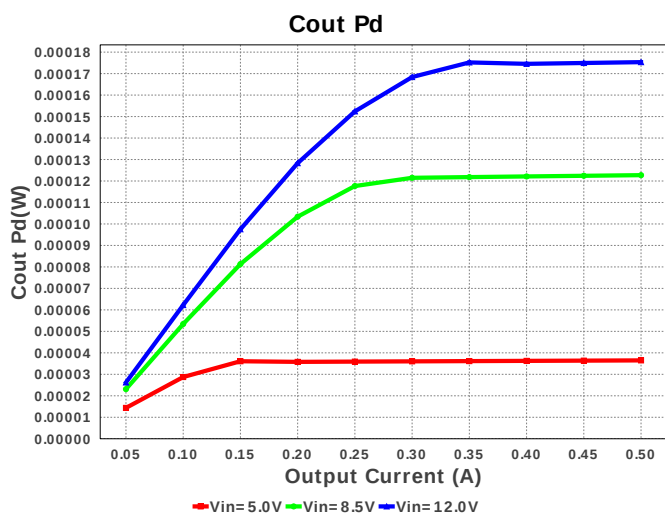
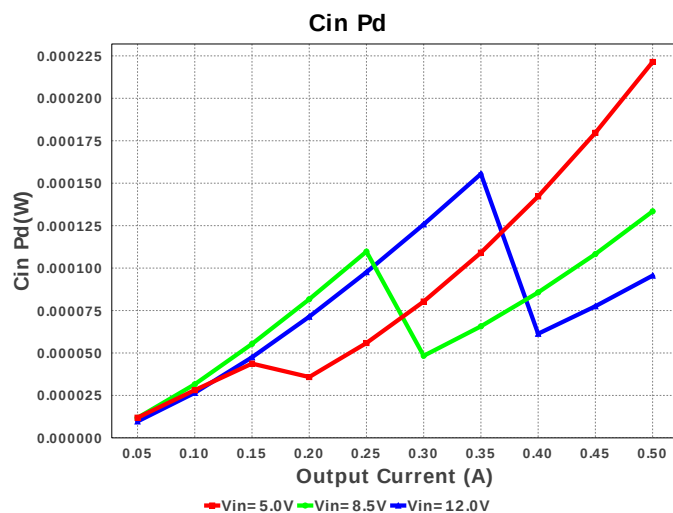
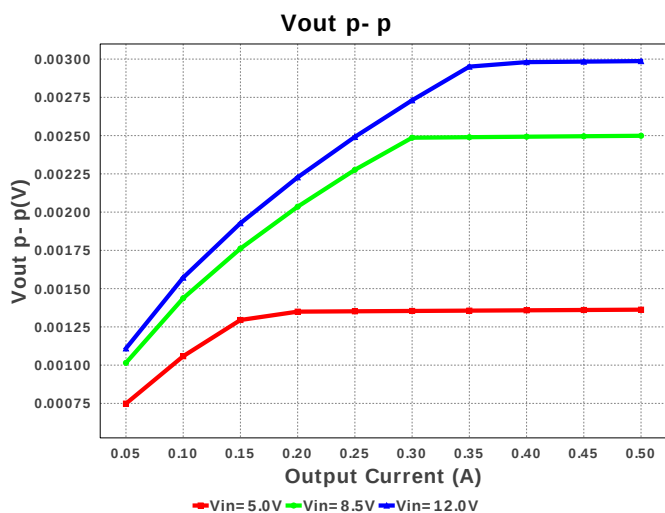
Electrical BOM

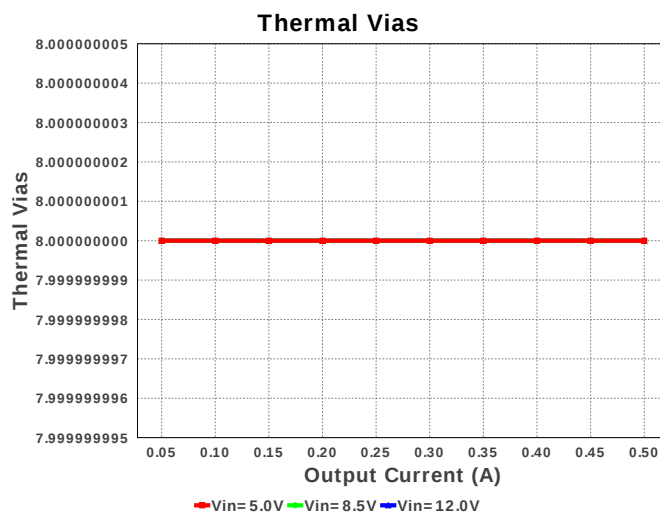
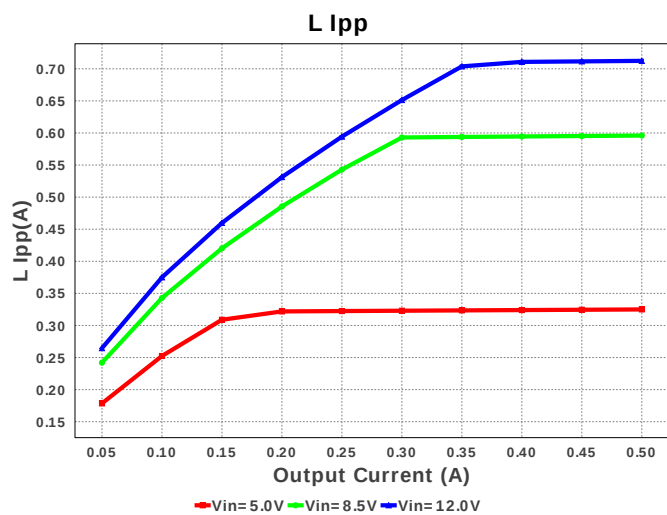
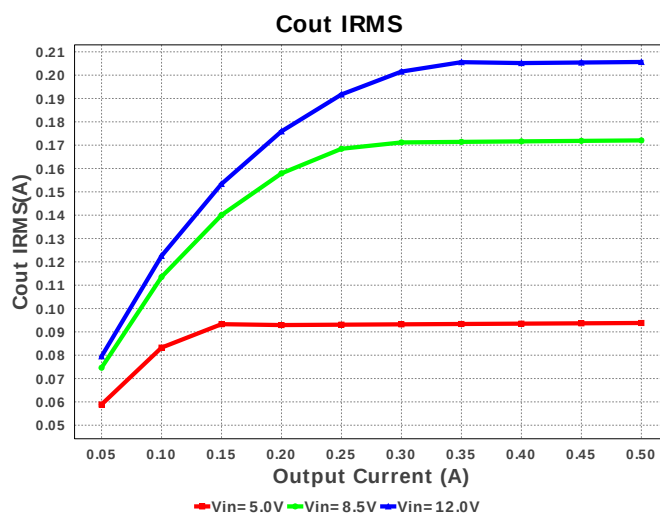
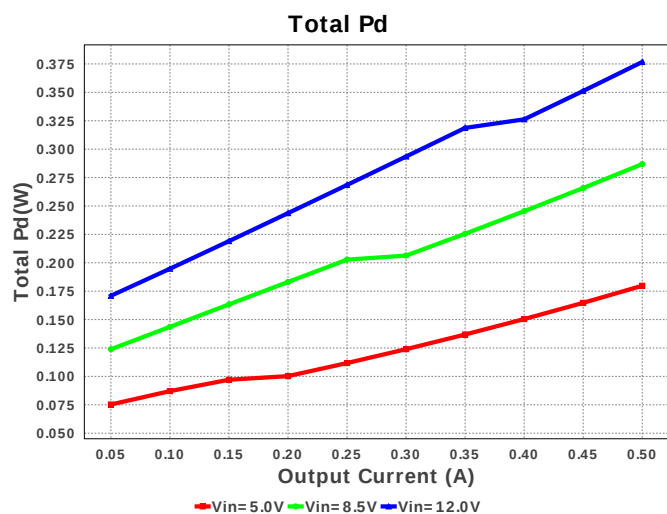
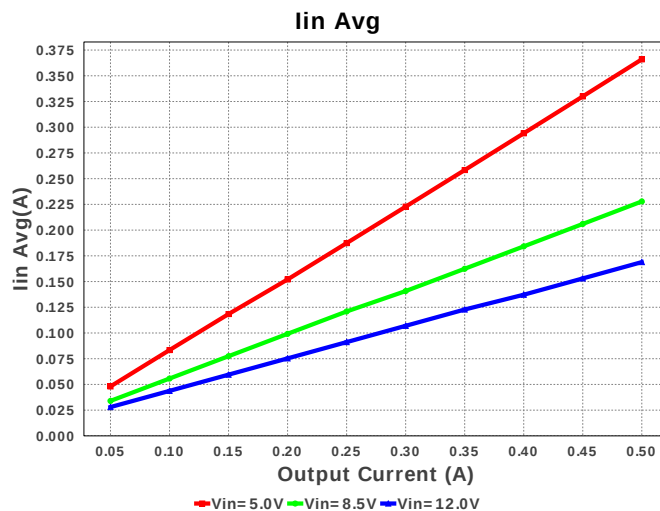
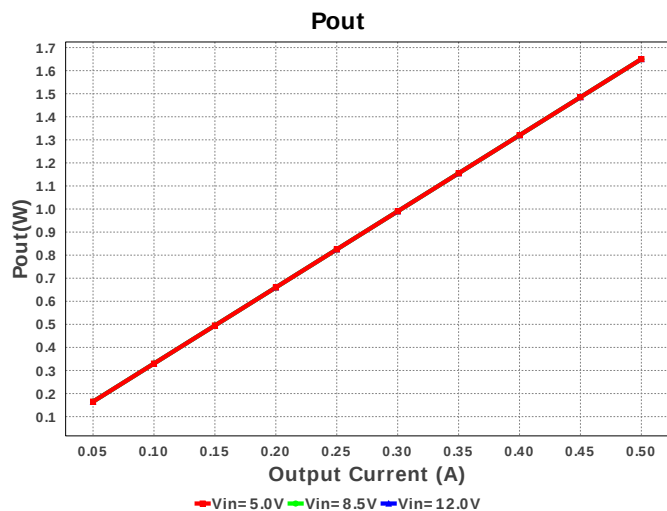
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cbst	MuRata	GRM188R71C104KA01D Series= X7R	Cap= 100.0 nF ESR= 30.0 mOhm VDC= 16.0 V IRMS= 1.7 A	1	\$0.01	0603 5 mm ²
2.	Cin	MuRata	GRM21BR61C106KE15L Series= X5R	Cap= 10.0 uF ESR= 4.127 mOhm VDC= 16.0 V IRMS= 2.46634 A	1	\$0.03	0805 7 mm ²
3.	Cout	MuRata	GRM32ER60J107ME20L Series= X5R	Cap= 100.0 uF ESR= 4.146 mOhm VDC= 6.3 V IRMS= 4.7416 A	1	\$0.18	1210_280 15 mm ²
4.	D1	ON Semiconductor	MBR0520LT1G	VF@Io= 385.0 mV VRRM= 20.0 V	1	\$0.06	SOD-123 13 mm ²
5.	L1	Bourns	SRN6045-1R8Y	L= 1.8 uH DCR= 19.8 mOhm	1	\$0.16	SRN6045 64 mm ²
6.	Rfbb	Vishay-Dale	CRCW06031K02FKEA Series= CRCW..e3	Res= 1.02 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	0603 5 mm ²
7.	Rfbb	Vishay-Dale	CRCW04022K32FKED Series= CRCW..e3	Res= 2.32 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

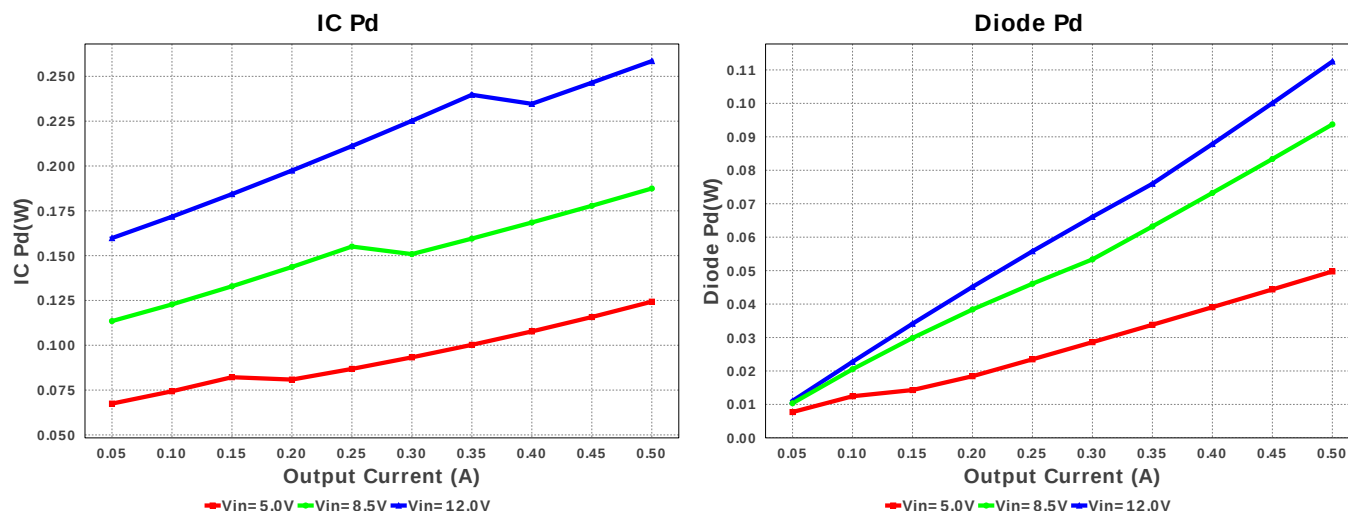
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
8.	Rsync	Vishay-Dale	CRCW04024K64FKED Series= CRCW..e3	Res= 4.64 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm²
9.	U1	Texas Instruments	LM27341MY/NOPB	Switcher	1	\$1.10	 MUC10A 24 mm²











Operating Values

#	Name	Value	Category	Description
1.	Bottom Cu	161.3 mm ²	Board_Layout	Recommended minimum area of bottom layer copper connected to DAP
2.	PCB Layers	2.0	Board_Layout	Recommended number of PCB layers for the necessary IC Thermal Resistance
3.	Thermal Vias	8.0	Board_Layout	Recommended number of 10 mil thermal vias under the IC
4.	Top Cu	32.3 mm ²	Board_Layout	Recommended minimum area of top layer copper connected to DAP
5.	Cin IRMS	152.225 mA	Current	Input capacitor RMS ripple current
6.	Cout IRMS	205.559 mA	Current	Output capacitor RMS ripple current
7.	IC Ipk	856.039 mA	Current	Peak switch current in IC
8.	Iin Avg	168.81 mA	Current	Average input current
9.	L Ipp	712.08 mA	Current	Peak-to-peak inductor ripple current
10.	M1 Irms	271.41 mA	Current	Q lavg
11.	BOM Count	9	General	Total Design BOM count
12.	FootPrint	138.0 mm ²	General	Total Foot Print Area of BOM components
13.	Frequency	2.0 MHz	General	Switching frequency
14.	IC Tolerance	10.0 mV	General	IC Feedback Tolerance
15.	M Vds Act	39.628 mV	General	Voltage drop across the MosFET
16.	Pout	1.65 W	General	Total output power
17.	Total BOM	\$1.57	General	Total BOM Cost
18.	D1 Tj	53.088 degC	Op_Point	D1 junction temperature
19.	Vout Actual	3.275 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
20.	Vout OP	3.3 V	Op_Point	Operational Output Voltage
21.	Duty Cycle	29.465 %	Op_point	Duty cycle
22.	Efficiency	81.451 %	Op_point	Steady state efficiency
23.	IC Tj	41.608 degC	Op_point	IC junction temperature
24.	ICThetaJA	45.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
25.	IOUT_OP	500.0 mA	Op_point	Iout operating point
26.	VIN_OP	12.0 V	Op_point	Vin operating point
27.	Vout Act	3.275 V	Op_point	Achieved Vout with feedback resistor pair
28.	Vout p-p	2.986 mV	Op_point	Peak-to-peak output ripple voltage
29.	Cin Pd	95.633 μW	Power	Input capacitor power dissipation
30.	Cout Pd	175.187 μW	Power	Output capacitor power dissipation
31.	Diode Pd	112.078 mW	Power	Diode power dissipation
32.	IC Pd	257.955 mW	Power	IC power dissipation
33.	L Pd	5.445 mW	Power	Inductor power dissipation
34.	Total Pd	375.751 mW	Power	Total Power Dissipation
35.	Vout Tolerance	2.417 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	500.0 m	Maximum Output Current
2.	VinMax	12.0	Maximum input voltage
3.	VinMin	5.0	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	base_pn	LM27341	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LM27341** Product Folder : <http://www.ti.com/product/LM27341> : contains the data sheet and other resources.

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