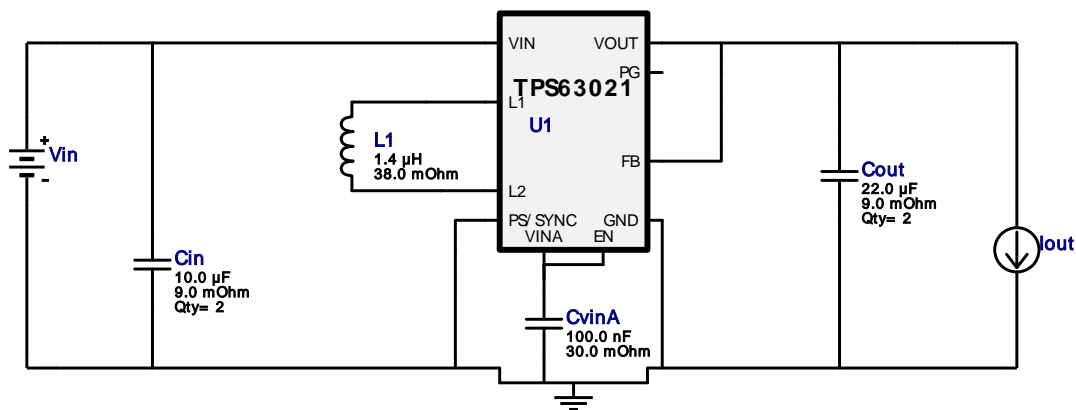


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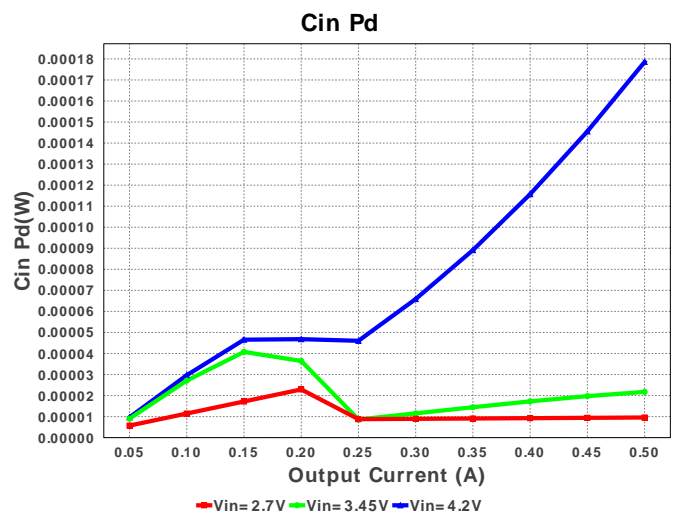
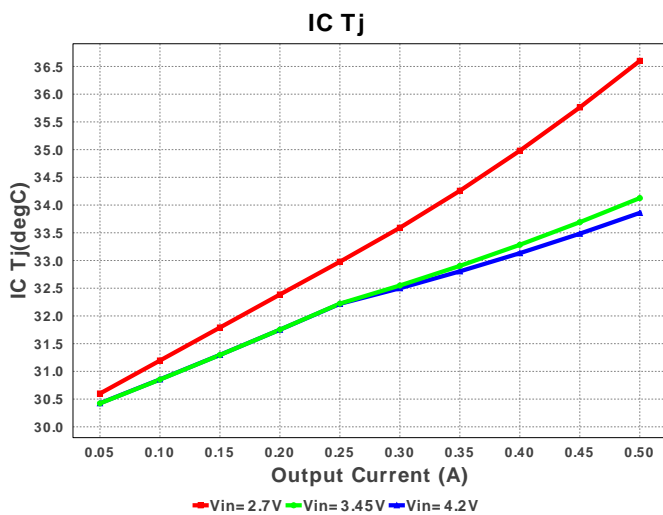
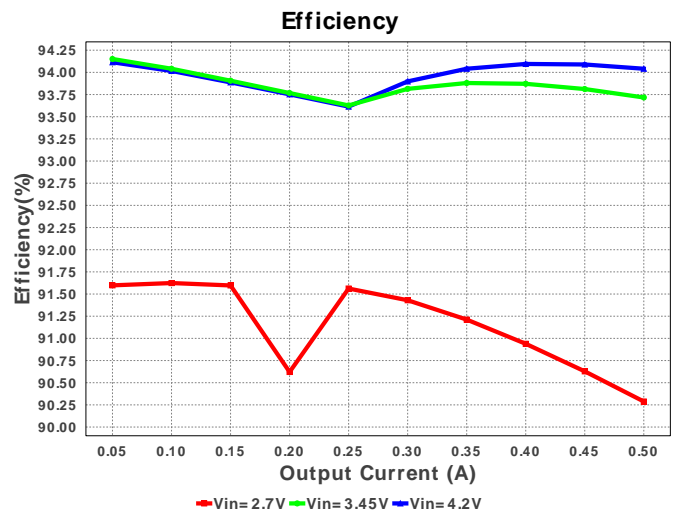
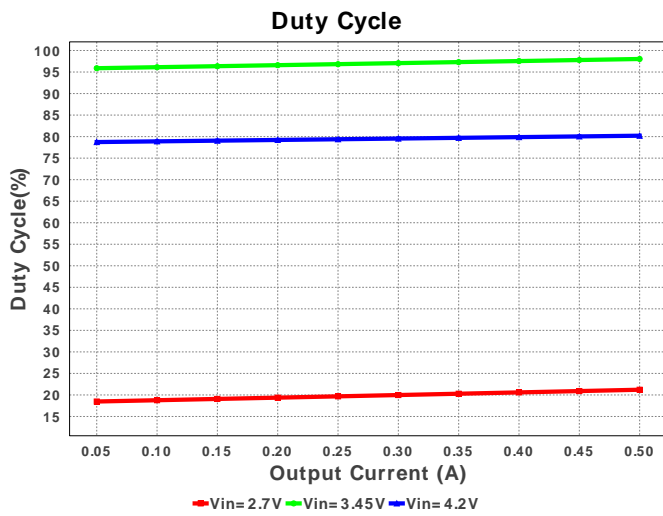
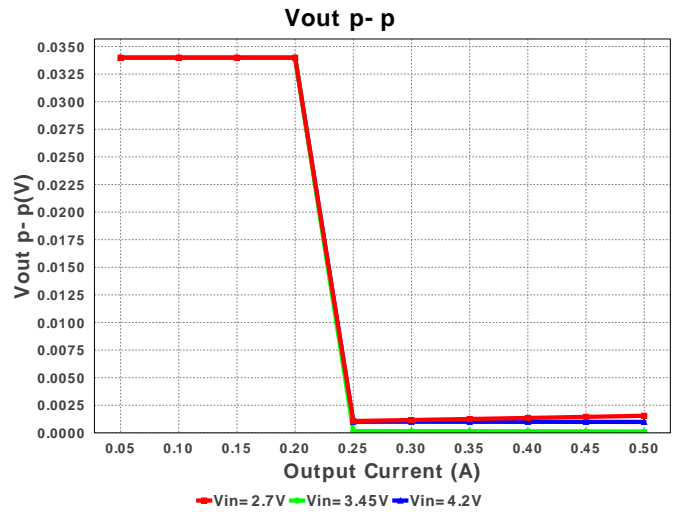
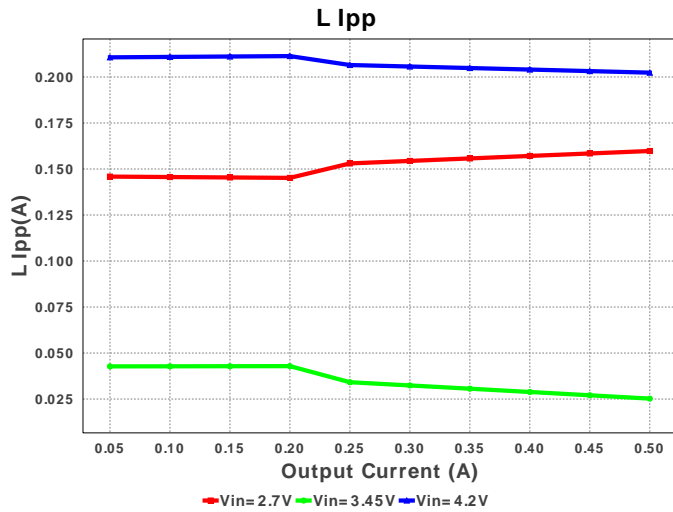
Design : 3569363/75 TPS63021DSJR
TPS63021DSJR 2.7V-4.2V to 3.30V @ 0.5A

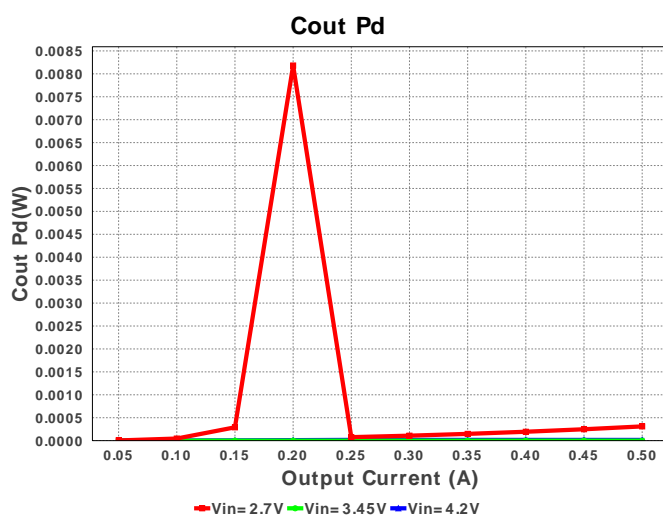
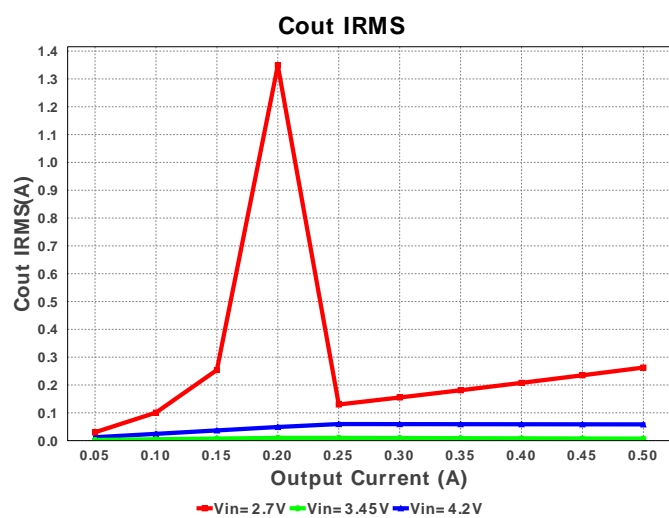
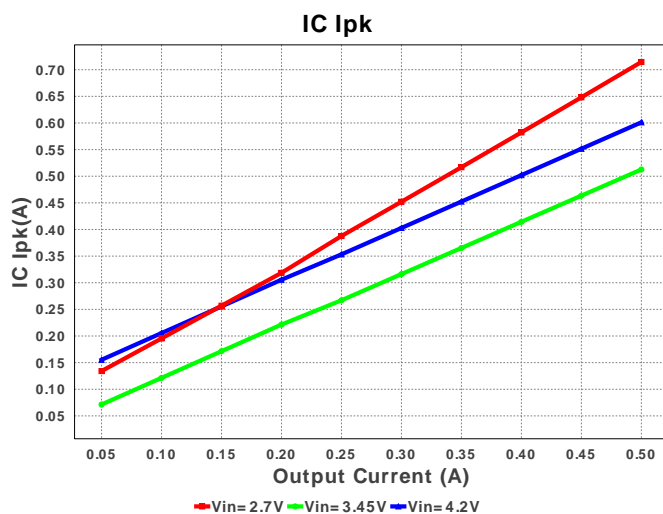
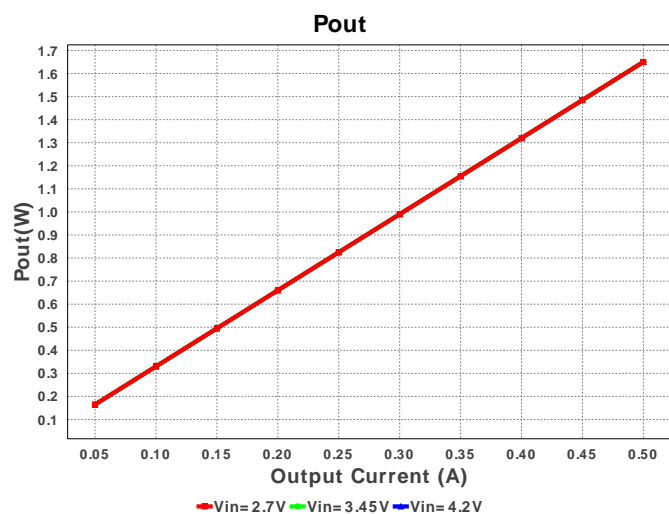
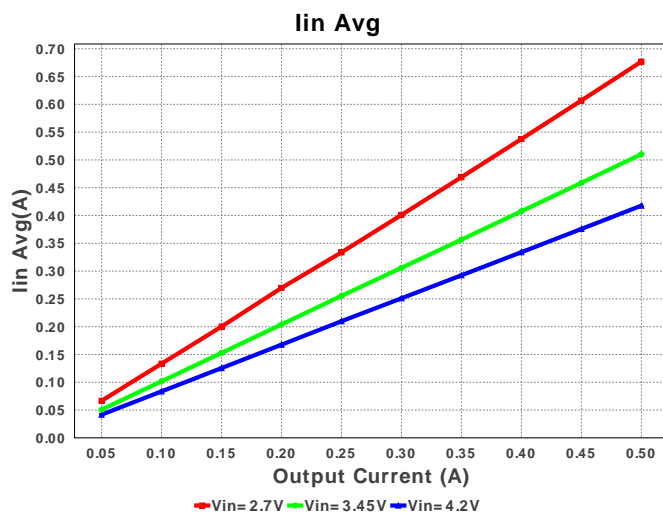
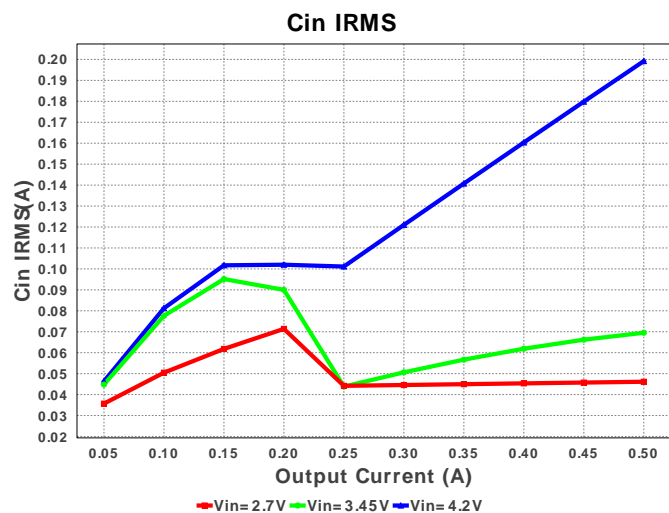
Vout = 3.3V
Iout = 0.5A

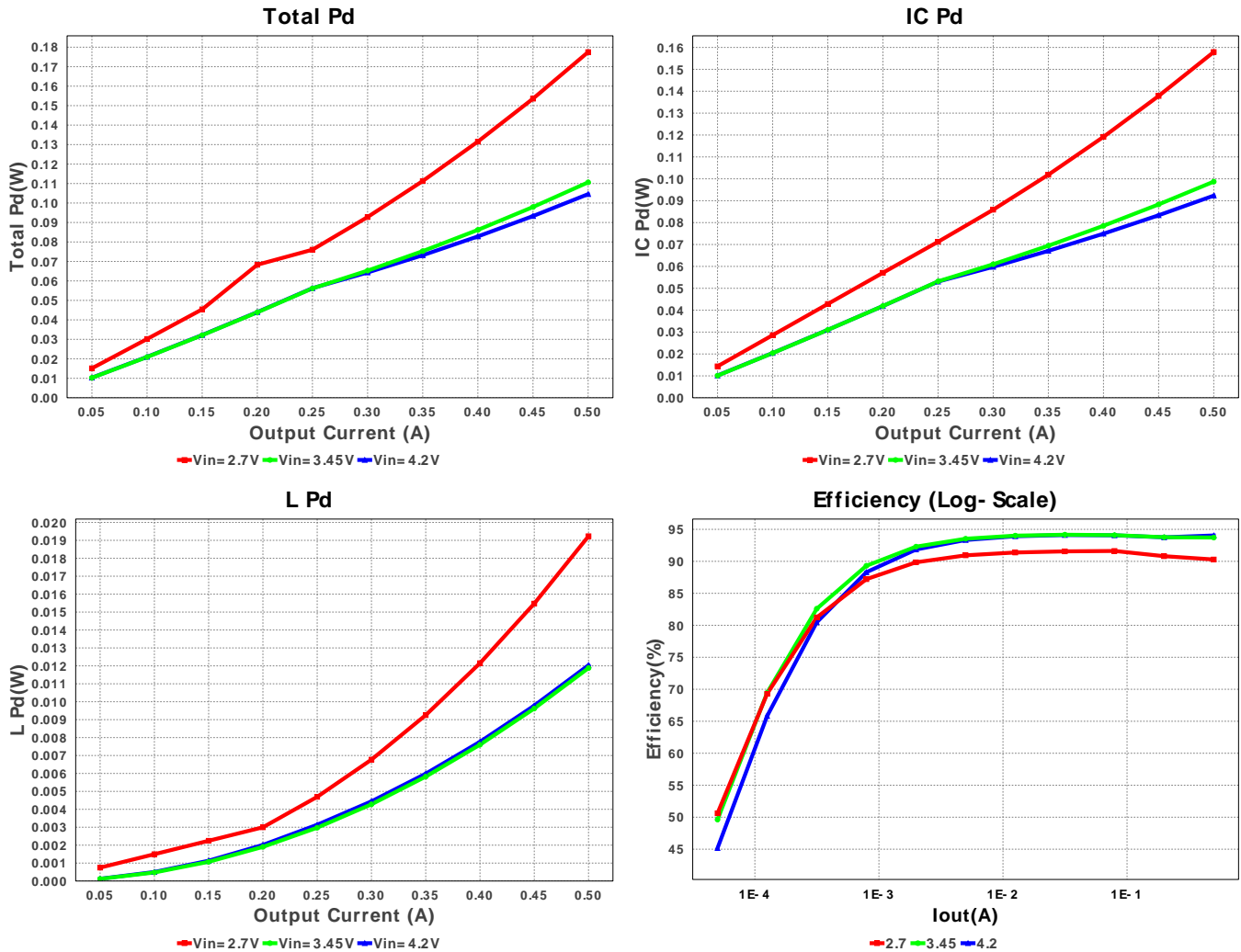


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	MuRata	GRM188R60J106ME47D Series= X5R	Cap= 10.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 2.74 A	2	\$0.02	0603 5 mm ²
2.	Cout	MuRata	GRM21BR60J226ME39L Series= X5R	Cap= 22.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 3.5 A	2	\$0.04	0805 7 mm ²
3.	CvinA	MuRata	GRM188R70J104KA01D Series= X7R	Cap= 100.0 nF ESR= 30.0 mOhm VDC= 6.3 V IRMS= 1.75 A	1	\$0.01	0603 5 mm ²
4.	L1	Bourns	SDR0403-1R4ML	L= 1.4 uH DCR= 38.0 mOhm	1	\$0.18	SDR0403 28 mm ²
5.	U1	Texas Instruments	TPS63021DSJR	Switcher	1	\$1.15	R-PVSON-N14 20 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	46.126 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	262.654 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	714.515 mA	Current	Peak switch current in IC
4.	Iin Avg	676.84 mA	Current	Average input current
5.	L Ipp	159.79 mA	Current	Peak-to-peak inductor ripple current
6.	BOM Count	7	General	Total Design BOM count
7.	FootPrint	75.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	2.4 MHz	General	Switching frequency
9.	IC Tolerance	5.0 mV	General	IC Feedback Tolerance
10.	Mode	PWM	General	PWM/PFM Mode
11.	Pout	1.65 W	General	Total output power
12.	Total BOM	\$1.46	General	Total BOM Cost
13.	Duty Cycle	21.213 %	Op_point	Duty cycle
14.	Efficiency	90.288 %	Op_point	Steady state efficiency
15.	IC Tj	36.601 degC	Op_point	IC junction temperature
16.	ICThetaJA	41.8 degC/W	Op_point	IC junction-to-ambient thermal resistance
17.	IOUT_OP	500.0 mA	Op_point	Iout operating point
18.	VIN_OP	2.7 V	Op_point	Vin operating point
19.	Vout p-p	1.221 mV	Op_point	Peak-to-peak output ripple voltage
20.	Cin Pd	9.574 μW	Power	Input capacitor power dissipation
21.	Cout Pd	310.442 μW	Power	Output capacitor power dissipation
22.	IC Pd	157.917 mW	Power	IC power dissipation
23.	L Pd	19.231 mW	Power	Inductor power dissipation
24.	Total Pd	177.484 mW	Power	Total Power Dissipation
25.	Vout Tolerance	151.52 m%		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

#	Name	Value	Description
2.	VinMax	4.2	Maximum input voltage
3.	VinMin	2.7	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	base_pn	TPS63021	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS63021** Product Folder : <http://www.ti.com/product/TPS63021> : contains the data sheet and other resources.

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