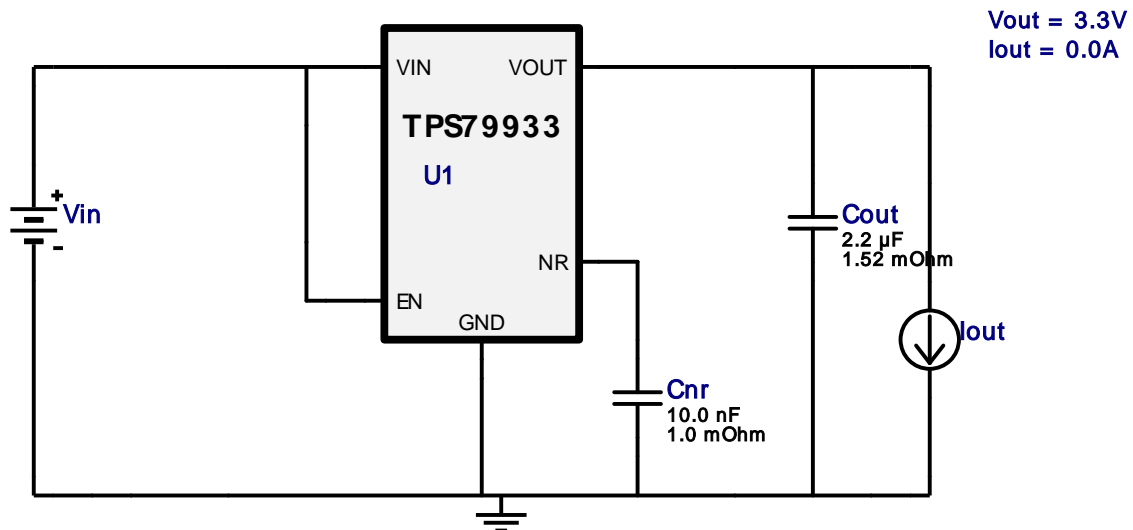# TEXAS INSTRUMENTS

WEBENCH ® Design Report

Design : 5281144/13 TPS79933DDCR
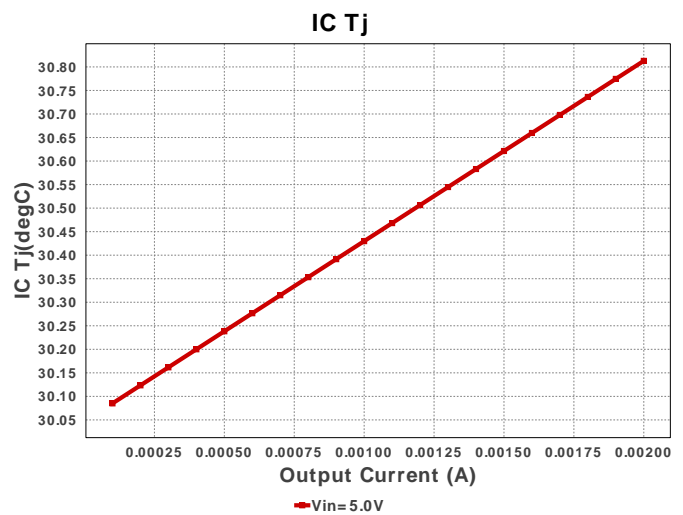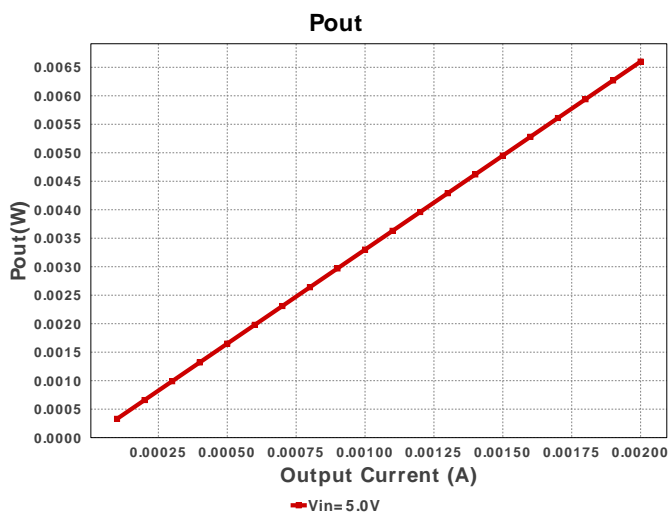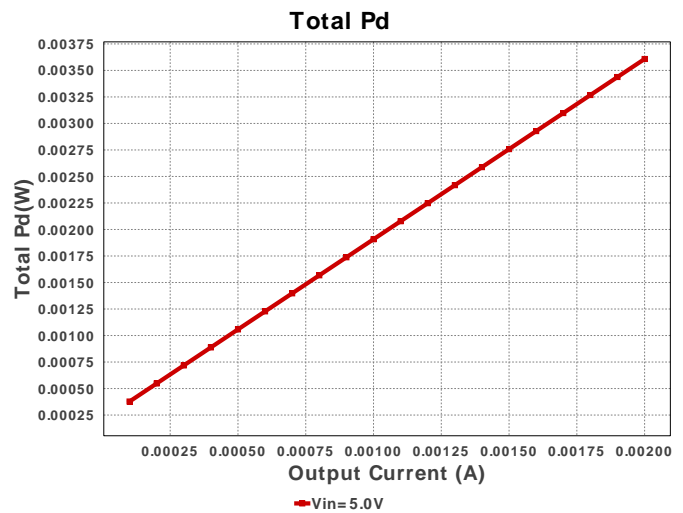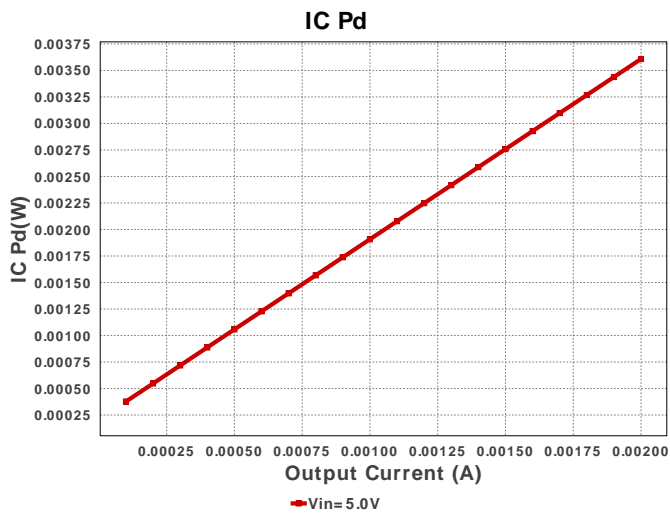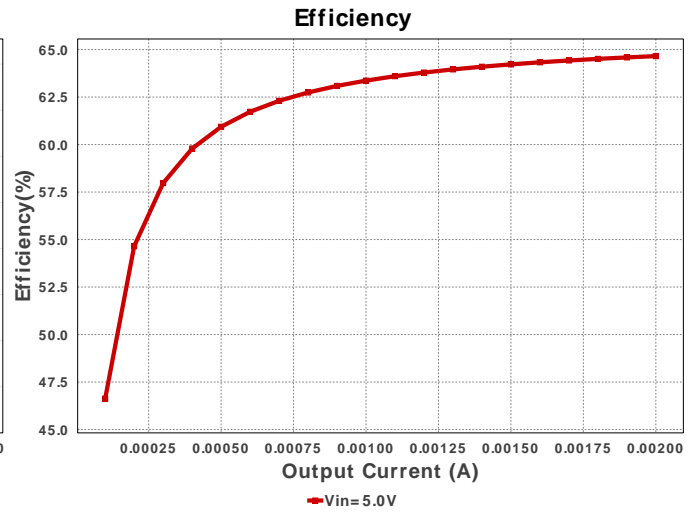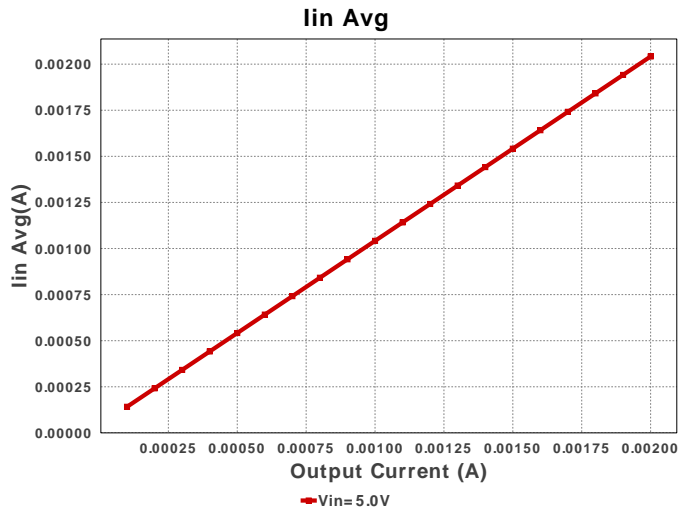TPS79933DDCR 5.0V-5.0V to 3.30V @ 0.002A

1. This regulator device is qualified for Automotive applications. All passives and other components selected in this design may not be qualified for Automotive applications. The user is required to verify that all components in the design meet the qualification and safety requirements for their specific application.View WEBENCH(R) Disclaimer.

My Comments
No comments

Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cnr	MuRata	GRM033R70J103KA01D Series= X7R	Cap= 10.0 nF ESR= 1.0 mOhm VDC= 6.3 V IRMS= 0.0 A	1	$0.01	0201 2 mm^2
2.	Cout	Taiyo Yuden	JMK105BJ225MV-F Series= X5R	Cap= 2.2 uF ESR= 1.52 mOhm VDC= 6.3 V IRMS= 0.0 A	1	$0.03	0402 3 mm^2
3.	U1	Texas Instruments	TPS79933DDCR	Switcher	1	$0.28	R-PDSO-G5 16 mm^2

Iin Avg

■ Vin= 5.0V

Efficiency

■ Vin= 5.0V

IC Pd

■ Vin= 5.0V

Total Pd

■ Vin= 5.0V

Pout

■ Vin= 5.0V

IC Tj

■ Vin= 5.0V

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OpvalName.ForVoutAct

IC Iground

Safe Operating Area

PSRR vs Frequency
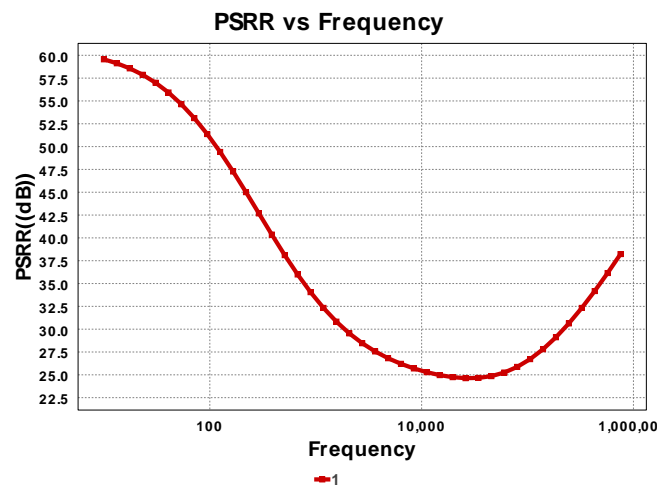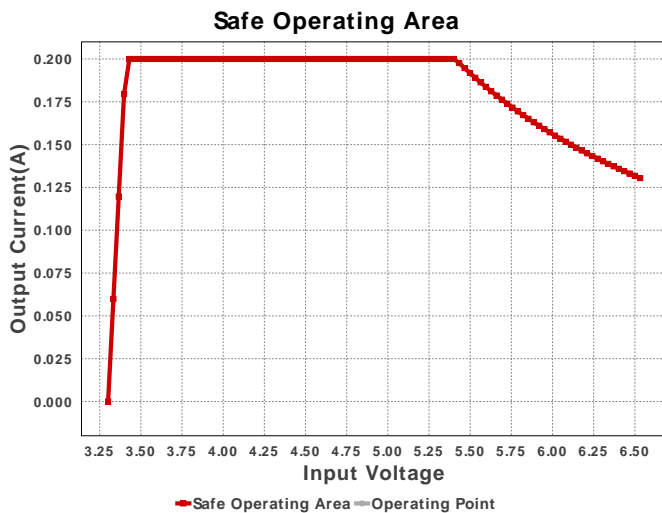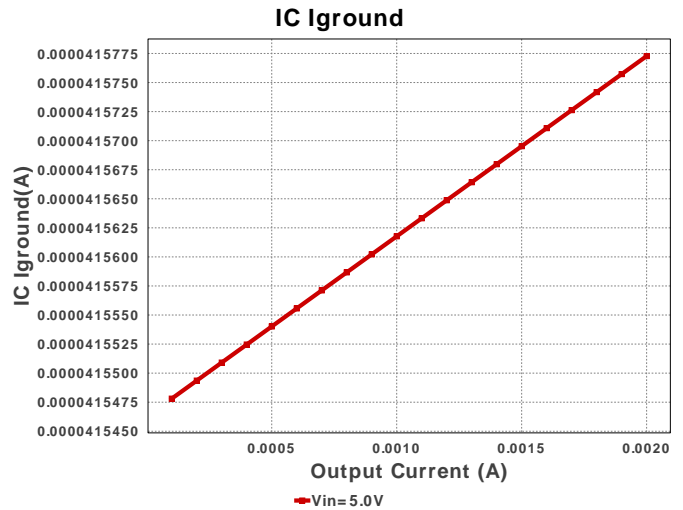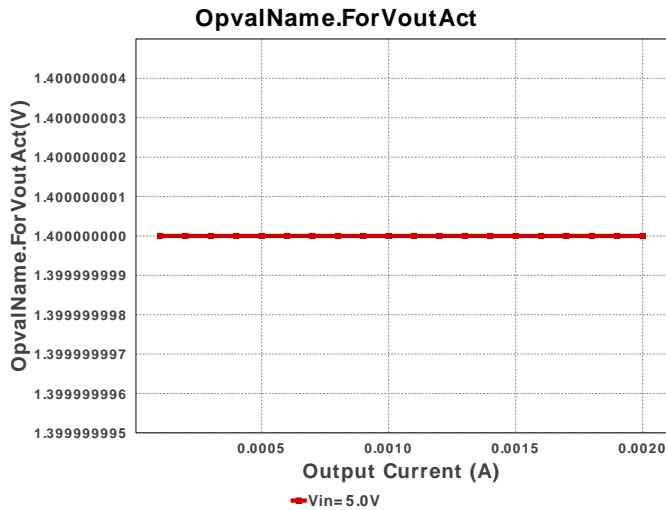
Operating Values

#	Name	Value	Category	Description
1.	IC Iground	41.577 µA	Current	IC ground current
2.	Iin Avg	2.042 mA	Current	Average input current
3.	BOM Count	3	General	Total Design BOM count
4.	FootPrint	21.0 mm^2	General	Total Foot Print Area of BOM components
5.	IC Tolerance	66.0 mV	General	IC Feedback Tolerance
6.	Output Noise RMS	6.93 µV	General	Noise RMS
7.	Pout	6.6 mW	General	Total output power
8.	Total BOM	$0.32	General	Total BOM Cost
9.	Efficiency	64.656 %	Op Point	Steady state efficiency
10.	IC Tj	30.813 degC	Op Point	IC junction temperature
11.	ICThetaJA	225.3 degC/W	Op Point	IC junction-to-ambient thermal resistance
12.	IOUT_OP	2.0 mA	Op Point	Iout operating point
13.	Input Ripple Frequency	100.0 kHz	Op Point	Input Source Ripple Frequency for PSRR Calculation
14.	PSRR est.	-26.531 dB	Op Point	Power Supply Rejection Ratio estimated
15.	VIN_OP	5.0 V	Op Point	Vin operating point
16.	Vin p-p	50.0 mV	Op Point	Input Source ripple voltage
17.	Vout OP	3.3 V	Op Point	Operational Output Voltage
18.	Vout Tolerance	2.0 %	Op Point	Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable
19.	Vout p-p	2.357 mV	Op Point	Peak-to-peak output ripple voltage
20.	IC Pd	3.608 mW	Power	IC power dissipation
21.	Total Pd	3.608 mW	Power	Total Power Dissipation
22.	Vout Act	1.4 V		Achieved Vout with feedback resistor pair

Design Inputs

#	Name	Value	Description
1.	Iout	2.0 m	Maximum Output Current
2.	VinMax	5.0	Maximum input voltage
3.	VinMin	5.0	Minimum input voltage
4.	Vout	3.3	Output Voltage

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#	Name	Value	Description
5.	base_pn	TPS79933	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS79933** Product Folder : http://www.ti.com/product/tps799 : contains the data sheet and other resources.