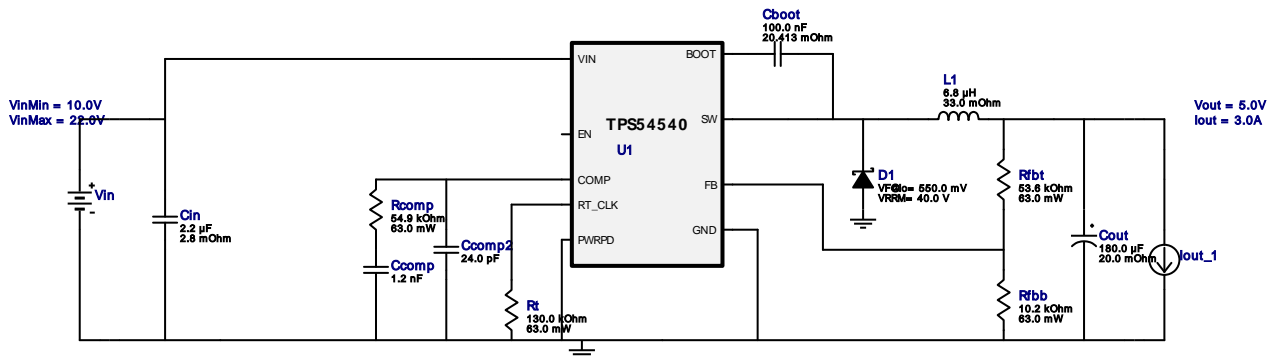


WEBENCH® Relatório de design

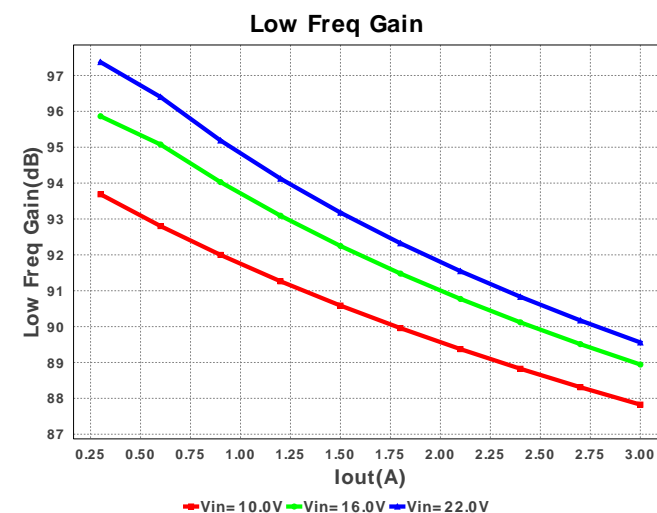
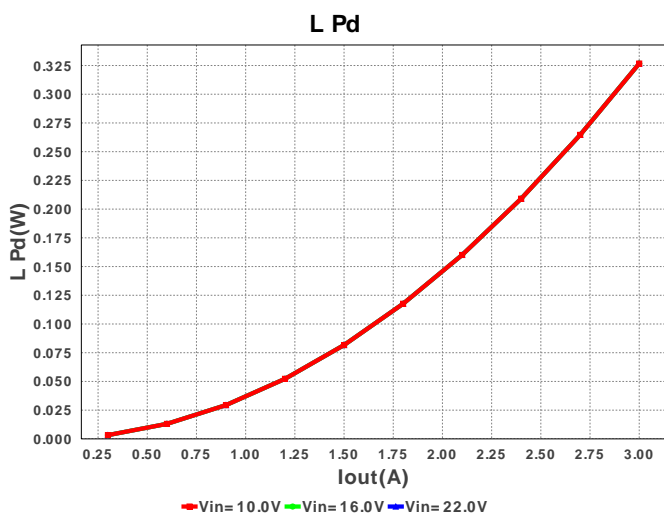
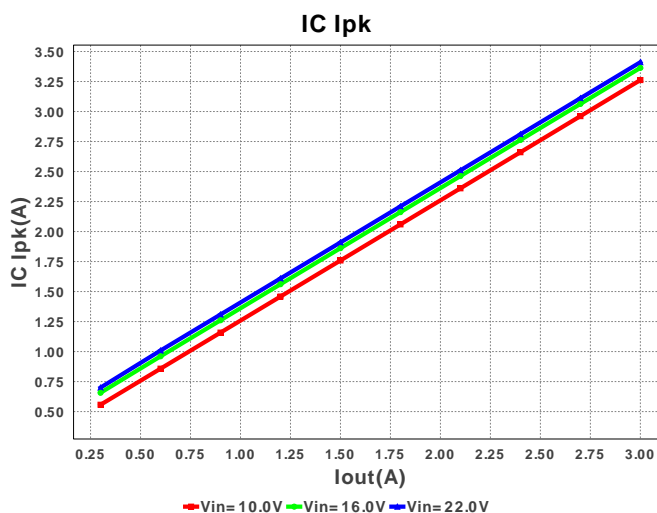
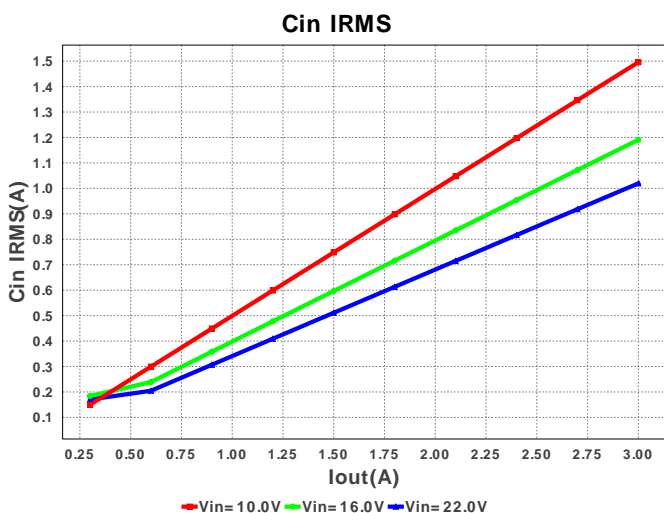
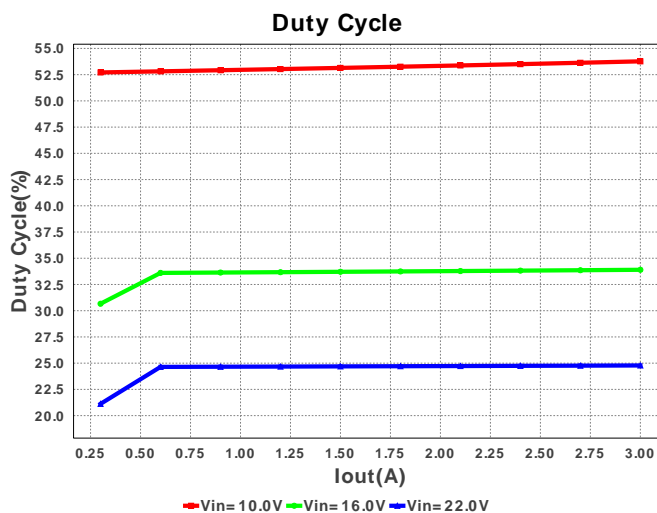
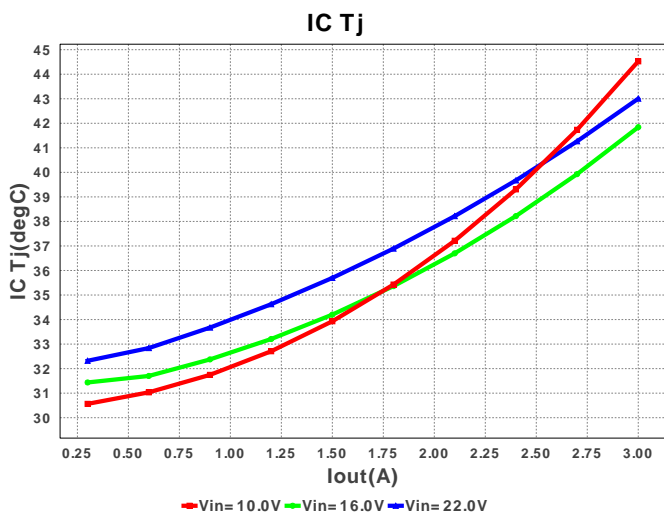
 Design : 3707098/6 TPS54540DDAR
 TPS54540DDAR 10.0V-22.0V to 5.0V @ 3.0A

Lista de materiais elétricos

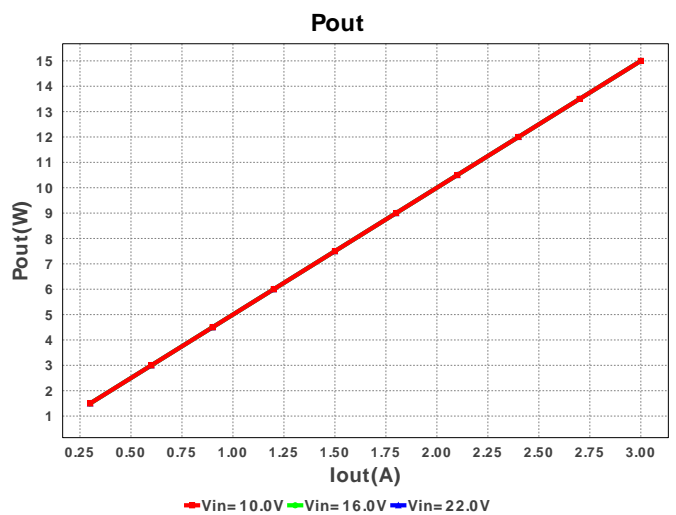
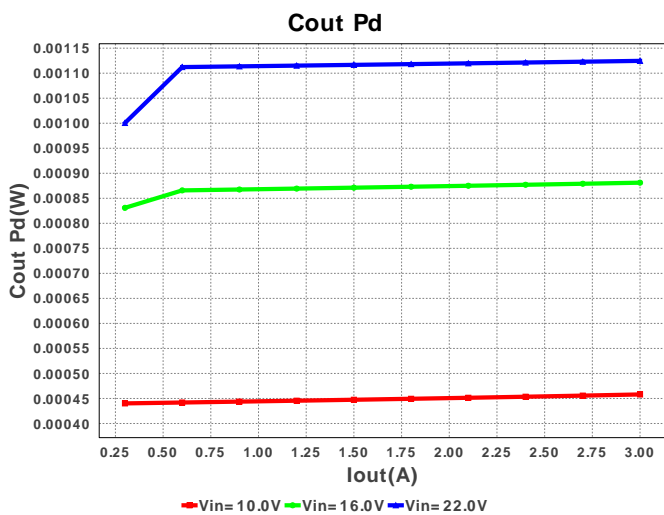
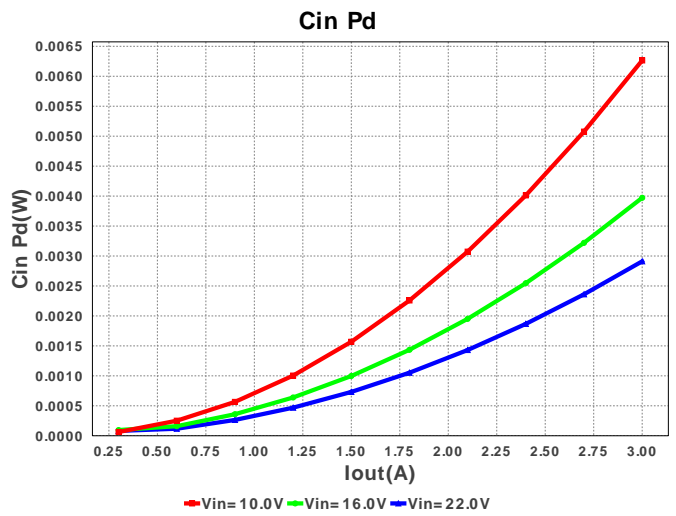
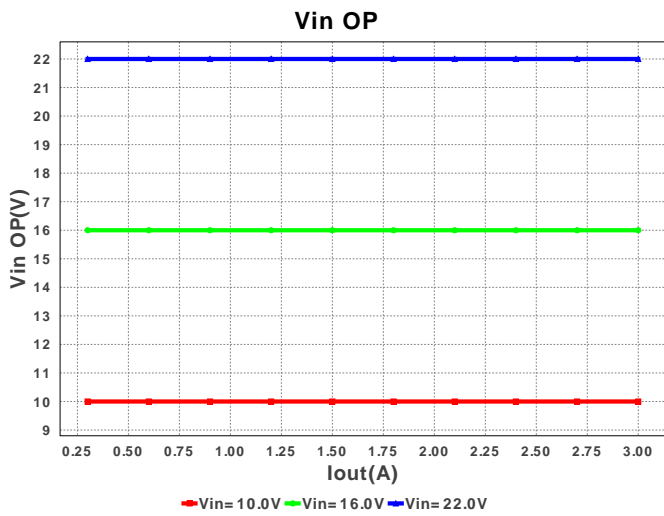
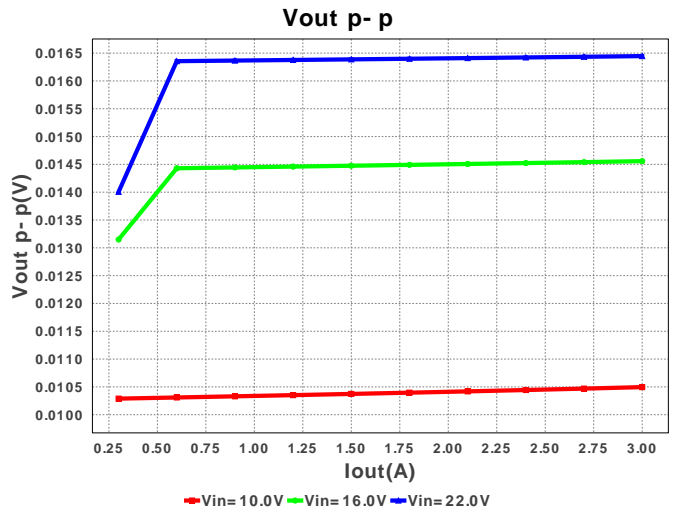
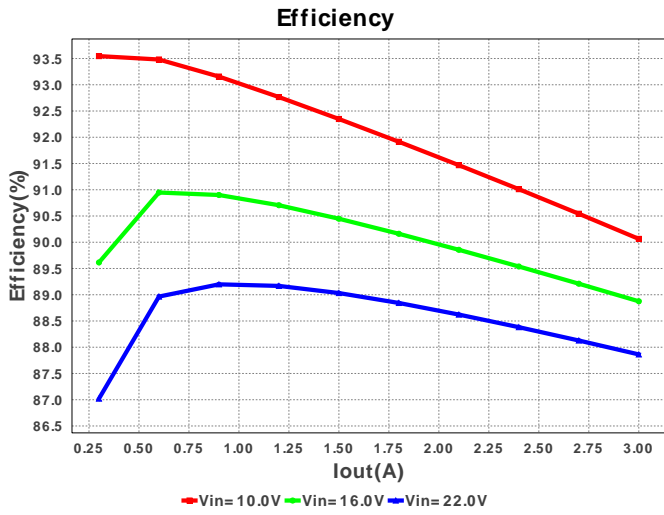
#	Nome	Fabricante	Número da peça	Propriedades	Qty	Price	Emissões
1.	Cboot	TDK	C1005X5R1A104K Series= 285	Cap= 100.0 nF ESR= 20.413 mOhm VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	■ 1005 3mm2
2.	Ccomp	MuRata	GRM155R71H122KA01D Series= X7R	Cap= 1.2 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	■ 0402 3mm2
3.	Ccomp2	MuRata	GRM1885C1H240JA01D Series= C0G/NP0	Cap= 24.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	■ 0603 5mm2
4.	Cin	TDK	C3225X7R2A225K230AB Series= X7R	Cap= 2.2 uF ESR= 2.8 mOhm VDC= 100.0 V IRMS= 9.825 A	1	\$0.19	▢ 1210 15mm2
5.	Cout	Panasonic	16SVP180M Series= 261	Cap= 180.0 uF ESR= 20.0 mOhm VDC= 16.0 V IRMS= 3.64 A	1	\$0.29	 SM_RADIAL_8MM 113mm2
6.	D1	Comchip Technology	CDBC540-G	VF@Io= 550.0 mV VRRM= 40.0 V	1	\$0.23	 SMC 83mm2
7.	L1	Bourns	SRN8040-6R8Y	L= 6.8 uH DCR= 33.0 mOhm	1	\$0.21	 SRN8040 100mm2
8.	Rcomp	Vishay-Dale	CRCW040254K9FKED Series= CRCW..e3	Res= 54.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	■ 0402 3mm2
9.	Rfbb	Vishay-Dale	CRCW040210K2FKED Series= CRCW..e3	Res= 10.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	■ 0402 3mm2
10.	Rfbt	Vishay-Dale	CRCW040253K6FKED Series= CRCW..e3	Res= 53.6 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	■ 0402 3mm2
11.	Rt	Vishay-Dale	CRCW0402130KFKED Series= CRCW..e3	Res= 130.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	■ 0402 3mm2

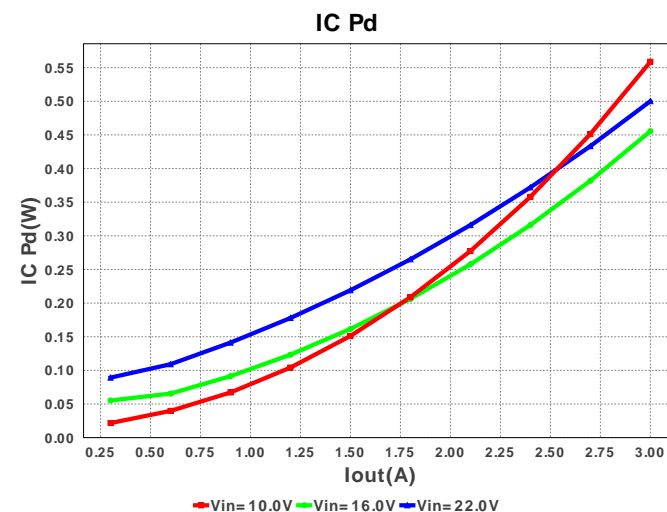
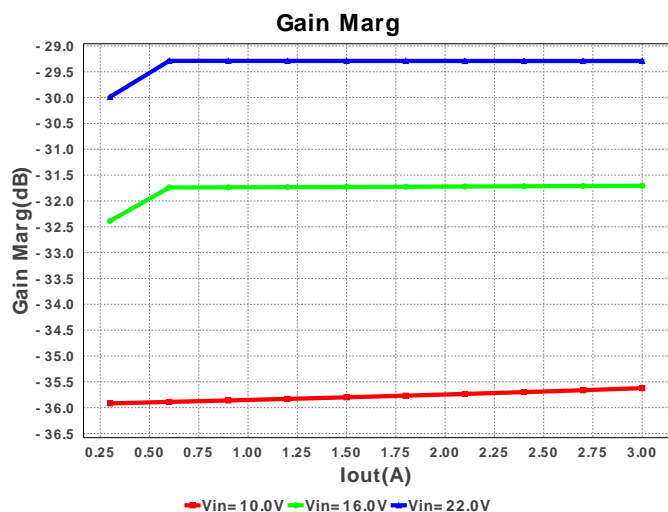
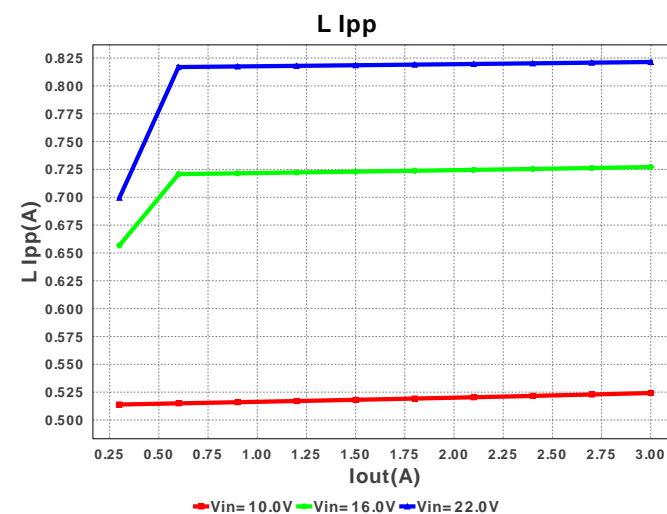
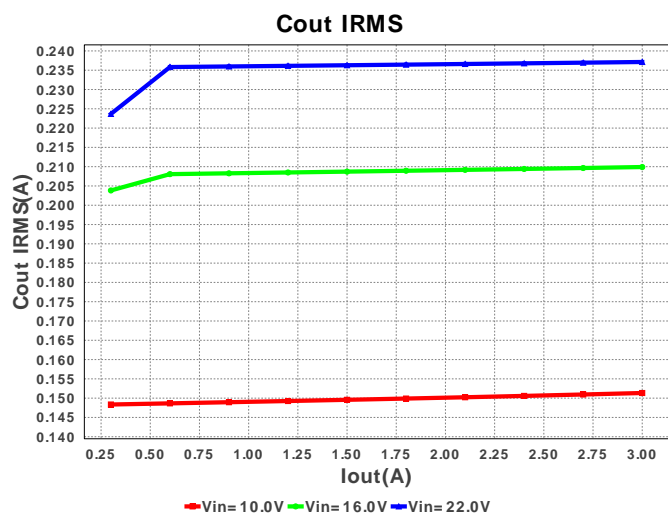
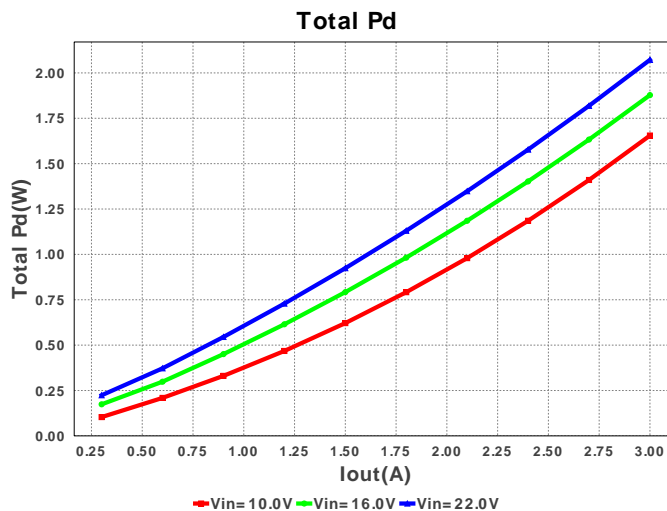
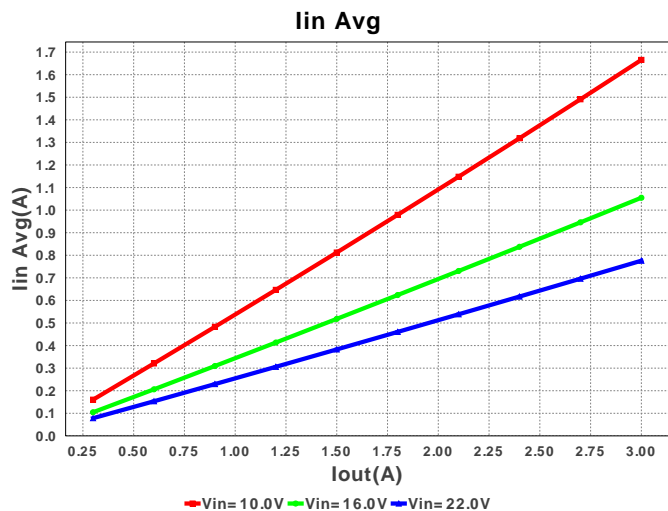
#	Nome	Fabricante	Número da peça	Propriedades	Qty	Price	Emissões
12.	U1	Texas Instruments	TPS54540DDAR	Switcher	1	\$1.95	

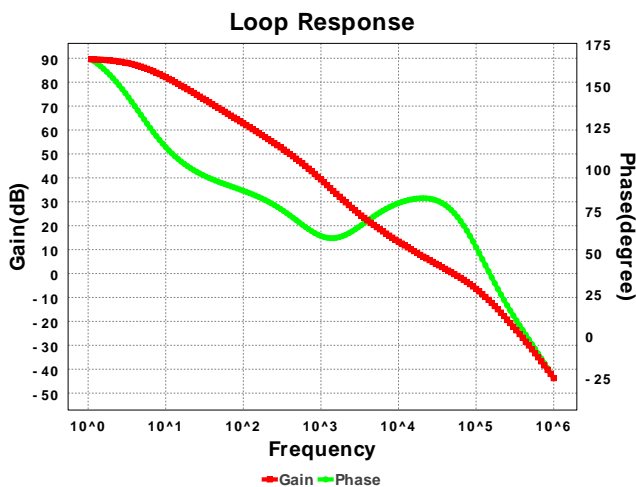
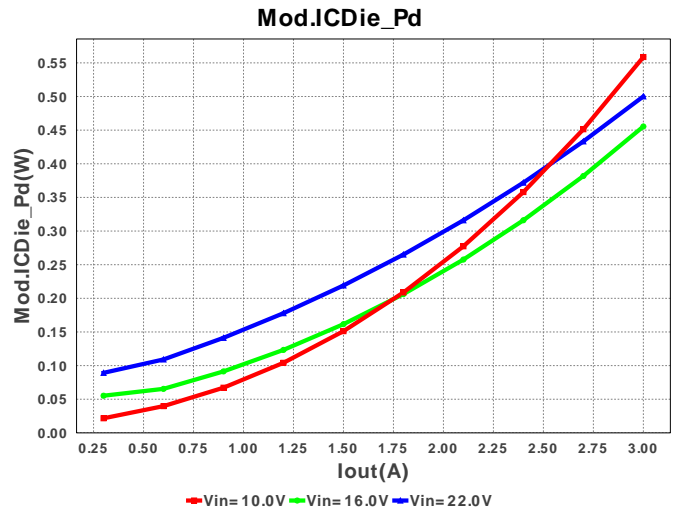
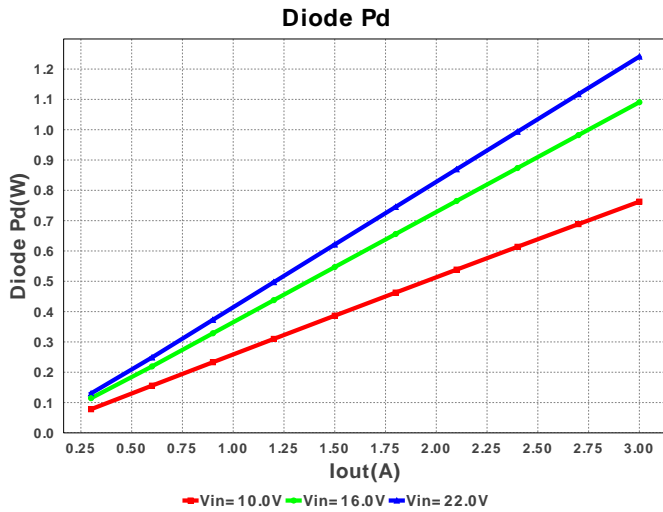


R-PDSO-G8 57mm2









Valores operacionais

#	Nome	Valor	Categoria	Descrição
1.	Cin IRMS	1.017 A	Current	Corrente de ondulação RMS do capacitor de entrada
2.	IRMS de Csaí	231.791 mA	Current	Corrente de ondulação RMS do capacitor de saída
3.	IC Ipk	3.401 A	Current	Corrente do comutador de pico em IC
4.	Iin méd	765.14 mA	Current	Corrente média de entrada
5.	L Ipp	802.947 mA	Current	Corrente de ondulação do indutor pico a pico
6.	Contagem da BOM	12	General	Total Design BOM count
7.	Emissões	391.0 mm2	General	Área de emissão total de componentes da BOM
8.	Frequência	760.227 kHz	General	Frequência de comutação
9.	Psaí	15.0 W	General	Potência total de saída
10.	BOM total	\$2.94	General	Total BOM Cost
11.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
12.	Freq cruzada	50.95 kHz	Op_point	Frequência cruzada do gráfico Bode
13.	Ciclo de serviço	24.417 %	Op_point	Ciclo de serviço
14.	Eficiência	89.11 %	Op_point	Eficiência do estado de equilíbrio
15.	Marg de ganho	-29.487 dB	Op_point	Margem de ganho do gráfico Bode
16.	Tj do IC	42.972 degC	Op_point	Temperatura de junção de IC
17.	ICThetaJA	26.0 degC/W	Op_point	Resistência térmica junção a ambiente de IC
18.	IOUT_OP	3.0 A	Op_point	ponto operacional Isai
19.	Marg da fase	74.668 deg	Op_point	Margem de fase do gráfico Bode
20.	VIN_OP	22.0 V	Op_point	Ponto operacional da tensão de entrada
21.	Vsaí p-p	16.076 mV	Op_point	Tensão de ondulação de saída pico a pico
22.	Cin Pd	2.899 mW	Power	Dissipação de energia do capacitor de entrada
23.	Pd de Csaí	1.075 mW	Power	Dissipação de energia do capacitor de saída
24.	Pd do diodo	1.004 W	Power	Dissipação de energia do diodo
25.	Pd do IC	498.91 mW	Power	Dissipação de energia IC
26.	L Pd	326.7 mW	Power	Dissipação de energia do indutor
27.	Pd total	1.833 W	Power	Dissipação total de energia
28.	Low Freq Gain	89.544 dB	Unknown	Gain at 10Hz

Entradas de design

#	Nome	Valor	Descrição
1.	Isai	3.0 A	Corrente de saída máxima
2.	Iout1	3.0 Amps	Output Current #1
3.	VinMax	22.0 V	Tensão de entrada máxima
4.	VinMin	10.0 V	Tensão de entrada mínima
5.	Tsai	5.0 V	Tensão de saída
6.	Vout1	5.0 Volt	Output Voltage #1
7.	base_pn	TPS54540	Número do produto baseado na National
8.	fonte	DC	Tipo de fonte de entrada
9.	Ta	30.0 degC	Temperatura ambiente

Assistência de design

1. [TPS54540 Product Folder](http://www.ti.com/product/TPS54540) : <http://www.ti.com/product/TPS54540> : contains the data sheet and other resources.

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