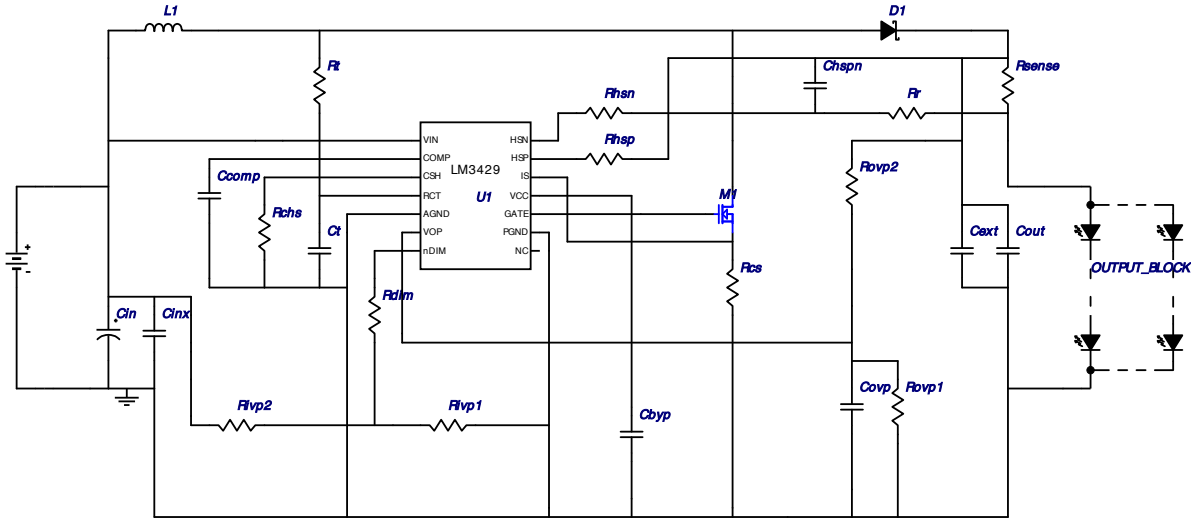
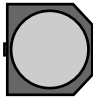
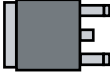


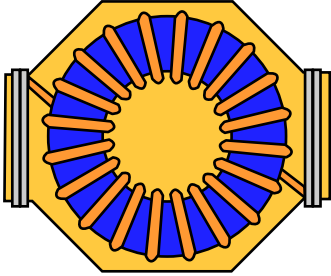
WEBENCH® Design Report

Design : 423954/33 LM3429MH
LM3429MH 6.0V-11.0V to 36.0V @ 0.35034842293906804A



Electrical BOM

#	Name	Manufacturer	Part Number	Quantity	Price	Properties	Footprint
1.	Cbyp	Taiyo Yuden	EMK212B7225KG-T Series= X7R	1	\$0.03	Cap= 2.2 μ F VDC= 16.0 V IRMS= 0.0 A	 0805 13mm2
2.	Ccomp	MuRata	GRM21BR61E335KA12L Series= X5R	1	\$0.07	Cap= 3.3 μ F VDC= 25.0 V IRMS= 0.0 A	 0805 13mm2
3.	Cext	Kemet	C0805C104K5RACTU Series= X7R	1	\$0.01	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	 0805 13mm2
4.	Chspn	MuRata	GRM21BR71E104KA01L Series= X7R	1	\$0.01	Cap= 100.0 nF VDC= 25.0 V IRMS= 0.0 A	 0805 13mm2
5.	Cin	Nippon Chemi-Con	APXH160ARA820MH70G Series= PXH	1	\$0.62	Cap= 82.0 μ F ESR= 30.0 mOhm VDC= 16.0 V IRMS= 2.7 A	 CAPSMT_62_H70 110mm2
6.	Cinx	Kemet	C0603C104K3RACTU Series= X7R	1	\$0.01	Cap= 100.0 nF VDC= 25.0 V IRMS= 0.0 A	 0603 10mm2
7.	Cout	TDK	C4532X7R1H475M Series= X7R	3	\$0.35	Cap= 4.7 μ F ESR= 3.0 mOhm VDC= 50.0 V IRMS= 2.9 A	 1812 39mm2
8.	Covp	Yageo America	CC0805JRNPO9BN470 Series= C0G/NP0	1	\$0.01	Cap= 47.0 pF VDC= 50.0 V IRMS= 0.0 A	 0805 13mm2
9.	Ct	Yageo America	CC0805KRX7R9BB102 Series= X7R	1	\$0.01	Cap= 1.0 nF VDC= 50.0 V IRMS= 0.0 A	 0805 13mm2
10.	D1	Vishay-Semiconductor	30WQ06FNPBF	1	\$0.33	VF@Io= 610.0 mV VRRM= 60.0 V	 DPAK 102mm2

#	Name	Manufacturer	Part Number	Quantity	Price	Properties	Footprint
11.	D_LED	CUSTOM	CUSTOM	60	\$0.00	LED	CUSTOM 0mm2
12.	L1	Bourns	PM2110-680K-RC	1	\$1.23	L= 68.0 μ H DCR= 27.0 mOhm	 PM2110 890mm2
13.	M1	Vishay-Siliconix	SI7850DP-E3	1	\$0.77	VdsMax= 60.0 V IdsMax= 6.2 Amps	 PowerPAK_SO-8 55mm2
14.	Rchs	Vishay-Dale	CRCW080512K4FKEA Series= CRCW..e3	1	\$0.01	Res= 12.4 kOhm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
15.	Rcs	Stackpole Electronics Inc	CSRN2512FK68L0 Series= ?	1	\$0.14	Res= 68.0 mOhm Power= 2.0 W Tolerance= 1.0%	 2512 43mm2
16.	Rdim	Vishay-Dale	CRCW080521K0FKEA Series= CRCW..e3	1	\$0.01	Res= 21.0 kOhm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
17.	Rhsn	Vishay-Dale	CRCW08051K00FKEA Series= CRCW..e3	1	\$0.01	Res= 1,000 Ohm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
18.	Rhsp	Vishay-Dale	CRCW08051K00FKEA Series= CRCW..e3	1	\$0.01	Res= 1,000 Ohm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
19.	Rivp1	Vishay-Dale	CRCW08053K01FKEA Series= CRCW..e3	1	\$0.01	Res= 3.01 kOhm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
20.	Rivp2	Vishay-Dale	CRCW080510K0FKEA Series= CRCW..e3	1	\$0.01	Res= 10.0 kOhm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
21.	Rovp1	Vishay-Dale	CRCW080513K0FKEA Series= CRCW..e3	1	\$0.01	Res= 13.0 kOhm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
22.	Rovp2	Vishay-Dale	CRCW0805511KFKEA Series= CRCW..e3	1	\$0.01	Res= 511.0 kOhm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
23.	Rr	Vishay-Dale	CRCW080510R0FKEA Series= CRCW..e3	1	\$0.01	Res= 10.0 Ohm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
24.	Rsense	Panasonic	ERJ-3RQFR27V Series= 227	1	\$0.02	Res= 270.0 mOhm Power= 100.0 mW Tolerance= 1.0%	 0603 10mm2
25.	Rt	Vishay-Dale	CRCW0805243KFKEA Series= CRCW..e3	1	\$0.01	Res= 243.0 kOhm Power= 125.0 mW Tolerance= 1.0%	 0805 13mm2
26.	U1	Texas Instruments	LM3429MH	1	\$1.22	Switcher	 MXA14A 59mm2

Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	214.195 m A	Current	Input capacitor RMS ripple current
2.	Cout IRMS	781.03 m A	Current	Output capacitor RMS ripple current
3.	Iin Avg	2.283 A	Current	Average input current
4.	L Ipp	741.993 m A	Current	Peak-to-peak inductor ripple current

#	Name	Value	Category	Description
5.	L1 Irms	2.165 A	Current	Inductor ripple current
6.	LED Iavg	70.0 m A	Current	LED Average Current
7.	LED Ipp	8.406 m A	Current	LED Ripple Current
8.	M Irms	2.448 A	Current	MOSFET RMS ripple current
9.	SW Ipk	2.525 A	Current	Peak switch current
10.	BOM Count	87.0	General	Total Design BOM count
11.	FootPrint	1.604 k mm2	General	Total Foot Print Area of BOM components
12.	Frequency	98.765 k Hz	General	Switching frequency
13.	IC Tolerance	25.0 m V	General	IC Feedback Tolerance
14.	M Rdson	25.0 m Ohm	General	Drain-Source On-resistance
15.	M Vds Act	61.195 m V	General	M Vds
16.	Mode	CCM	General	Conduction Mode
17.	Pout	12.6 W	General	Total output power
18.	Total BOM	\$0.0	General	Total BOM Cost
19.	D1 Tj	47.596 degC	Op_Point	D1 junction temperature
20.	Vout OP	36.0 V	Op_Point	Operational Output Voltage
21.	Duty Cycle	84.647 %	Op_point	Duty cycle
22.	Efficiency	91.988 %	Op_point	Steady state efficiency
23.	IC Tj	36.248 degC	Op_point	IC junction temperature
24.	ICThetaJA	37.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
25.	IOUT_OP	350.0 m A	Op_point	Iout operating point
26.	LED Rd	800.0 m Ohm	Op_point	LED DynamicResistance
27.	LED Vf	36.0 V	Op_point	Total LED Forward Calculated Voltage
28.	M ThetaJA	58.0 degC/W	Op_point	MOSFET junction-to-ambient thermal resistance
29.	M TjOp	54.169 degC	Op_point	MOSFET junction temperature
30.	VIN_OP	6.0 V	Op_point	Vin operating point
31.	Cin Pd	1.376 m W	Power	Input capacitor power dissipation
32.	Cout Pd	610.008 μ W	Power	Output capacitor power dissipation
33.	Diode Pd	213.5 m W	Power	Diode power dissipation
34.	IC Pd	33.733 m W	Power	IC power dissipation
35.	L Pd	151.811 m W	Power	Inductor power dissipation
36.	LED Pd	12.6 W	Power	LED Power Dissipation
37.	M Pd	330.495 m W	Power	MOSFET power dissipation
38.	M1 PdCond	181.254 m W	Power	M1 MOSFET conduction losses
39.	M1 PdSw	149.241 m W	Power	M1 MOSFET switching losses
40.	Total Pd	1.097 W	Power	Total Power Dissipation
41.	Total LED load Rd	1.92 Ohm	Unknown	Total LED Load DynamicResistance

Design Inputs

#	Name	Value	Description
1.	Iout	350.0 mA	Maximum Output Current
2.	Iout1	350.0 mAmps	Output Current #1
3.	VinMax	11.0 V	Maximum input voltage
4.	VinMin	6.0 V	Minimum input voltage
5.	Vout	36.0 V	Output Voltage
6.	Vout1	36.0 Volt	Output Voltage #1
7.	application	LED_DRIVER	LED Application
8.	base_pn	LM3429	National Based Product Number
9.	LED_Architect	N	LED Architect Project
10.	ledparallel	5.0	Number of LED in parallel
11.	ledpartnumber	Custom	LED Part number
12.	ledseries	12.0	Number of LED in series
13.	line_fsw	60.0	AC Line Frequency
14.	source	DC	Input Source Type
15.	Ta	35.0 degC	Ambient temperature
16.	UserFsw	542.986 kHz	Customer Selected Frequency

Design Assistance

1. **LM3429** Product Folder : <http://www.ti.com/product/LM3429> : contains the data sheet and other resources.

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