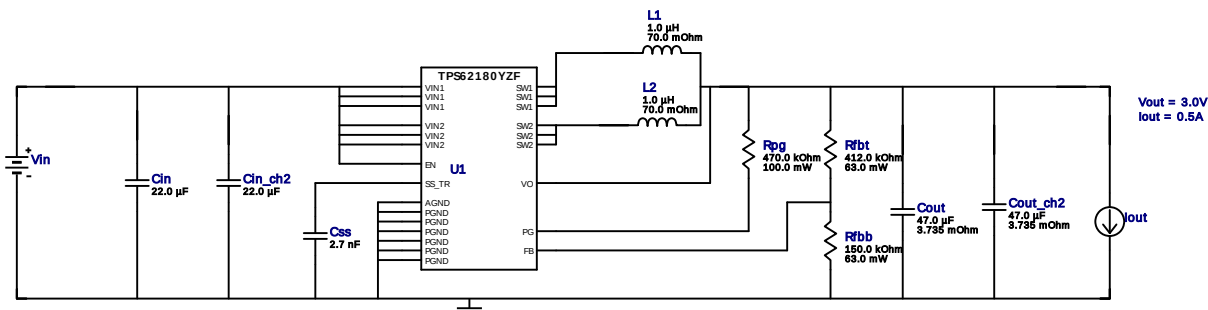


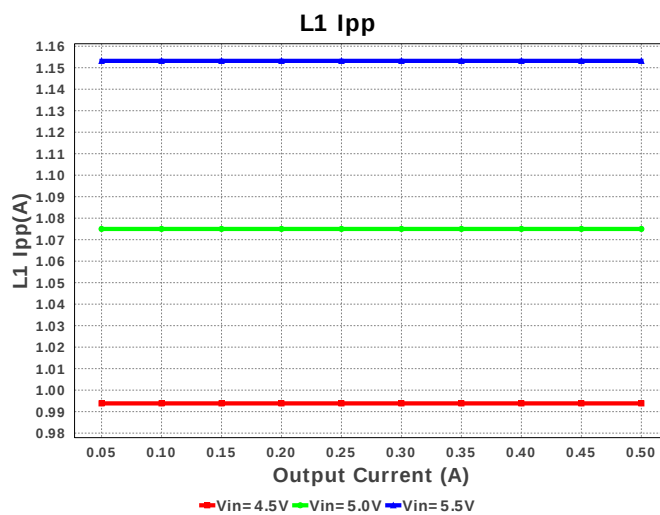
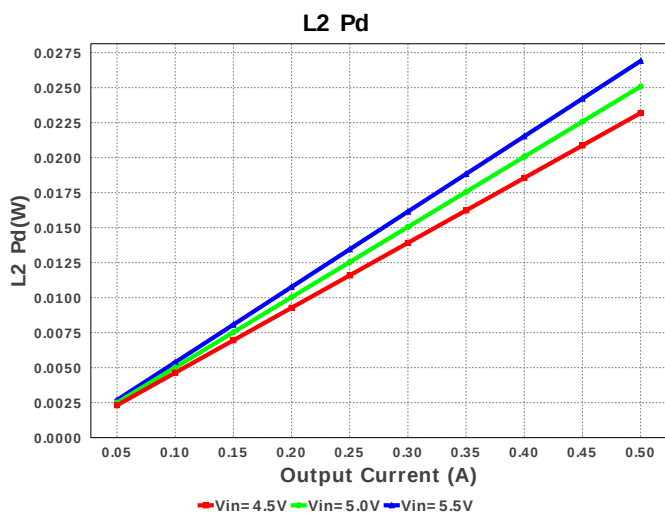
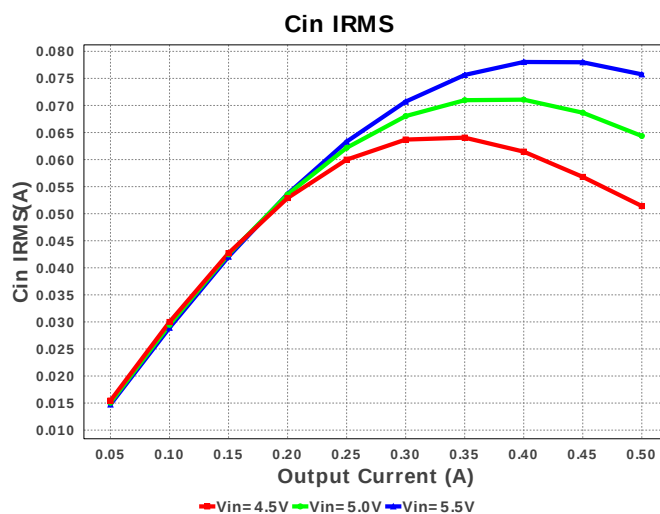
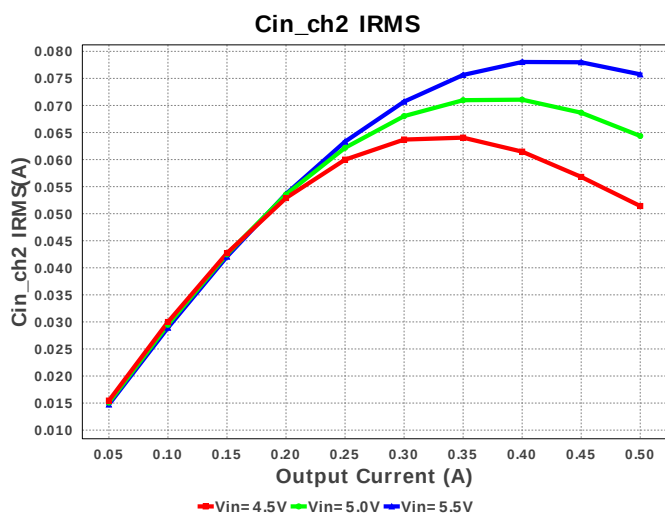
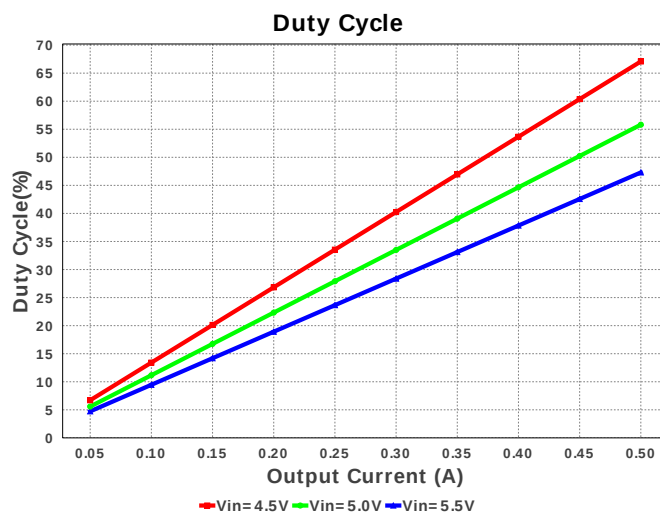
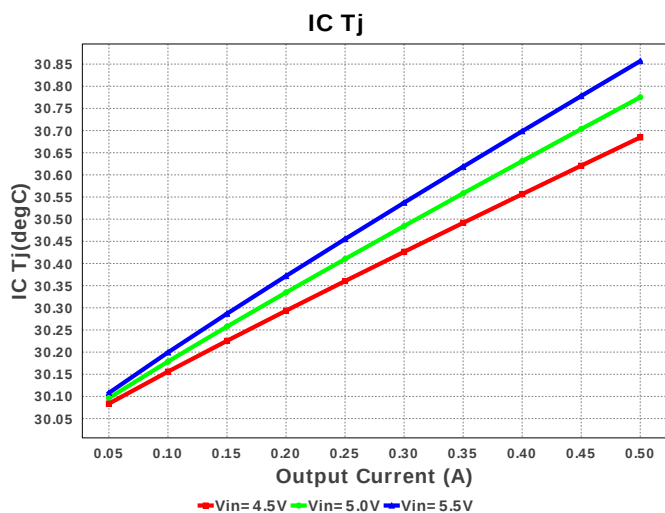
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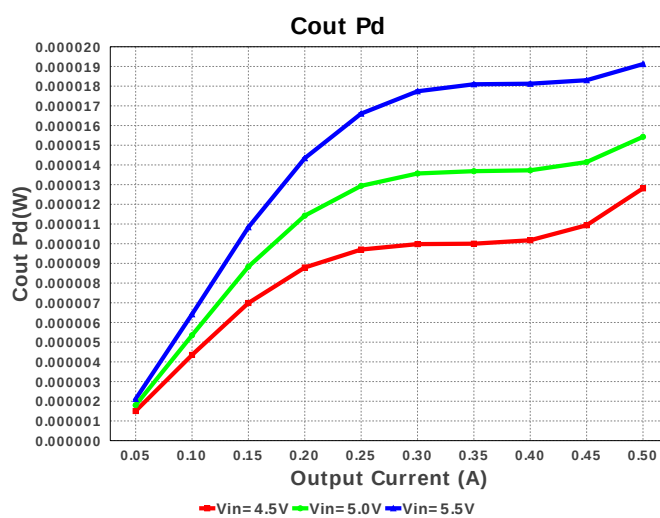
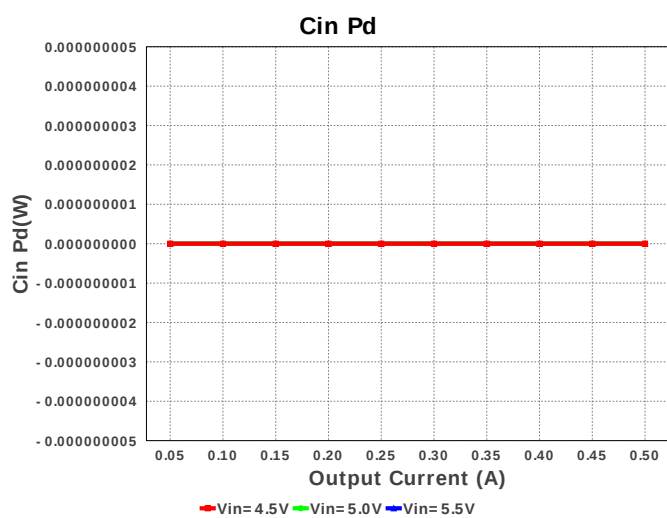
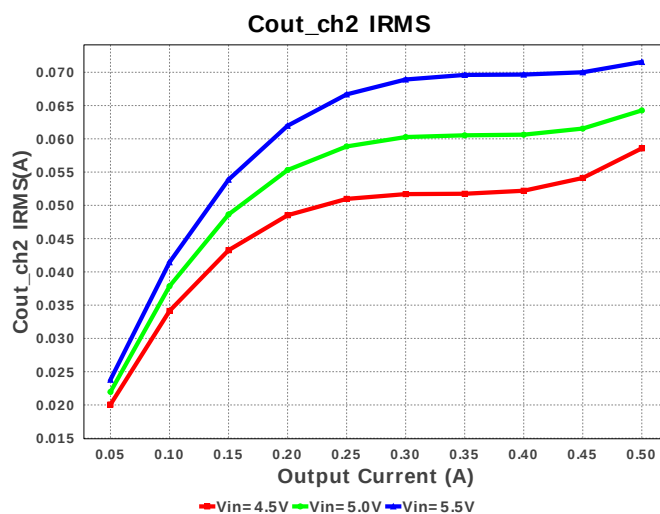
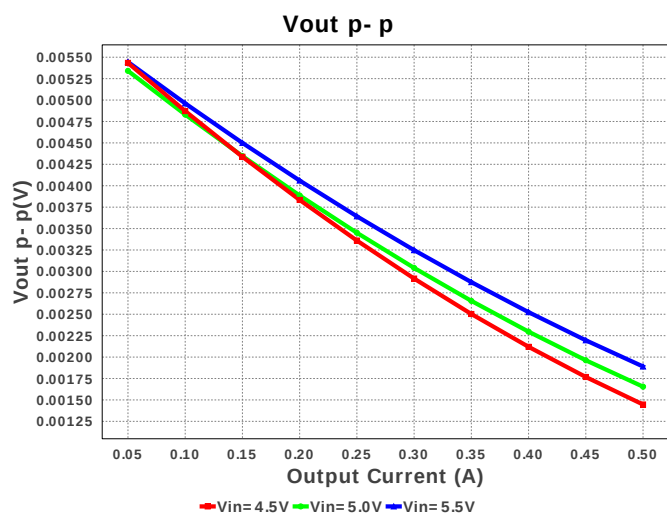
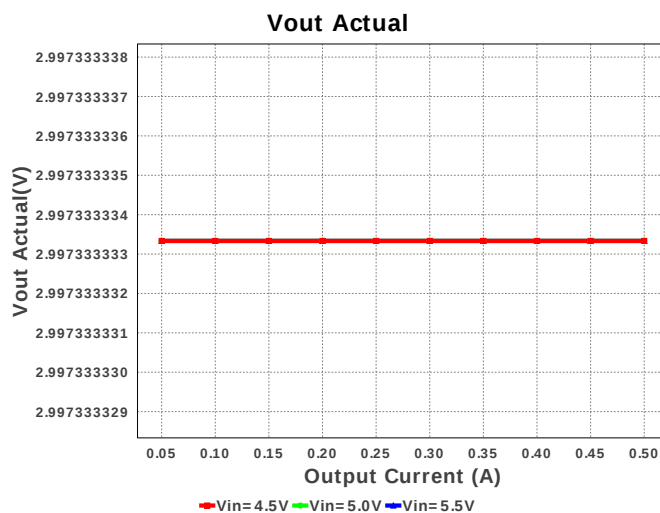
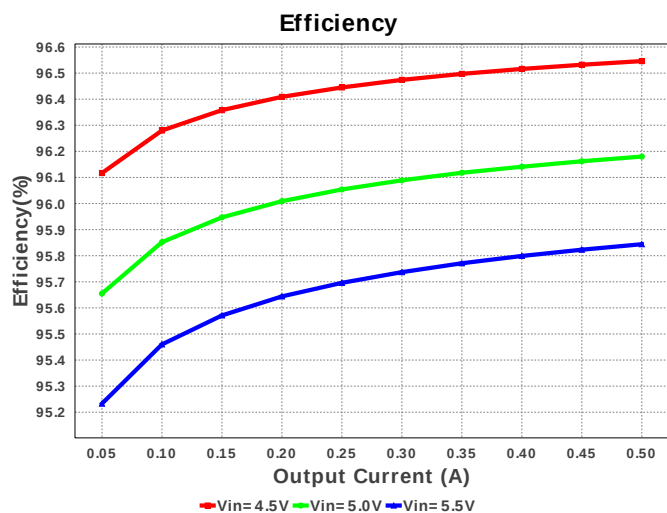
Design : 4742013/165 TPS62180YZFR
TPS62180YZFR 4.5V-5.5V to 3.00V @ 0.5A

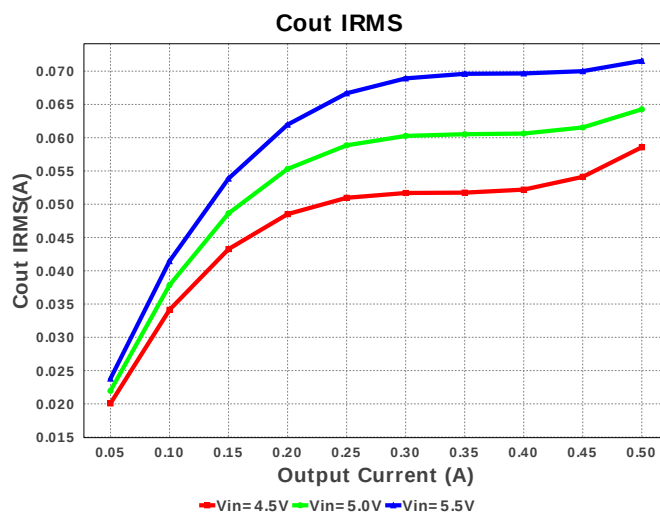
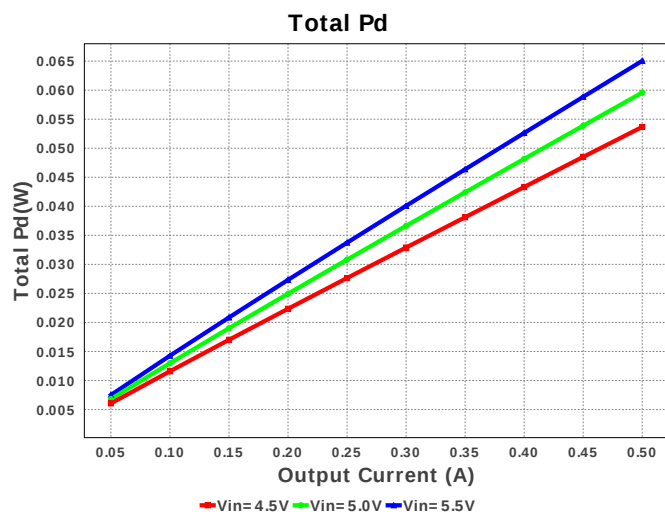
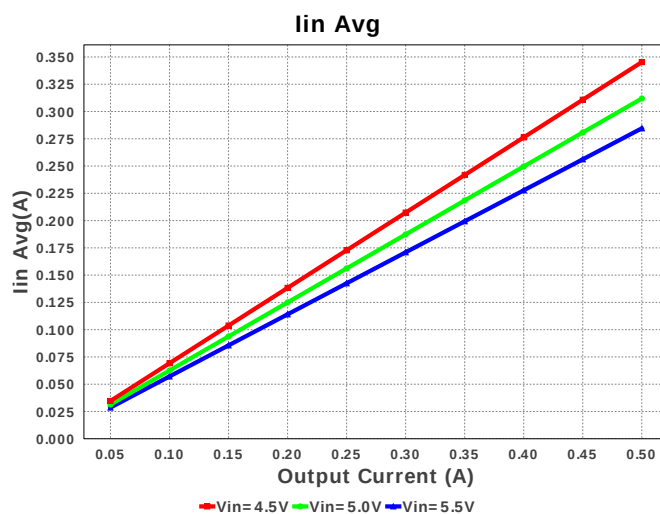
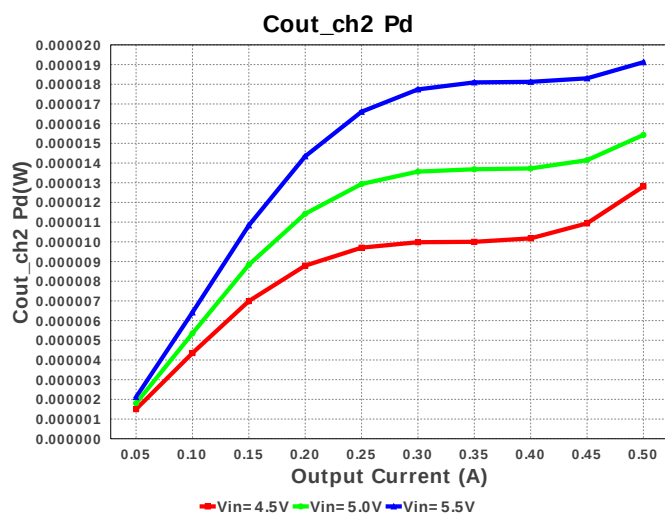
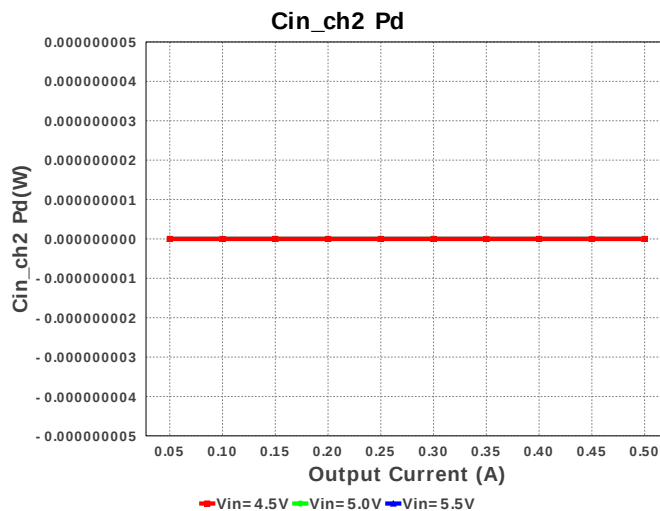
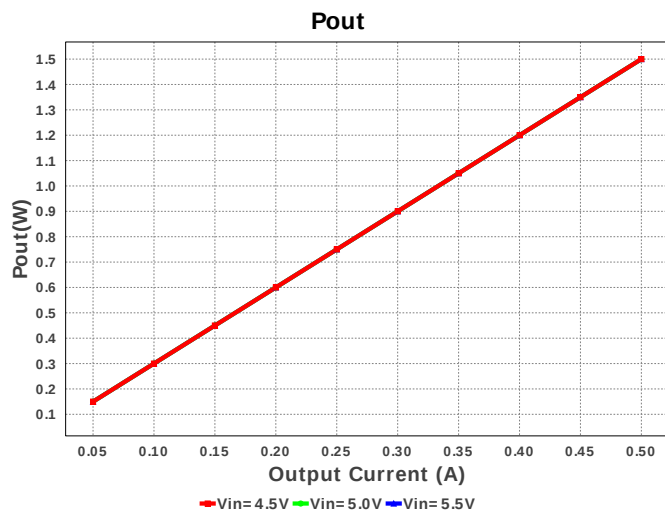


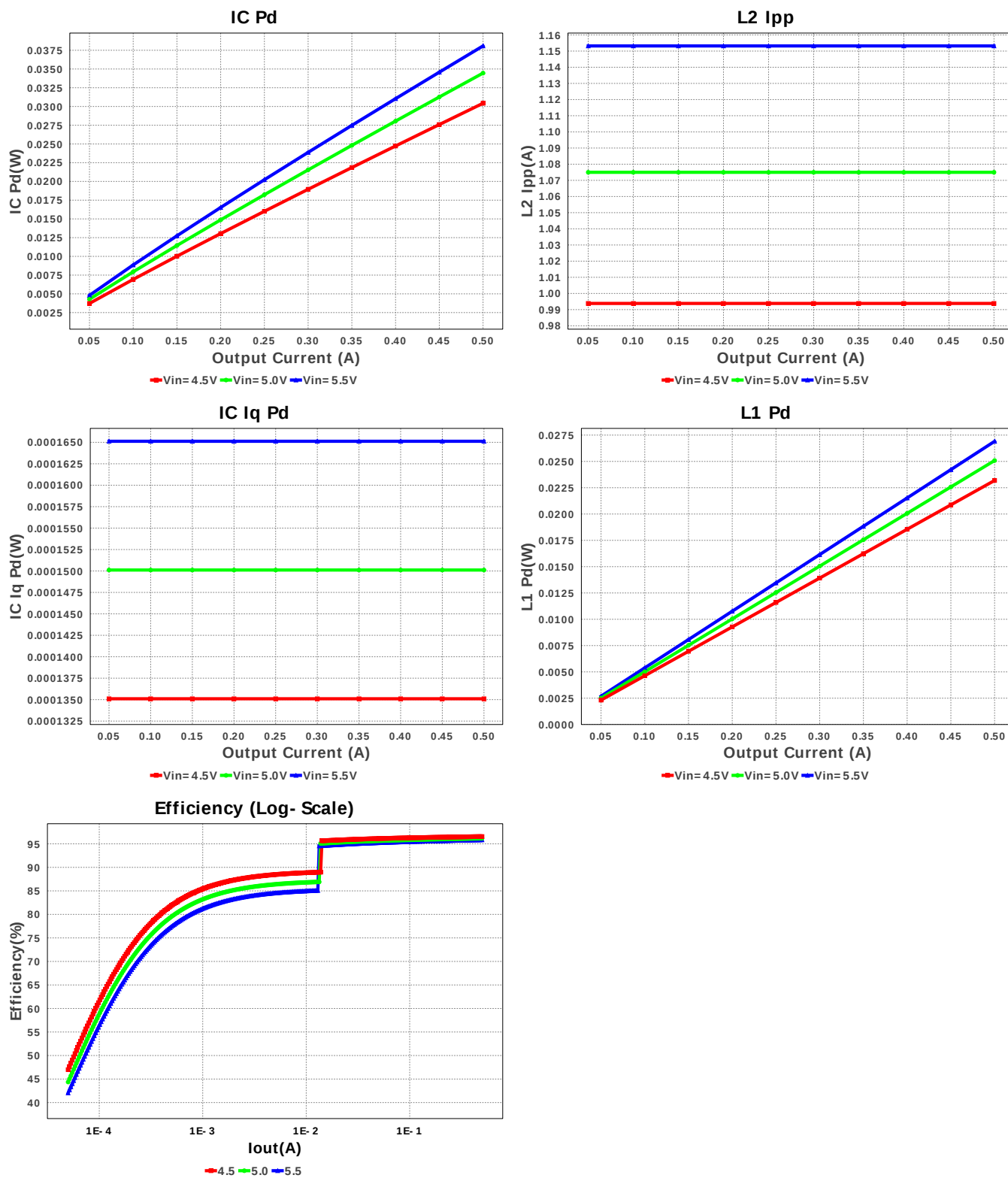
Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	Taiyo Yuden	LMK212BJ226MG-T Series= X5R	Cap= 22.0 uF VDC= 10.0 V IRMS= 0.0 A	1	\$0.12	0805 7 mm ²
2.	Cin_ch2	Taiyo Yuden	LMK212BJ226MG-T Series= X5R	Cap= 22.0 uF VDC= 10.0 V IRMS= 0.0 A	1	\$0.12	0805 7 mm ²
3.	Cout	MuRata	GRM31CC80J476KE18L Series= X6S	Cap= 47.0 uF ESR= 3.735 mOhm VDC= 6.3 V IRMS= 4.0522 A	1	\$0.10	1206_190 11 mm ²
4.	Cout_ch2	MuRata	GRM31CC80J476KE18L Series= X6S	Cap= 47.0 uF ESR= 3.735 mOhm VDC= 6.3 V IRMS= 4.0522 A	1	\$0.10	1206_190 11 mm ²
5.	Css	MuRata	GRM188R71E272KA01D Series= X7R	Cap= 2.7 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0603 5 mm ²
6.	L1	TDK	NLFV25T-1R0M-PF	L= 1.0 uH DCR= 70.0 mOhm	1	\$0.11	NLCV25 10 mm ²
7.	L2	TDK	NLFV25T-1R0M-PF	L= 1.0 uH DCR= 70.0 mOhm	1	\$0.11	NLCV25 10 mm ²
8.	Rfbb	Vishay-Dale	CRCW0402150KFKED Series= CRCW..e3	Res= 150.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
9.	Rfbb	Vishay-Dale	CRCW0402412KFKED Series= CRCW..e3	Res= 412.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
10.	Rpg	Yageo America	RC0603FR-07470KL Series= ?	Res= 470.0 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	0603 5 mm ²
11.	U1	Texas Instruments	TPS62180YZFR	Switcher	1	\$1.40	YZF0024AMAM 13 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	75.75 mA	Current	Input capacitor RMS ripple current
2.	Cin_ch2 IRMS	75.75 mA	Current	Input Capacitor Cin2 RMS Ripple Current
3.	Cout IRMS	71.549 mA	Current	Output capacitor RMS ripple current
4.	Cout_ch2 IRMS	71.549 mA	Current	Output capacitor2 RMS ripple current
5.	Iin Avg	284.55 mA	Current	Average input current
6.	L1 Ipp	1.153 A	Current	Peak-to-peak inductor ripple current
7.	L2Ipp	1.153 A	Current	Peak-to-peak inductor ripple current
8.	BOM Count	11	General	Total Design BOM count
9.	FootPrint	83.0 mm ²	General	Total Foot Print Area of BOM components
10.	Frequency	1.025 MHz	General	Switching frequency
11.	IC Tolerance	20.0 mV	General	IC Feedback Tolerance

#	Name	Value	Category	Description
12.	Pout	1.5 W	General	Total output power
13.	Total BOM	\$2.1	General	Total BOM Cost
14.	Vout Actual	2.997 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
15.	Vout OP	3.0 V	Op_Point	Operational Output Voltage
16.	Duty Cycle	47.3 %	Op_point	Duty cycle
17.	Efficiency	95.844 %	Op_point	Steady state efficiency
18.	IC Tj	30.857 degC	Op_point	IC junction temperature
19.	ICThetaJA	22.5 degC/W	Op_point	IC junction-to-ambient thermal resistance
20.	IOUT_OP	500.0 mA	Op_point	Iout operating point
21.	VIN_OP	5.5 V	Op_point	Vin operating point
22.	Vout p-p	1.648 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	0.0 W	Power	Input capacitor power dissipation
24.	Cin_ch2 Pd	0.0 W	Power	Average Power Dissipation in the Input Capacitor Cin2
25.	Cout Pd	19.121 µW	Power	Output capacitor power dissipation
26.	Cout_ch2 Pd	19.121 µW	Power	Output capacitor2 power dissipation
27.	IC Iq Pd	165.124 µW	Power	IC Iq Pd
28.	IC Pd	38.079 mW	Power	IC power dissipation
29.	L1 Pd	26.908 mW	Power	Inductor power dissipation
30.	L2 Pd	26.908 mW	Power	Inductor power dissipation
31.	Total Pd	65.042 mW	Power	Total Power Dissipation
32.	Vout Tolerance	4.018 %		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	5.5	Maximum input voltage
3.	VinMin	4.5	Minimum input voltage
4.	Vout	3.0	Output Voltage
5.	base_pn	TPS62180	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. [TPS62180 Product Folder](http://www.ti.com/product/TPS62180) : <http://www.ti.com/product/TPS62180> : contains the data sheet and other resources.

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