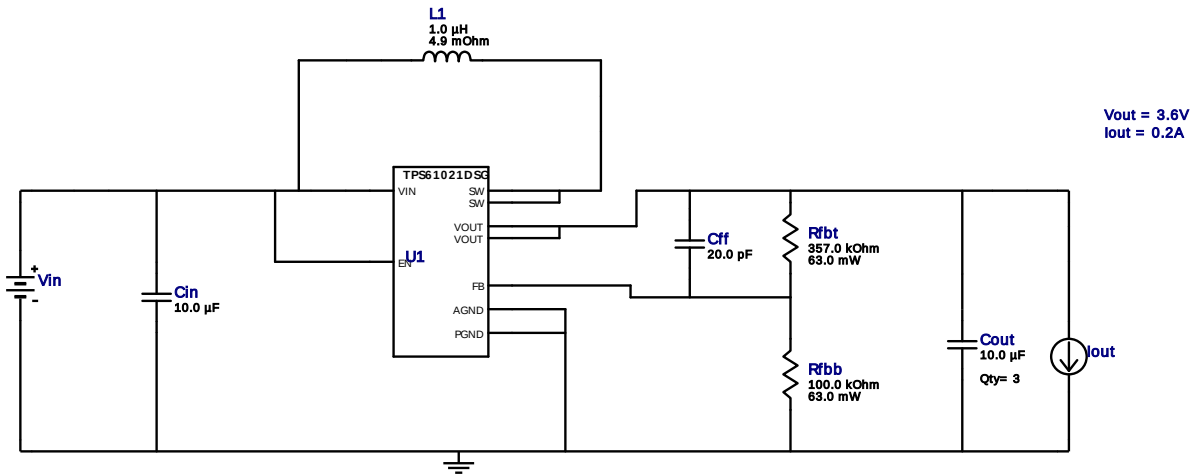


WEBENCH® Design Report

Design : 1177446/104 TPS61021ADSGR
TPS61021ADSGR 2.0V-3.3V to 3.60V @ 0.2A

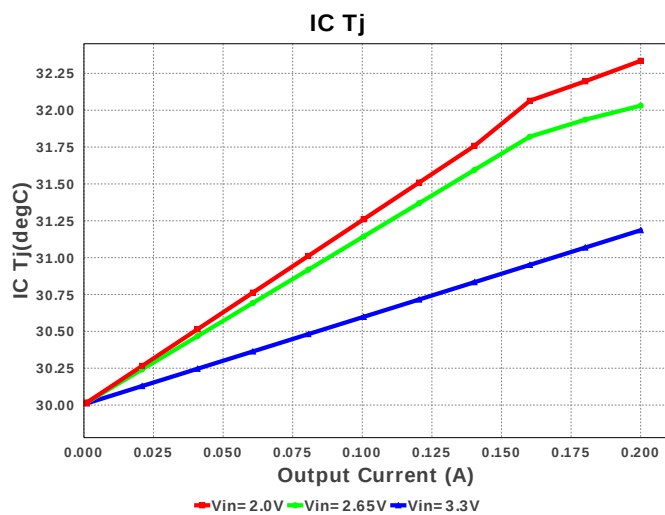
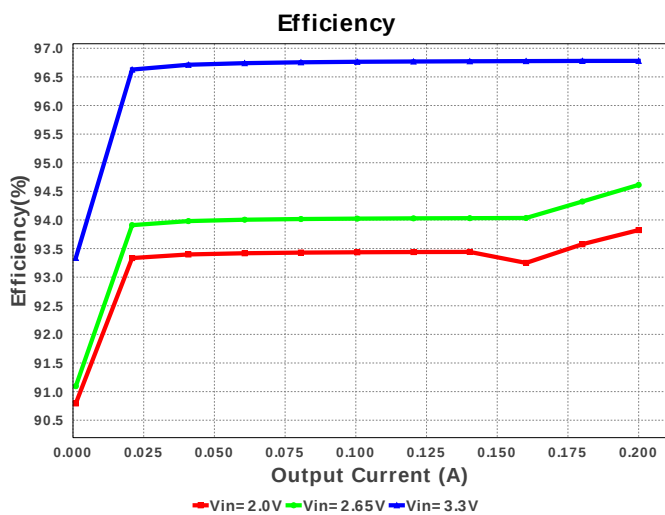
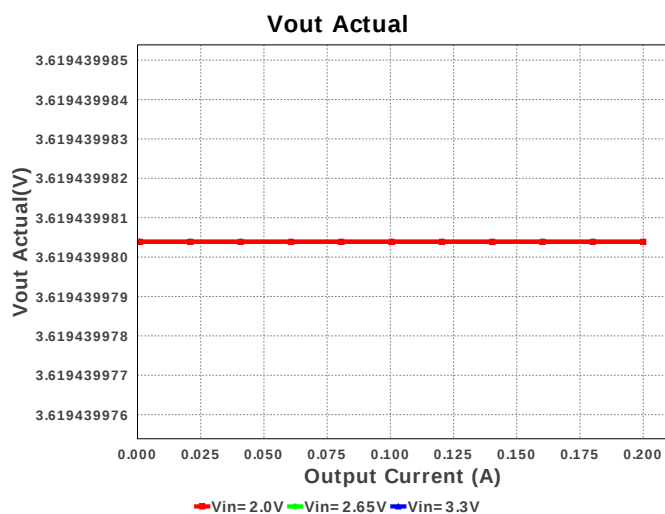
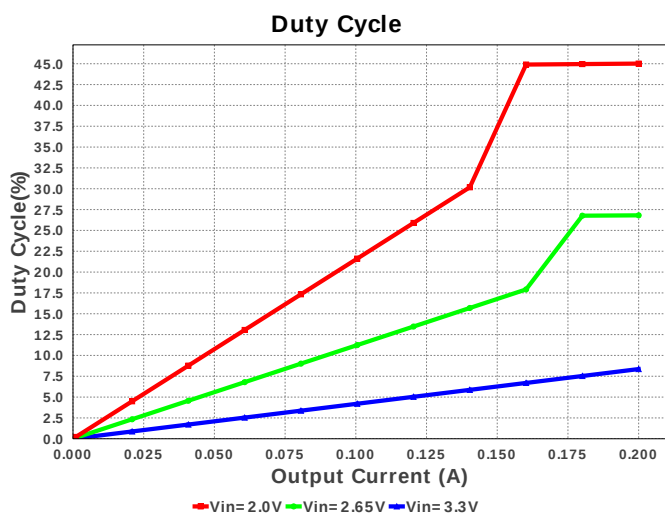
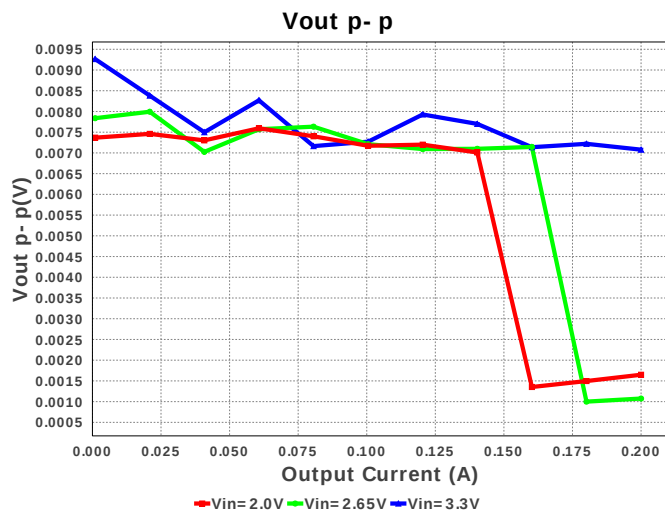
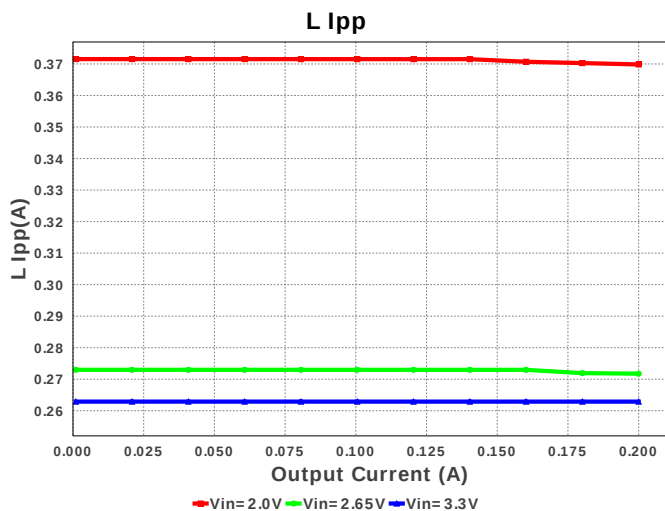


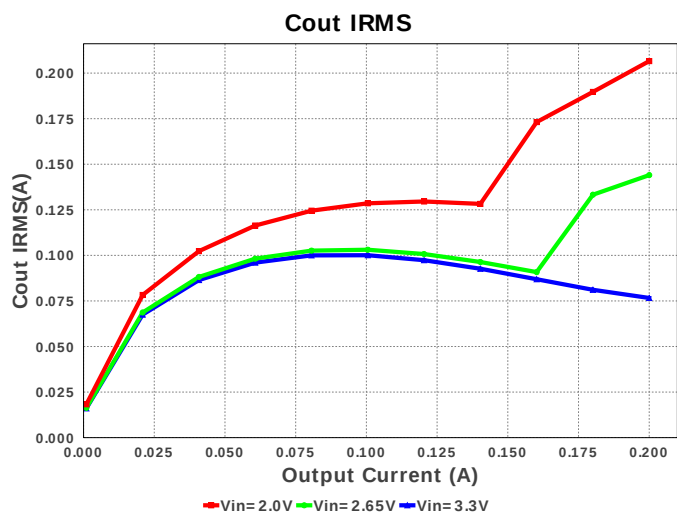
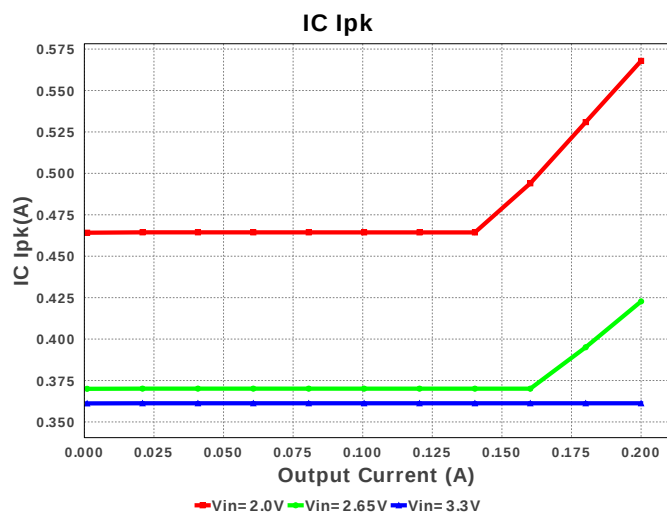
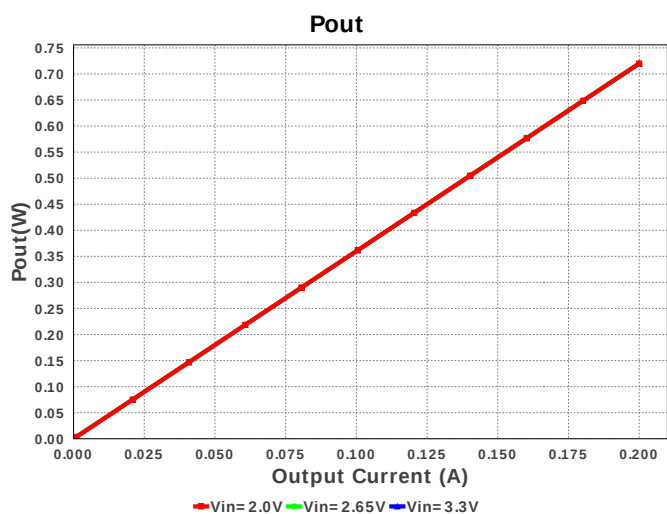
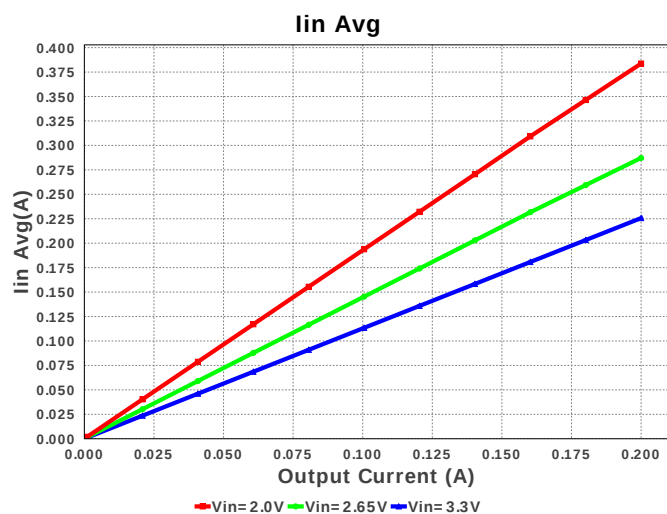
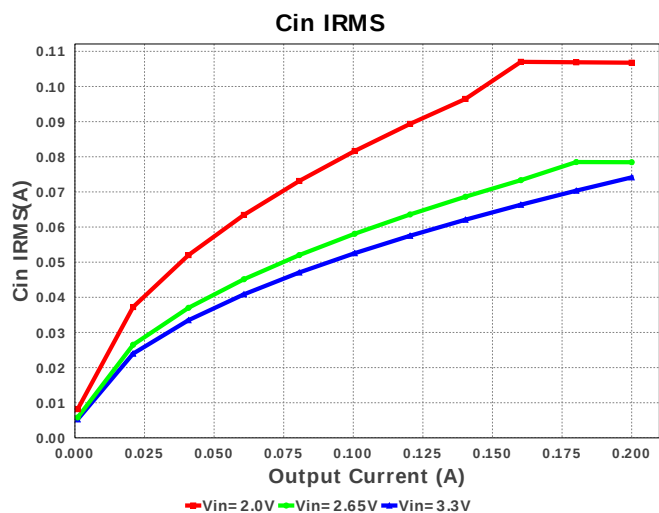
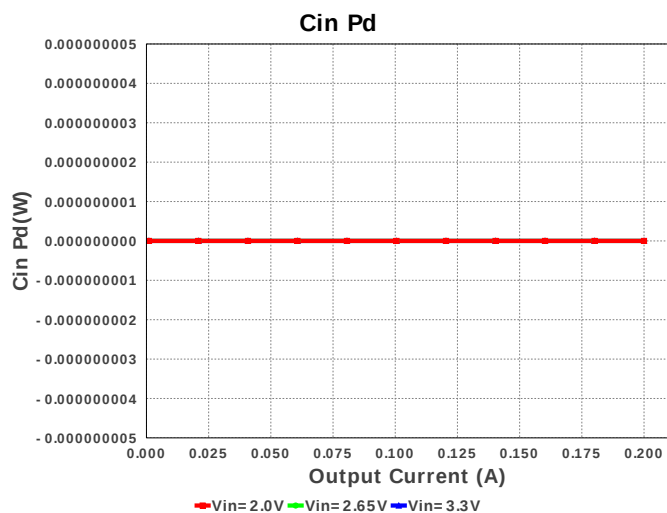
My Comments

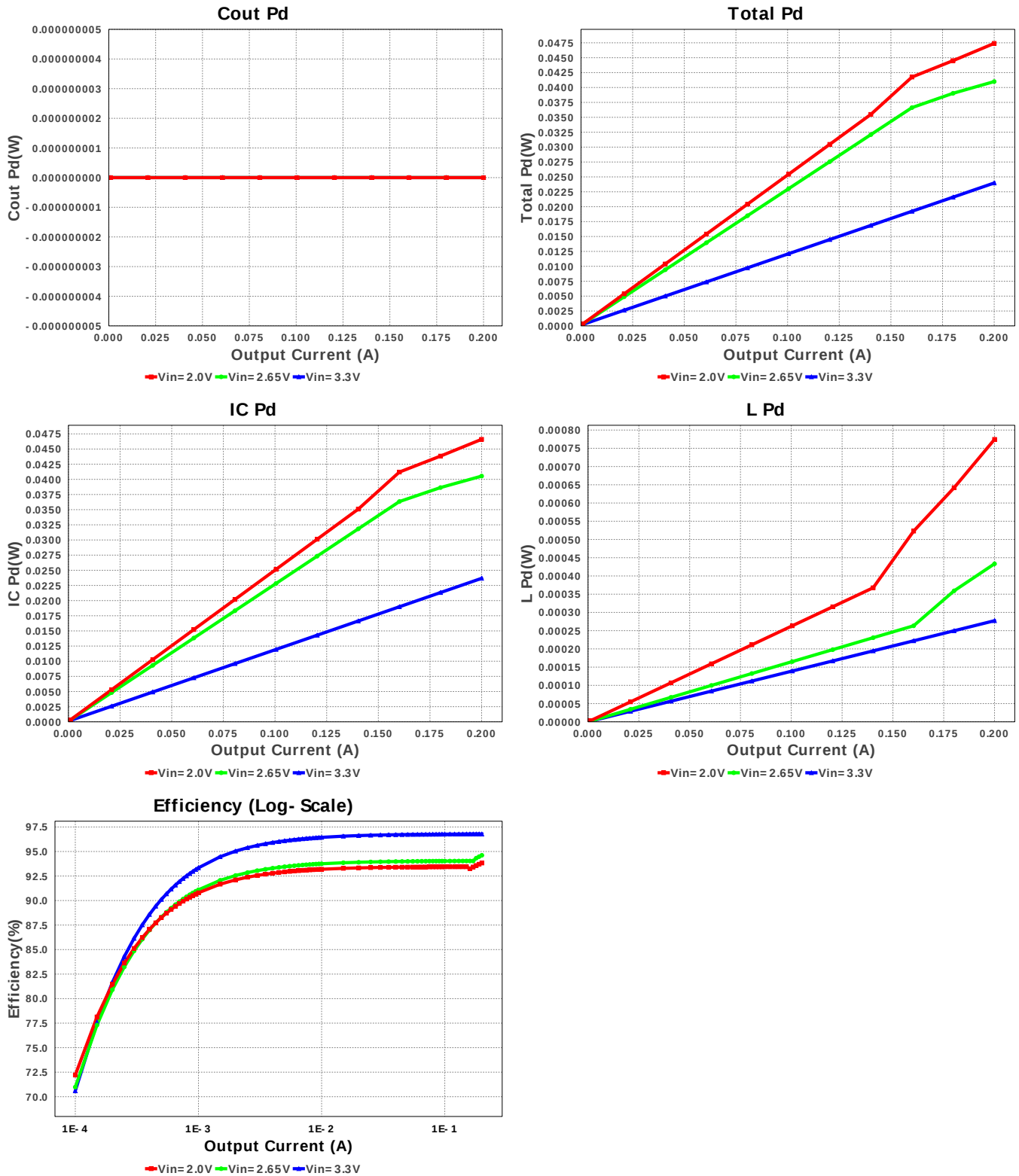
No comments

Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cff	Samsung Electro-Mechanics	CL10C200JB8NCNC Series= C0G/NP0	Cap= 20.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0603 5 mm ²
2.	Cin	Samsung Electro-Mechanics	CL10A106MQ8NNNC Series= X5R	Cap= 10.0 uF VDC= 6.3 V IRMS= 0.0 A	1	\$0.03	0603 5 mm ²
3.	Cout	Taiyo Yuden	LMK212BJ106KG-T Series= X5R	Cap= 10.0 uF VDC= 10.0 V IRMS= 0.0 A	3	\$0.03	0805 7 mm ²
4.	L1	Bourns	SRU1028-1R0Y	L= 1.0 µH DCR= 4.9 mOhm	1	\$0.33	SRU1028 144 mm ²
5.	Rfbb	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
6.	Rfbt	Vishay-Dale	CRCW0402357KFKED Series= CRCW..e3	Res= 357.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
7.	U1	Texas Instruments	TPS61021ADSGR	Switcher	1	\$0.60	DSG0008A 9 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	106.767 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	206.584 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	567.885 mA	Current	Peak switch current in IC
4.	Iin Avg	383.7 mA	Current	Average input current
5.	L Ipp	369.85 mA	Current	Peak-to-peak inductor ripple current
6.	BOM Count	9	General	Total Design BOM count
7.	FootPrint	189.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	2.0 MHz	General	Switching frequency
9.	Mode	BOOST PWM CCM	General	PWM/PFM Mode
10.	Pout	720.0 mW	General	Total output power
11.	Total BOM	\$1.08	General	Total BOM Cost

#	Name	Value	Category	Description
12.	Vout Actual	3.619 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
13.	Vout OP	3.6 V	Op_Point	Operational Output Voltage
14.	Duty Cycle	45.016 %	Op_point	Duty cycle
15.	Efficiency	93.823 %	Op_point	Steady state efficiency
16.	IC Tj	32.335 degC	Op_point	IC junction temperature
17.	ICThetaJA	50.1 degC/W	Op_point	IC junction-to-ambient thermal resistance
18.	IOUT_OP	200.0 mA	Op_point	Iout operating point
19.	VIN_OP	2.0 V	Op_point	Vin operating point
20.	Vout p-p	1.648 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	0.0 W	Power	Input capacitor power dissipation
22.	Cout Pd	0.0 W	Power	Output capacitor power dissipation
23.	IC Pd	46.601 mW	Power	IC power dissipation
24.	L Pd	774.479 μ W	Power	Inductor power dissipation
25.	Total Pd	47.402 mW	Power	Total Power Dissipation
26.	Vout Tolerance	3.502 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	200.0 m	Maximum Output Current
2.	VinMax	3.3	Maximum input voltage
3.	VinMin	2.0	Minimum input voltage
4.	Vout	3.6	Output Voltage
5.	base_pn	TPS61021A	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

1. TPS61021A Product Folder : <http://www.ti.com/product/TPS61021A> : contains the data sheet and other resources.

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