

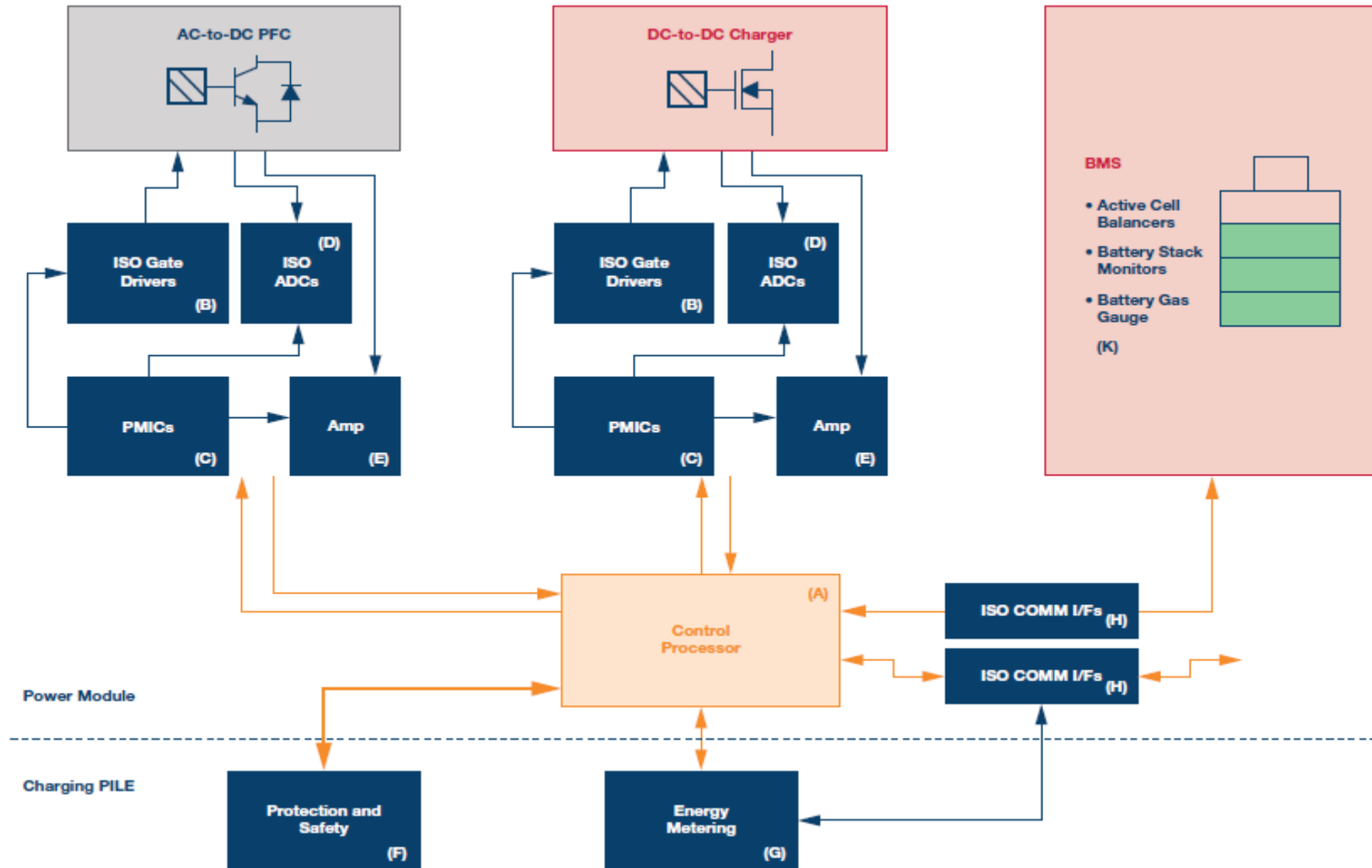
ADI 隔离栅极驱动与隔离电源

macnica

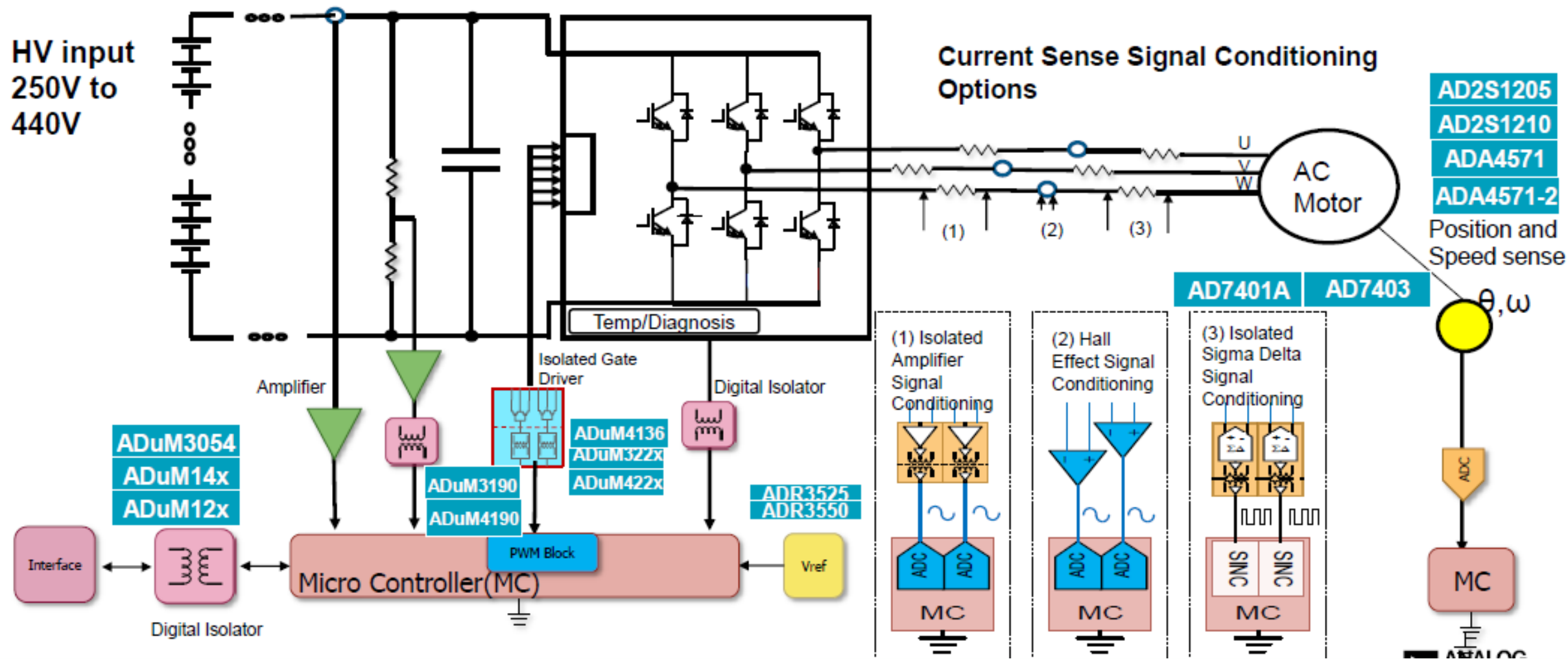
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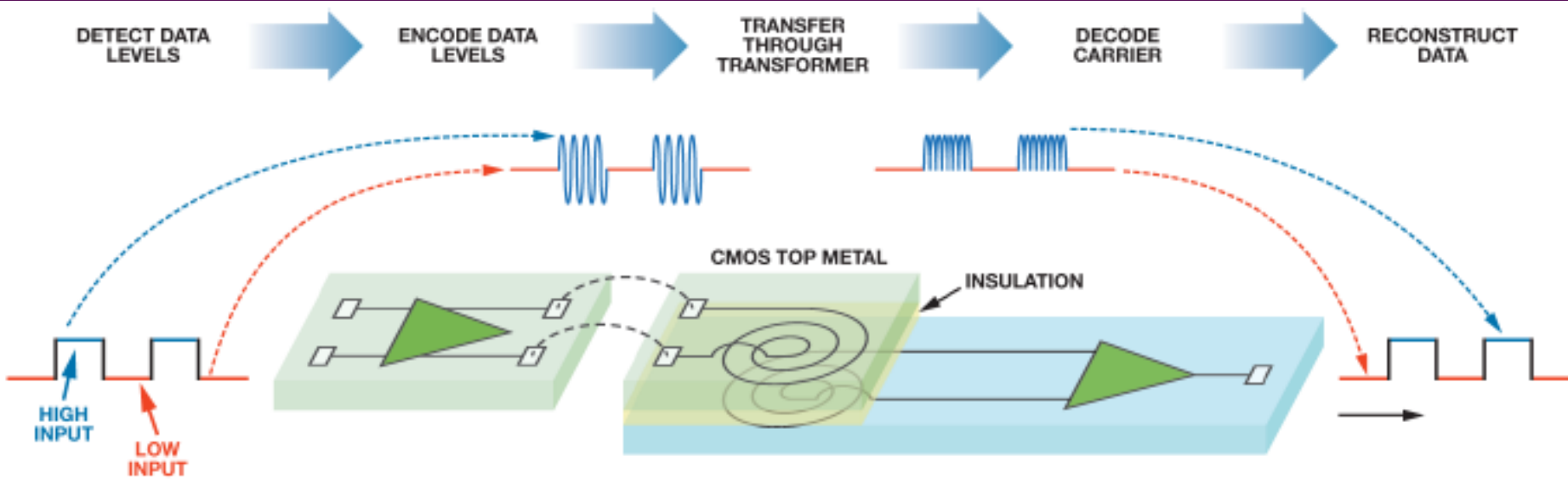
Charge block diagram



Motor block diagram

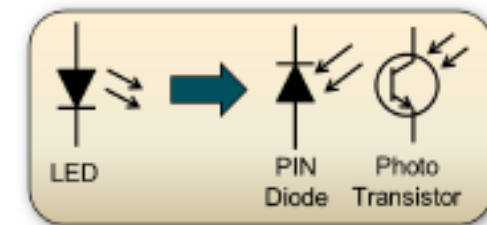


Differential On-Off Keying Architecture

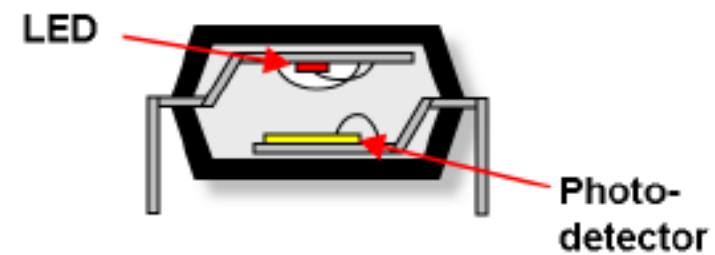


- ▶ Properties of differential on-off keying
 - Lowest prop delay and higher data rates
 - Best noise immunity and robustness
 - Lowest power consumption at high frequency
 - Higher power consumption at low frequencies
- ▶ In production
 - ADuM110/12x/13x/14x/15x/16x, ADuM210/22x/23x/24x/25x/26x
 - ADuM4135/4136

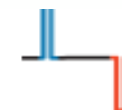
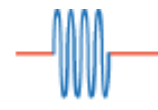
Optocouplers: the Original OOK Isolator



- ▶ Optocouplers use On-Off Keying because they can't switch fast enough to support pulse encoding schemes

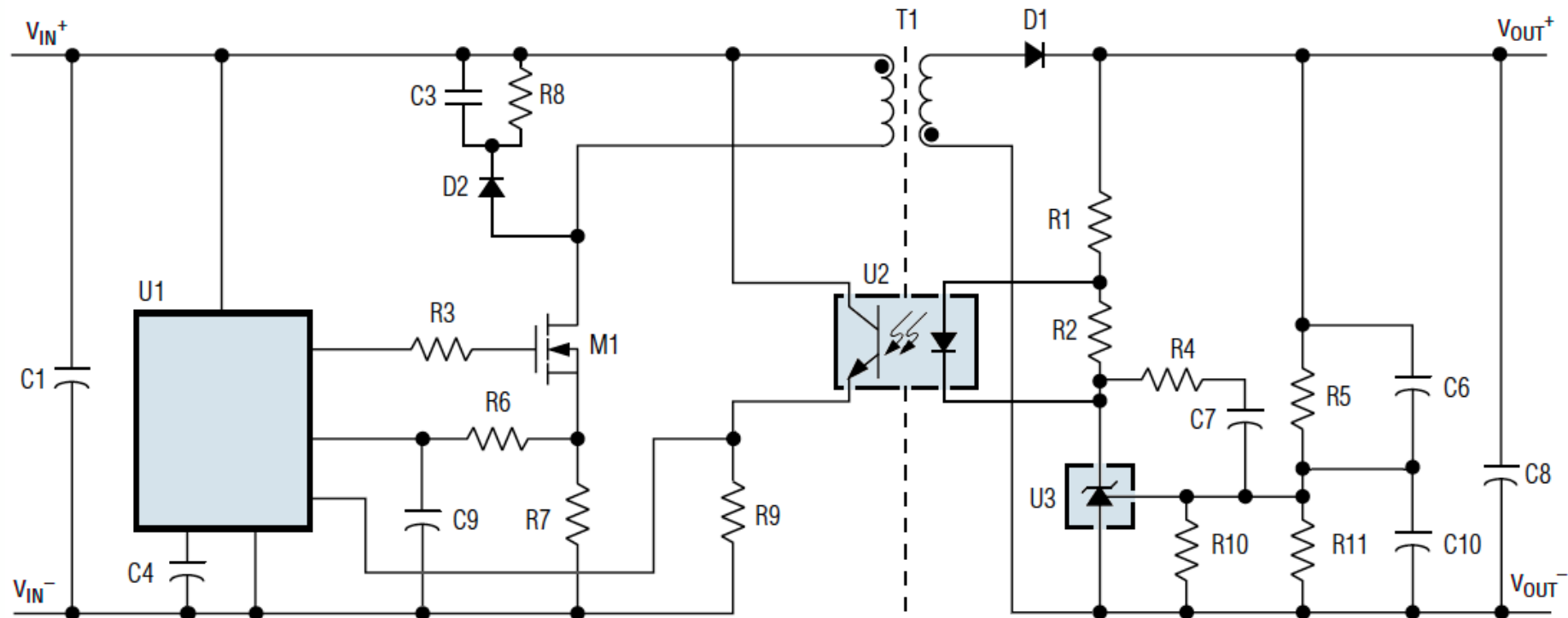


Comparison of iCoupler Data Architectures



Parameter	Unit	Single Ended Pulse Encoding	Differential Pulse Encoding	Differential On-Off Keying	Differential LVDS
Prop. Delay	ns	32	24	10	2.5
Total Delay	ns	35	26	12	2.7
Skew	ns	3	3	3	< 1
Max Speed	Mbps	150	150	150	600+
Quiescent Power	mW/ch	1	15	17	62.5
Dynamic Power	mW/Mbps/ ch	1.6	1	0.3	0.05
CMTI	kV/ μ s	100	50	100	100
EMI Margin	dB μ V	+1	-2	-6 *	-6 **

Typical Isolated Flyback Schematic



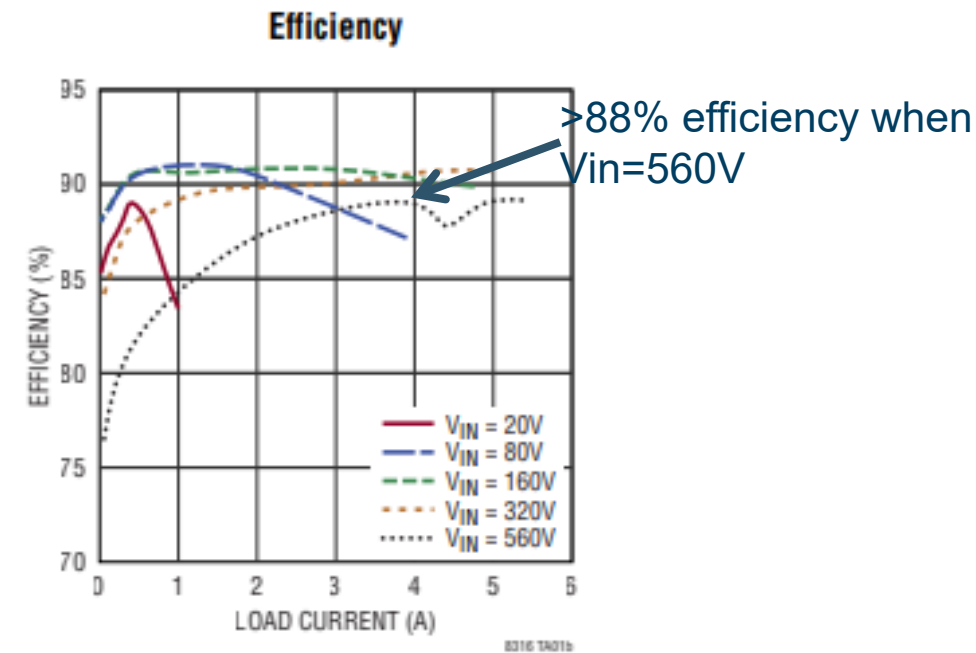
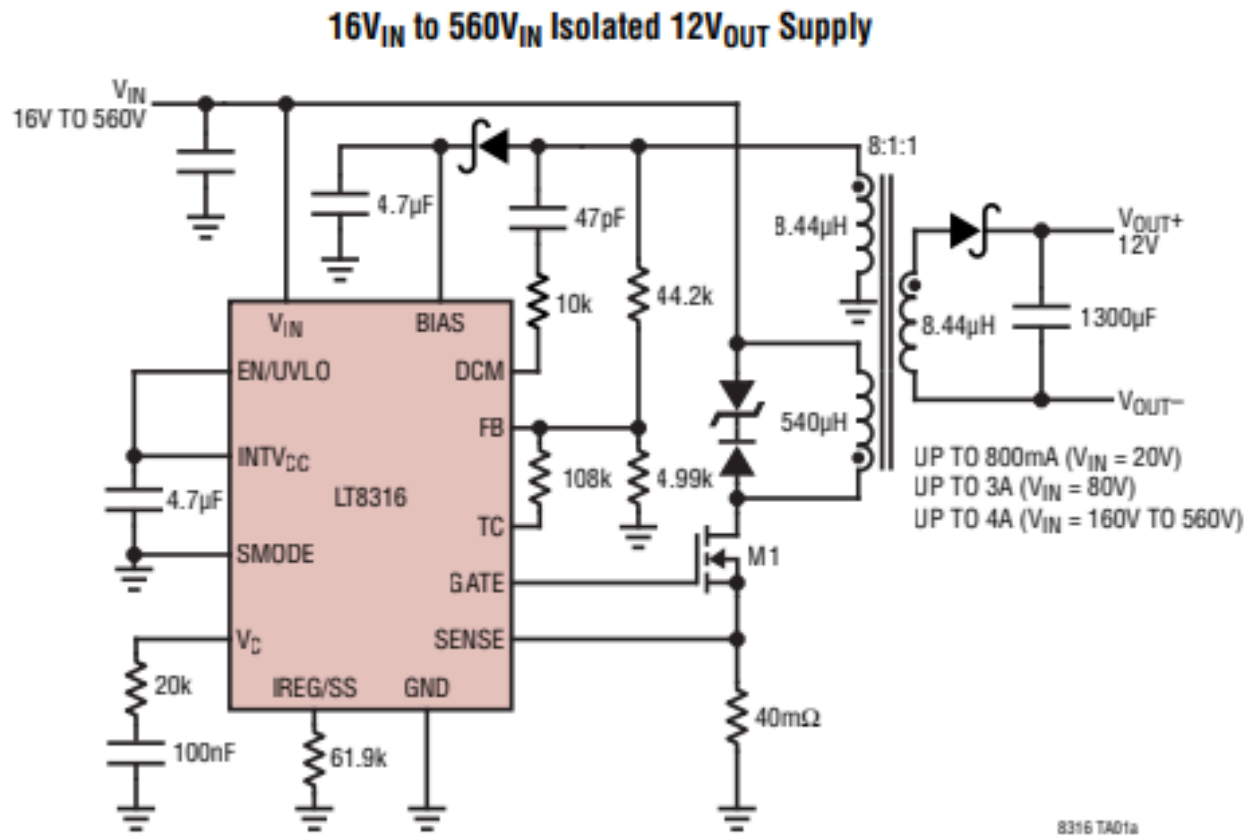
Primary Side IC

Opto

Secondary Side Reference and Loop Compensation

Isolated Flyback – Simple, but with Great Performance

LT8316-560VIN Micropower No-Opto Isolated Flyback Controller



LT8316-560VIN Micropower No-Opto Isolated Flyback Controller



LT8316

560V_{IN} Micropower No-Opto Isolated Flyback Controller

FEATURES

- Wide Input Voltage Range: 16V to 560V (600V max)
- No Opto-Isolator Required for Regulation
- Quasi-Resonant Boundary Mode Operation
- Constant-Current and Constant-Voltage Regulation
- Low-Ripple Light Load Burst Mode[®] Operation
- Low Quiescent Current: 75μA
- Programmable Current Limit and Soft-Start
- TSSOP Package with High-Voltage Spacing
- AEC-Q100 Qualification in Progress

APPLICATIONS

- Isolated Telecom, Automotive, Industrial, Medical Power Supplies
- Isolated Off-Line Housekeeping Power Supplies
- Electric Vehicles and Battery Stacks
- Multioutput Isolated Power Supplies for Inverter Gate Drives

DESCRIPTION

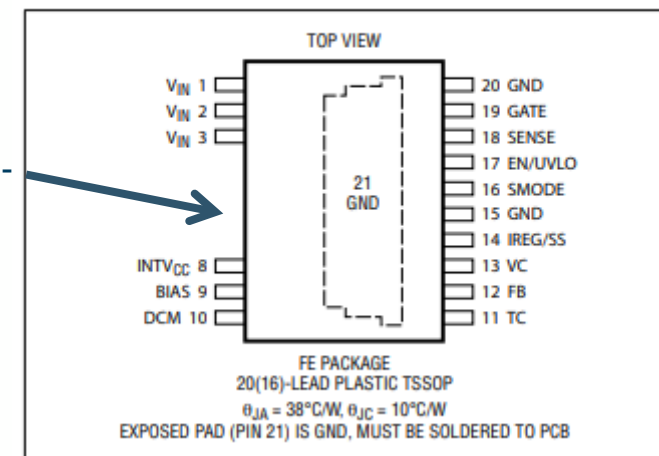
The LT[®]8316 is a micropower, high voltage flyback controller. No opto-isolator is needed for regulation. The device samples the output voltage from the isolated flyback waveform appearing across a third winding on the transformer. Quasi-resonant boundary mode operation improves load regulation, reduces transformer size, and maintains high efficiency.

At start-up, the LT8316 charges its INTV_{CC} capacitor via a high voltage current source. During normal operation, the current source turns off and the device draws its power from a third winding on the transformer minimizing standby power dissipation.

The LT8316 operates from a wide range of input supply voltages and can deliver up to 100W of power. It is available in a thermally enhanced 20-pin TSSOP package with four pins removed for high-voltage spacing.

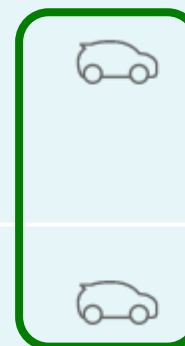
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PIN CONFIGURATION



4/5/6/7 Pins remove for High-Voltage Vin

LT8316EFE#WPBF
PCN/PDN邮件通知需求
量产



20-Lead TSSOP
w/ EP

20

-40 至 125至

LT8316EFE#WTRPBF
PCN/PDN邮件通知需求
量产

20-Lead TSSOP
w/ EP

20

-40 至 125至

LT8316-Contain Diode Temperature Compensation for Low Output Voltage

APPLICATIONS INFORMATION

At higher output voltages, the resulting variation may be unimportant as it represents a small fraction of the total output. However, for lower output voltages, the diode temperature coefficient accounts for a large output voltage error.

To correct this error, the TC pin provides a buffered proportional-to-absolute-temperature (PTAT) voltage. At room temperature, this voltage is equal to the internal 1.22V reference, and it has a +4.1mV/°C temperature coefficient.

The output diode's temperature coefficient TC_F can easily be found experimentally by applying a uniform temperature to both the output diode and the LT8316. First, R_{FB1} and R_{FB2} are adjusted to give the desired output voltage at room temperature. The temperature is then raised or lowered by a known amount to a new temperature, and the diode temperature coefficient is found as:

$$TC_F = \frac{V_{OUT(25^\circ C)} - V_{OUT(T_{NEW})}}{T_{NEW} - 25^\circ C}$$

where

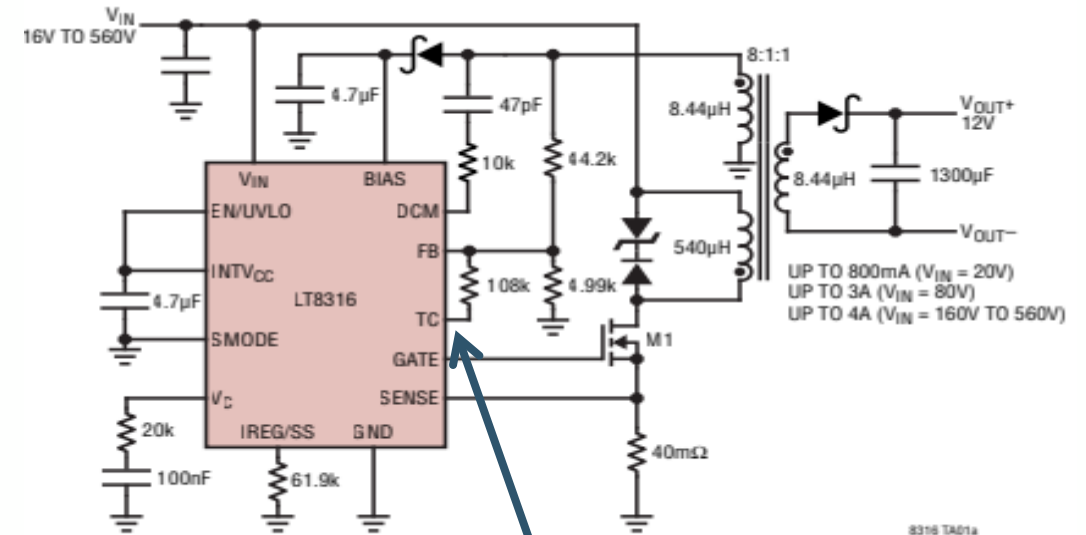
$V_{OUT(25^\circ C)} = V_{OUT}$ measured at room temperature

$V_{OUT(T_{NEW})} = V_{OUT}$ measured at new temperature

With the output diode's temperature coefficient known, a resistor R_{TC} is then attached from the TC pin to the FB pin. Its value can be calculated as:

$$R_{TC} = \frac{-R_{FB2} \cdot 4.1mV / ^\circ C}{TC_F \cdot N_{TS}}$$

Example: If the output diode's temperature coefficient TC_F is found experimentally to be $-1.9mV/^\circ C$, then with $R_{FB2} = 88.7k\Omega$, a R_{TC} value of $191k\Omega$ will yield a temperature-invariant output voltage.



TC pin for Diode Temperature Compensation

LT8316-Also can use LT8309(Synchronous Rectification) for Higher Efficiency in Low output voltage condition

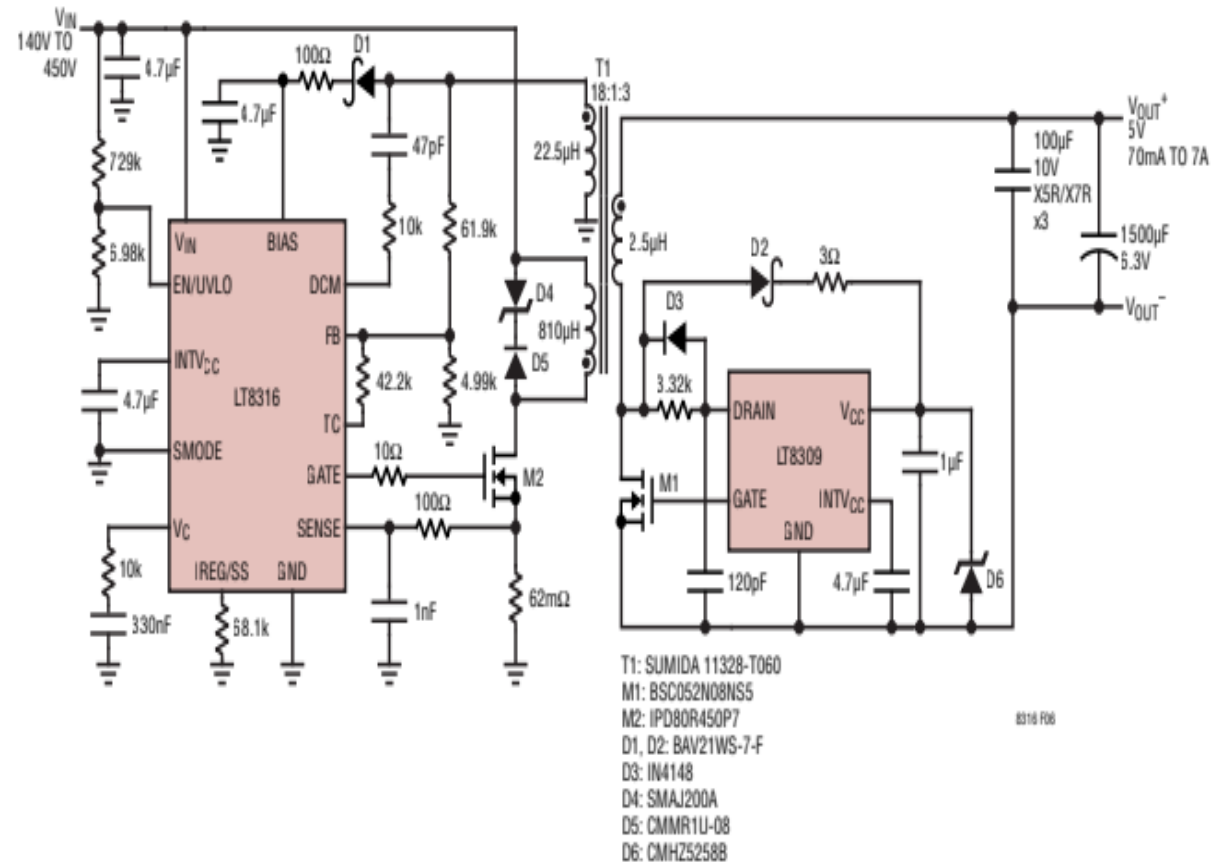


Figure 6. 91% Efficient Isolated 5V/7A Synchronous Flyback Converter



ADI Power by Linear™

LT8309

Secondary-Side Synchronous Rectifier Driver

FEATURES

- Works with DCM and BCM/CrCM Conduction Mode Flyback Topologies
- V_{CC} : 4.5V to 40V
- Supports Up to 150V MOSFETs
- 26ns Turn-Off Propagation Delay
- Accurate Minimum On and Off Timers for Reliable Operation
- Adjustable and Accurate Trip Point: +5mV to -30mV
- 1Ω Gate Driver Pull-Down
- SOT-23 5-Lead Package

APPLICATIONS

- High Output Current Flybacks
- High Efficiency Flybacks

DESCRIPTION

The **LT[®]8309** is a secondary-side synchronous rectifier driver that replaces the output rectifier diode in a flyback topology. By replacing the diode with a N-channel MOSFET, applications are no longer restricted by the heat constraints of the output diode. The IC replicates the behavior of a diode by sensing the drain-to-source voltage to determine when the current becomes negative. The LT8309's low minimum on- and off-times help improve noise immunity.

The fast propagation delay of 26ns allows applications to operate in discontinuous conduction mode (DCM) and critical conduction mode (CrCM). The gate driver features a 0.8Ω pull-down device for fast turn-offs. The 40V V_{CC} rating allows the part to be driven from the output voltage or the rectified drain voltage of the MOSFET. A low quiescent current of 400µA maximizes efficiency at low output currents.

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LT8316-Reference DC2718A

URL: <https://www.analog.com/cn/design-center/evaluation-hardware-and-software/evaluation-boards-kits/DC2718A.htm>



PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input Voltage		100		600	V
Output Voltage	$I_{OUT} = 30\text{mA to } 3\text{A}$	11.4	12	12.6	V
Maximum Output Current		3			A
Output Voltage Ripple	$V_{IN} = 100\text{V}, I_{OUT} = 3\text{A}$		250		mV _{P-P}
Typical Switching Frequency	$V_{IN} = 100\text{V}, I_{OUT} = 3\text{A}$		43		kHz
	$V_{IN} = 600\text{V}, I_{OUT} = 3\text{A}$		85		kHz
Efficiency	$V_{IN} = 100\text{V}, I_{OUT} = 3\text{A}$		89		%
	$V_{IN} = 600\text{V}, I_{OUT} = 3\text{A}$		88		%

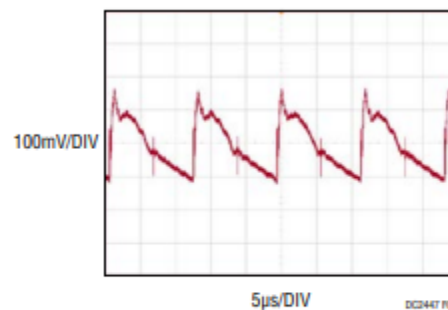
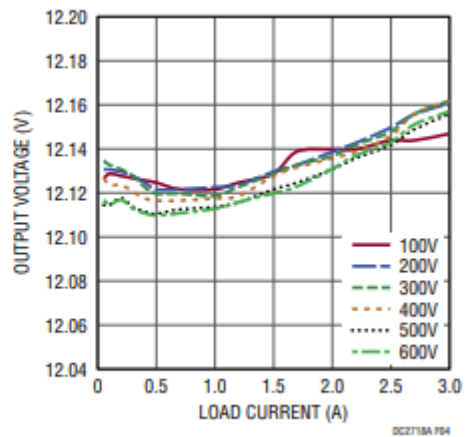
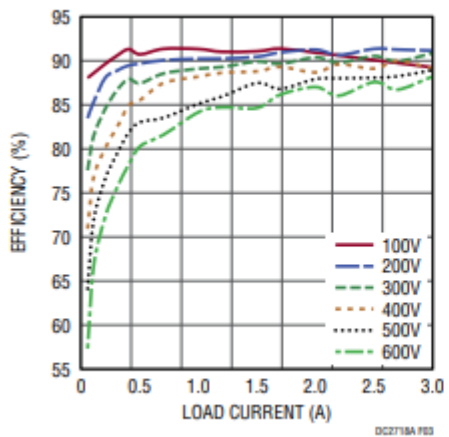


Figure 7. Output Ripple Voltage at 100V Full Load Condition

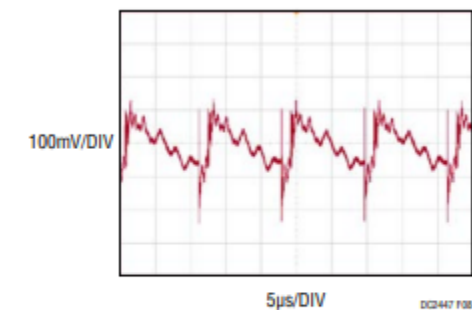
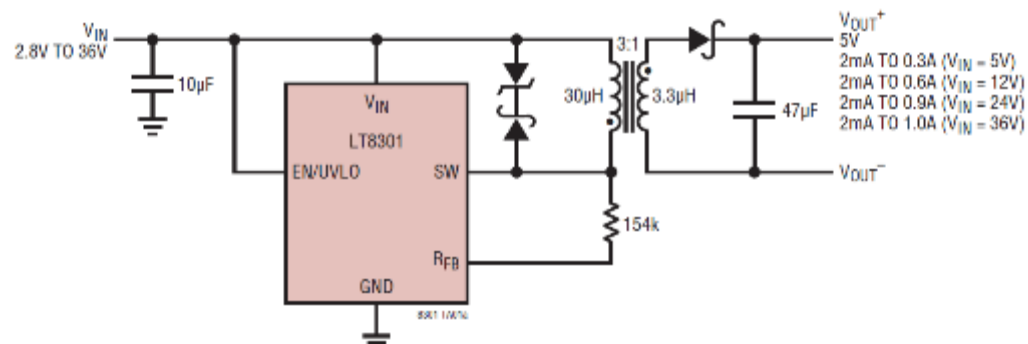


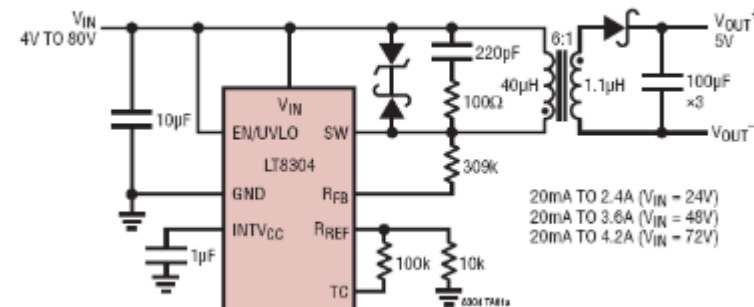
Figure 8. Output Ripple Voltage at 600V Full Load Condition

LT83XX Monolithic No-Opto Isolated Flyback Series

2.8V to 36V_{IN}/5V_{OUT} Micropower Isolated Flyback Converter



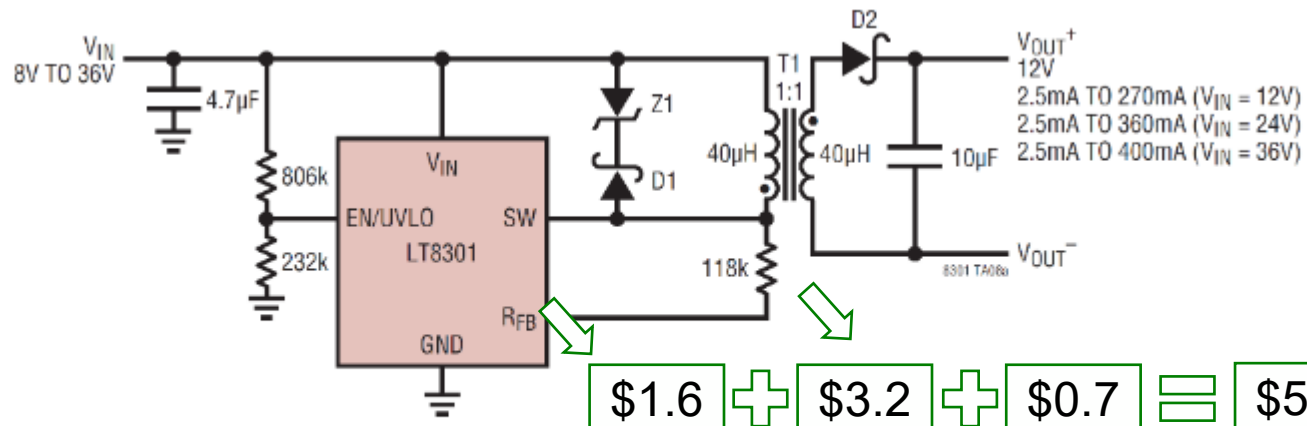
4V to 80V_{IN}/5V_{OUT} Isolated Flyback Converter



Great Product but hard to design especially for Transformer design in Local customer

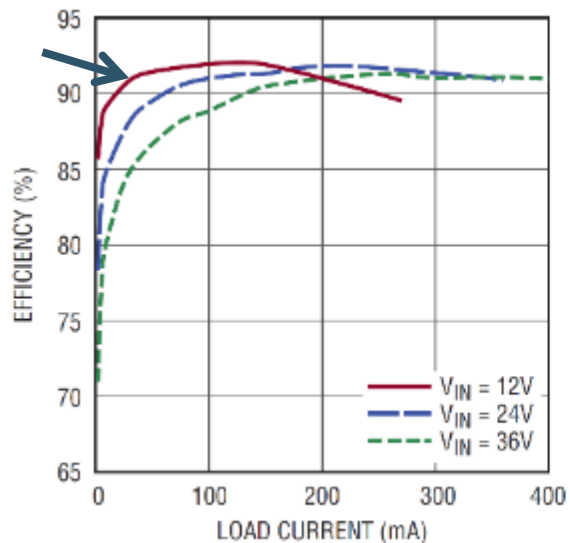
Part	V _{IN}	I _Q	Power Switch	P _{OUT}	Package
LT8300	6V-100V	70uA/330uA	0.26A/150V DMOS	up to 2.5W	SOT23-5
LT8303	5.5V-100V	70uA/280uA	450mA/150V DMOS	Up to 5W	SOT-23-5
LT8301	2.8V-42V	100uA/350uA	1.2A/65V DMOS	up to 6W	SOT23-5
LT8302	2.8V-42V	106uA/380uA	3.6A/65V DMOS	up to 18W	SO8E
LT8304	3V-100V	116uA/390uA	2A/100V DMOS	Up to 24W	SO8E
LT8315	18-560V	70uA/470uA	300mA/630V	Up to 15W	TSSOP

Monolithic Isolated Flyback Using LT830X



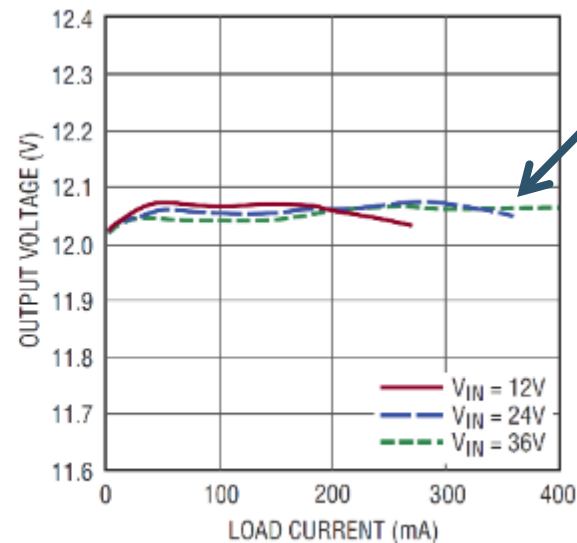
Efficiency vs Load Current

>90% efficiency



Output Load and Line Regulation

+/- 0.5% regulation



Local Transformer reduce the cost

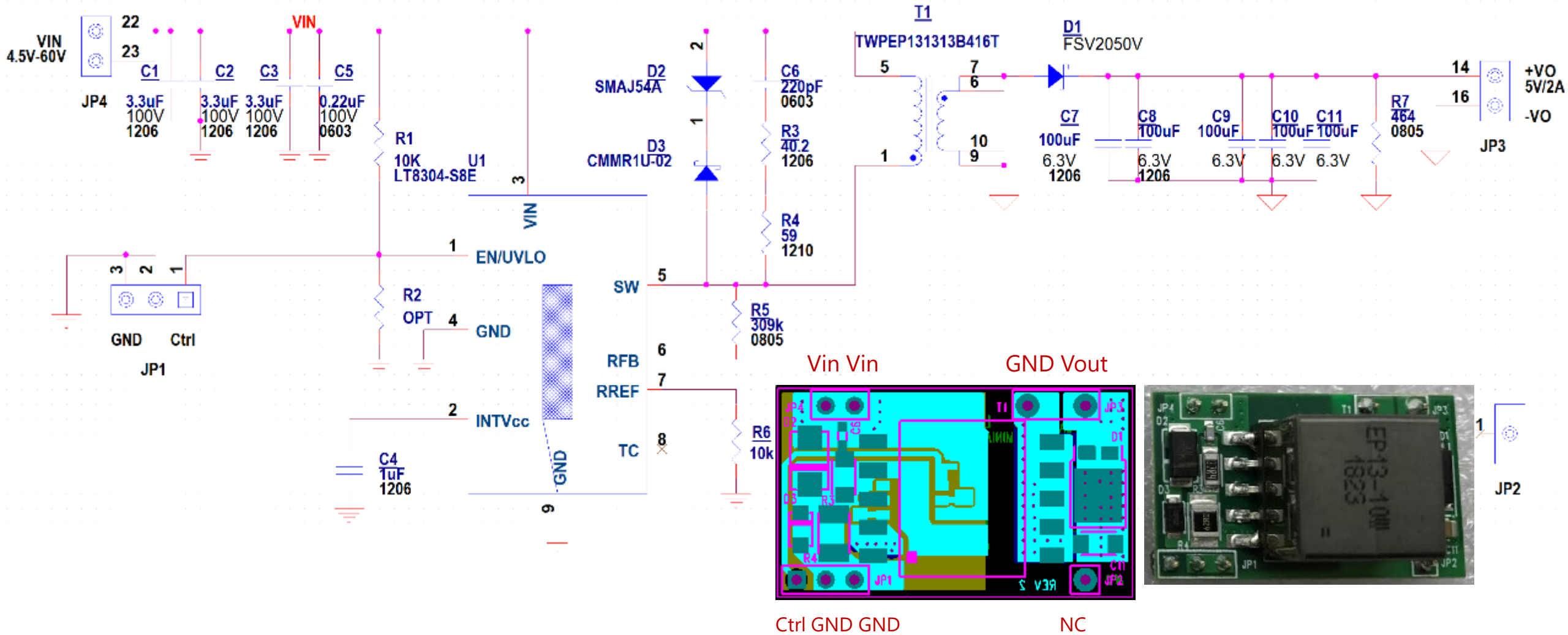
>\$2.x

Table 1. Pre-designed Transformers—Typical Specifications

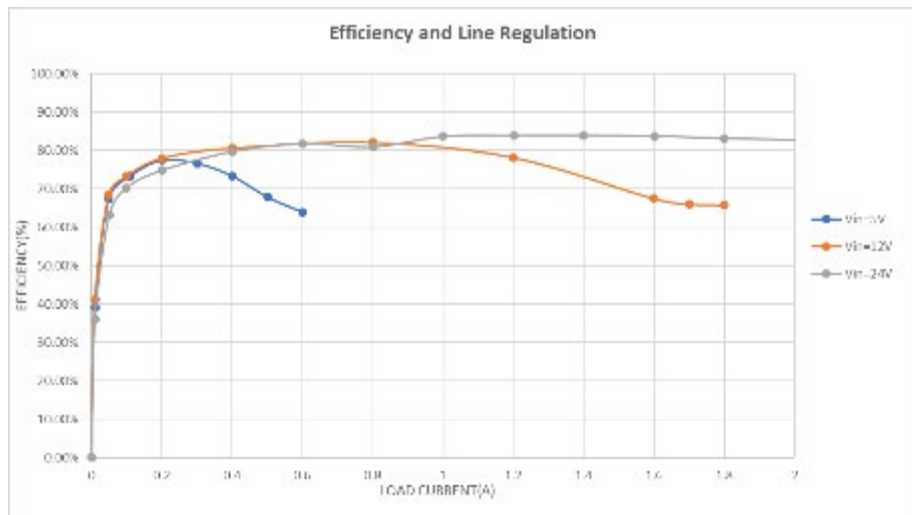
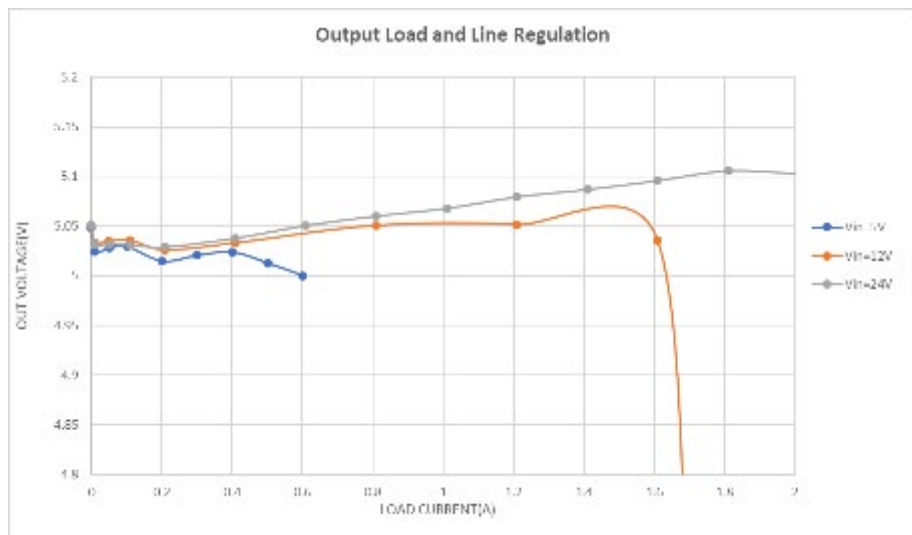
TRANSFORMER PART NUMBER	DIMENSIONS (W × L × H) (mm)	L _{PRI} (μH)	L _{LEAK} (μH)	NP:NS	R _{PRI} (mΩ)	R _{SEC} (mΩ)	VENDOR	TARGET APPLICATIONS		
								V _{IN} (V)	V _{OUT} (V)	I _{OUT} (A)
750313973	15.24 × 13.34 × 11.43	40	1	4:1	80	40	Würth Elektronik	8 to 36	3.3	0.80
750370047	13.35 × 10.8 × 9.14	30	1	3:1:1	60	12.5	Würth Elektronik	8 to 32	5	0.55
750313974	15.24 × 13.34 × 11.43	40	1	3:1	80	50	Würth Elektronik	8 to 36	5	0.55
750313970	15.24 × 13.34 × 11.43	40	1	2:1	80	70	Würth Elektronik	18 to 42	3.3	0.75
750310799	9.14 × 9.78 × 10.54	25	0.125	1:1:0.33	60	74	Würth Elektronik	8 to 30	12	0.22
750313972	15.24 × 13.34 × 11.43	40	1	1:1	80	185	Würth Elektronik	18 to 42	5	0.42
750313975	15.24 × 13.34 × 11.43	40	1	1:2	110	865	Würth Elektronik	8 to 36	24	0.12
750313976	15.24 × 13.34 × 11.43	40	1	1:4	110	2300	Würth Elektronik	8 to 32	48	0.05
12387-T036	15.5 × 12.5 × 11.5	40	2	4:1	160	25	Sumida	8 to 36	3.3	0.80
12387-T037	15.5 × 12.5 × 11.5	40	2	3:1	210	30	Sumida	8 to 36	5	0.55
12387-T040	15.5 × 12.5 × 11.5	40	1.5	2:1	210	50	Sumida	18 to 42	3.3	0.75
12387-T041	15.5 × 12.5 × 11.5	40	1.5	1:1	210	200	Sumida	18 to 42	5	0.42
12387-T038	15.5 × 12.5 × 11.5	40	2	1:2	220	460	Sumida	8 to 36	24	0.12
12387-T039	15.5 × 12.5 × 11.5	40	2	1:4	220	2200	Sumida	8 to 32	48	0.05
PA3948.003NL	15.24 × 13.08 × 11.45	40	1.45	4:1	210	26	Pulse Engineering	8 to 36	3.3	0.80
PA3948.004NL	15.24 × 13.08 × 11.45	40	1.95	3:1	220	29	Pulse Engineering	8 to 36	5	0.55
PA3948.001NL	15.24 × 13.08 × 11.45	40	1.45	2:1	410	70	Pulse Engineering	18 to 42	3.3	0.75
PA3948.002NL	15.24 × 13.08 × 11.45	40	1.45	1:1	405	235	Pulse Engineering	18 to 42	5	0.42
PA3948.005NL	15.24 × 13.08 × 11.45	40	1.60	1:2	220	1275	Pulse Engineering	8 to 36	24	0.12
PA3948.006NL	15.24 × 13.08 × 11.45	40	1.65	1:4	220	3350	Pulse Engineering	8 to 32	48	0.05

型号	年需求	RMB含税价格 (元/pcs)	USD\$含税价格 (元/pcs)
TWPEP090711B500T 3W	10K	¥4.33	\$0.64
	50K	¥3.27	\$0.48
	100K	¥2.53	\$0.37
TWPEP121112B404T 6W	10K	¥4.47	\$0.66
	50K	¥3.34	\$0.49
	100K	¥2.67	\$0.39
TWPEP131313B416T 10W	10K	¥4.73	\$0.70
	50K	¥3.67	\$0.54
	100K	¥2.93	\$0.43

10W Schematic & PCB

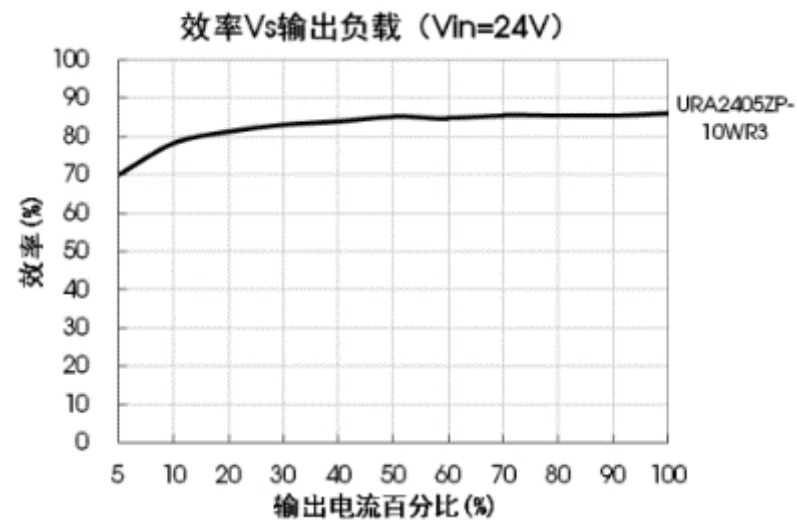


10W Performance



选型表

认证	产品型号	输入电压(VDC)		输出		效率 ^② (%Min./Typ.) @满载
		标称值 (范围值)	最大值 ^①	输出电压 (VDC)	输出电流(mA) (Max./Min.)	
	URA2405ZP-10WR3			±5	±1000/0	81/83



10W BOM Analysis

序号 SN Item	单板 数量 QTY	参考号/位号/元件编号 Designator/Reference	器件规格/参数值 Description	器件 类型 Type	器件封装 Package	附加描述 Addition Description	理论需求 Require QTY	计划下单 QTY	NR单价 Price	单板成本 1 Set Cost	美元估价
1	3	C1,C2,C3	CAP., X7S,3.3uF, 100V, 10%, 1206	C容	1206	TDK,C3216X7S2A335K160 AB	615	640	0.400	¥1.20	\$0.160
2	1	C4	CAP., X7R, 1uF, 50V, 10%, 1206	C容	1206	MURATA, GRM31CR71H105 KA61L	205	220	0.300	¥0.30	\$0.040
3	1	C5	CAP., X7S, 0.22uF, 100V, 10%, 0603	C容	0603	TAIYO YUDEN, HMK107C7224KAHTE	205	220	0.350	¥0.35	\$0.047
4	1	C6	CAP., COG, 220pF, 100V, 5%, 0603	C容	0603	MURATA, GRM1885C2A221 JA01D	205	220	0.200	¥0.20	\$0.027
5	5	C7,C8,C9,C10,C11	CAP., X5R, 100uF, 6.3V, 20%, 1206	C容	1206	MURATA, GRM31CR60J107 KE39L	1025	1070	0.500	¥2.50	\$0.333
6	1	D1	DIODE SCHOTTKY, 40V, 10A, POWERDI5	D二	POWERDI5	DIODE, PDS1040L-13	205	220	0.500	¥0.50	\$0.067
7	1	D2	DIODE,ZENER, 54V, 87.1V, 400W, SMA	D二	SMA	LITTELFUSE, SMAJ54A	205	220	0.500	¥0.50	\$0.067
8	1	D3	DIODE., GEN PURP, 200V 1A SOD123F	D二	SOD123F	CENTRAL, CMMR1U-02 TR	205	220	0.500	¥0.50	\$0.067
9	1	JP1	CONN HEADER 3 POS RA 2.54mm	J接	3Pin	2.54mm 直插插针, 3Pin	205	220	0.015	¥0.02	\$0.002
10	1	JP2	CONN HEADER 1 POS RA 2.54mm	J接	1Pin	2.54mm 直插插针, 1Pin	205	220	0.050	¥0.05	\$0.007
11	1	JP3	CONN HEADER 2 POS RA 5.08mm	J接	3Pin	2.54mm 直插插针, 3Pin, 中心Pin抽掉	205	220	0.015	¥0.02	\$0.002
12	1	JP4	CONN HEADER 2 POS RA 2.54mm	J接	2pin	2.54mm 直插插针, 2Pin	205	220	0.010	¥0.01	\$0.001
13	1	R1	RES., SMD, 10k, 1%, 1/16W, 0402	R阻	0402	VISHAY, CRCW040210K0FKED	205	220	0.030	¥0.03	\$0.004
14	0	R2	RES., OPT, 0402	R阻		不采购, 不焊接	0	0		¥0.00	\$0.000
15	1	R3	RES., SMD, 40.2 OHM, 1%, 1/4W, 1206	R阻	1206	VISHAY, CRCW120640R2FKEA	205	220	0.030	¥0.03	\$0.004
16	1	R4	RES., SMD, 59 OHM, 1%, 1/2W, 1210	R阻	1210	VISHAY, CRCW121059R0FKEA	205	220	0.030	¥0.03	\$0.004
17	1	R5	RES., SMD, 309k, 1%, 1/8W, 0805	R阻	0805	VISHAY, CRCW0805309KFKEA	205	220	0.030	¥0.03	\$0.004
18	1	R6	RES., SMD, 10k, 1%, 1/16W, 0402	R阻	0402	VISHAY, CRCW040210K0FKED	205	220	0.030	¥0.03	\$0.004
19	1	R7	RES., SMD, 464 OHM, 1%, 1/8W, 0805	R阻	0805	VISHAY, CRCW0805464RFKEA	205	220	0.030	¥0.03	\$0.004
20	1	T1	SUNLORD, TWPEP131313B416T	T变	10 PIN, 13.5MMX17.75MM	SUNLORD,	0	0	3.670	¥3.67	\$0.540
21	1	U1	LT8304ES8E#PBF	IC集	SO-8	LINEAR TECH., LT8304ES8E#PBF	0	0	17.500	¥17.50	\$2.574
代购服务费											
汇总	26	21	The END		END				合计	¥27.49	\$3.956

Module +\$1.2

ADI-Isolated gate driver(Automotive)

产品型号	Automotive	# Output Drivers	Iso Vout <i>min</i> V	Iso Vout <i>max</i> V	Iout Peak <i>typ</i> A	Insulation Rating <i>V_{rms}</i>	CMTI <i>min</i> V/us	Working Voltage <i>max</i> <i>V_{peak}</i>
Filter Parts	2 选定值▼ HIDE	3 选定值▼ HIDE	4.5 - 12.5 HIDE	17 - 35 HIDE	100m - 6 HIDE	1k - 5k HIDE	25k - 150k HIDE	350 - 849 HIDE
ADUM4137	Yes	1	12	25	6	5k	150k	849
ADUM4138	Yes	1	12	25	6	5k	150k	849
ADUM3224	Yes	2	4.5	18	4	3k	25k	560
ADUM4224	Yes	2	4.5	18	4	5k	25k	849
ADUM3223	Yes	2	4.5	18	4	3k	25k	560
ADUM4223	Yes	2	4.5	18	4	5k	25k	849
ADUM3221	Yes	2	4.5	18	4	2.5k	25k	560
ADUM3220	Yes	2	4.5	18	4	2.5k	25k	560
ADUM5230	Yes	2	12	18	100m	2.5k	25k	-

ADI-Isolated gate driver ADuM4138(High Voltage, Isolated IGBT Gate Driver with Isolated Flyback Controller)

FEATURES

6 A (typical) peak drive output capability
 Internal turn off NFET, on resistance: $<1\ \Omega$
 Internal turn on PFET, on resistance: $<1.2\ \Omega$

2 overcurrent protection methods
 Desaturation detection
 Split emitter overcurrent detection
 Miller clamp output with gate sense input
 Isolated fault output

Isolated temperature sensor readback

Propagation delay

Rising: 95 ns typical

Falling: 100 ns typical

Minimum pulse width: 74 ns

Operating junction temperature range: -40°C to $+150^{\circ}\text{C}$

V_{DD1} and V_{DD2} UVLO

Minimum external tracking (creepage): 8.3 mm (pending)

Safety and regulatory approvals

5000 V rms for 1 minute per UL 1577

CSA Component Acceptance Notice 5A

DIN V VDE V 0884-10 (VDE V 0884-10):2006-12

$V_{IORM} = 849 V_{PEAK}$ (reinforced/basic)

Qualified for automotive applications

APPLICATIONS

MOSFET and IGBT gate drivers

Photovoltaic (PV) inverters

Motor drives

Power supplies

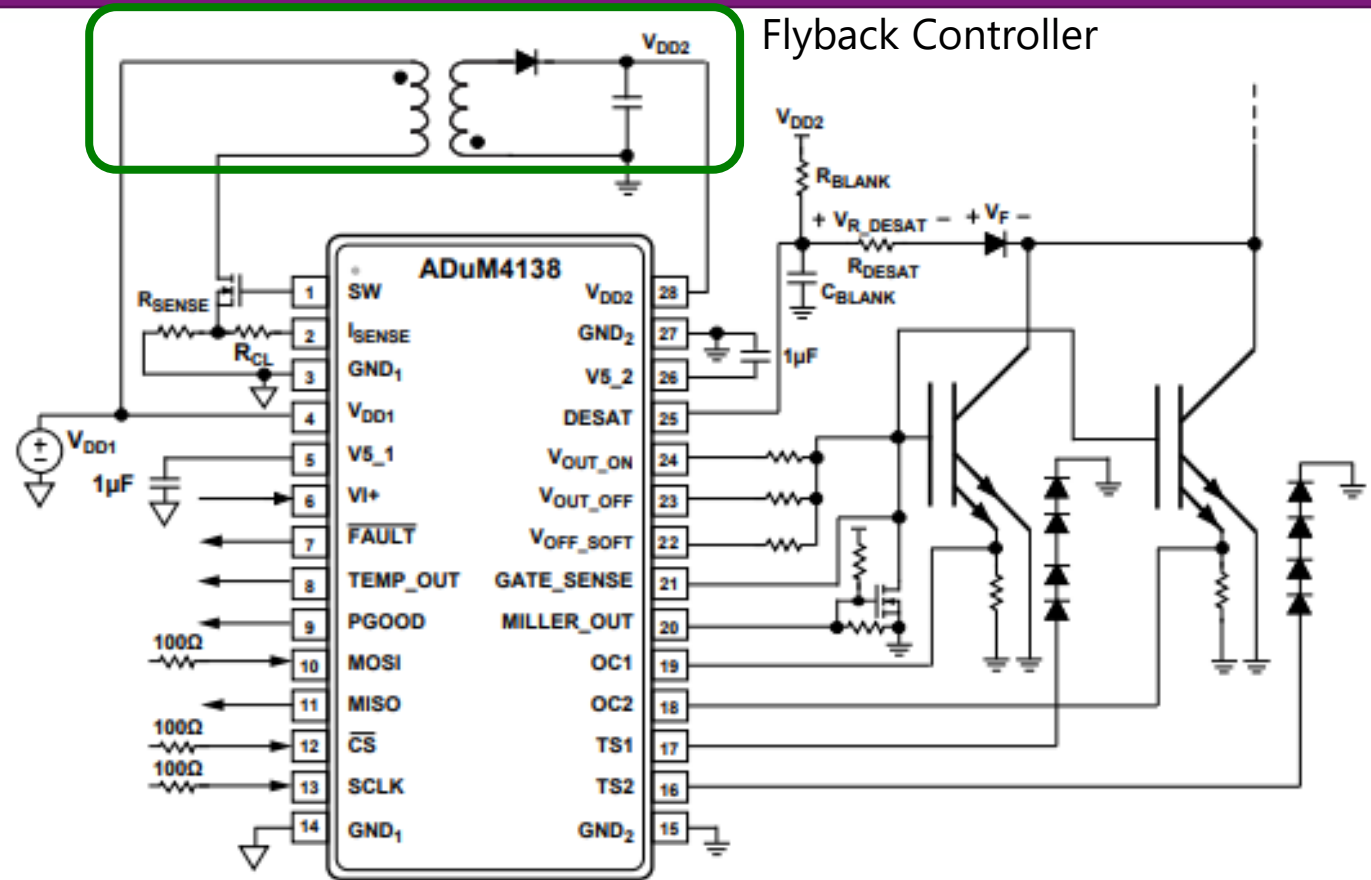


Figure 30. IGBT Drive Example Application, Snubber Can Be Added to Flyback

ADI-Isolated gate driver ADuM4138(Isolated Temperature Sensor)

Isolated Temperature Sensor

The ADuM4138 allows simple isolated temperature detection. Using an internal current source to bias an external temperature sensing diode, the ADuM4138 encodes the forward-biased voltage of the diode into a PWM signal, which is passed across the isolation barrier from the secondary side to the primary side. The PWM signal operates at 10 kHz or 50 kHz (programmed in the EEPROM). A 10% (typical) PWM signal corresponds to a voltage of 2.45 V, and a 92% (typical) PWM signal corresponds to 1.55 V. Voltages between the minimum and maximum are approximately linear and monotonically interpolated. The ADuM4138 contains support for two remote temperature sensing diode assemblies, which can both cause overheating faults on the secondary side. Additionally, one temperature sensor readback is available for reading on the primary side through the isolated temperature reporting channel. The lower voltage (higher temperature) of the two temperature sensor pins, TS1 and TS2, reports on the TEMP_OUT pin. The gain and offset of the PWM temperature sensor can be set in the TEMP_OUT pin voltage mapping (see Figure 22).

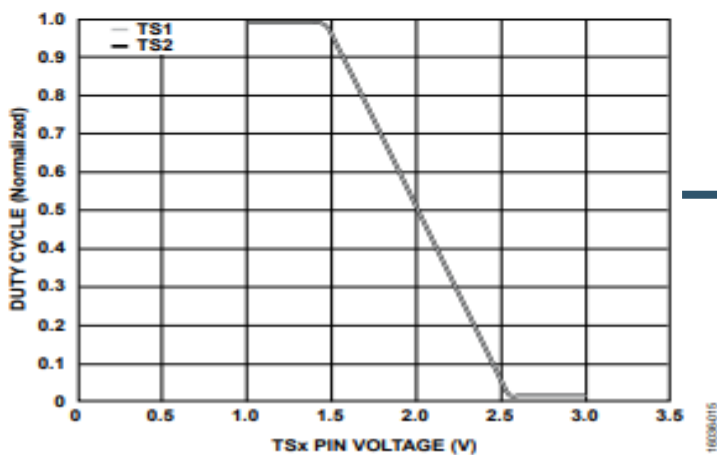


Figure 22. TEMP_OUT Duty Cycle vs. Lower TSx Pin Voltage

→ PWM Duty Cycle VS TS PIN Voltage

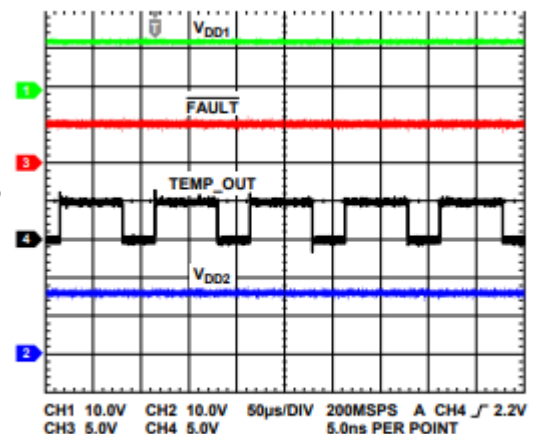


Figure 10. Example TEMP_OUT Reading, $V_{DD1} = 12\text{ V}$, $V_{DD2} = 16\text{ V}$

ADI-Isolated gate driver ADuM4138(Package and Temperature Range)

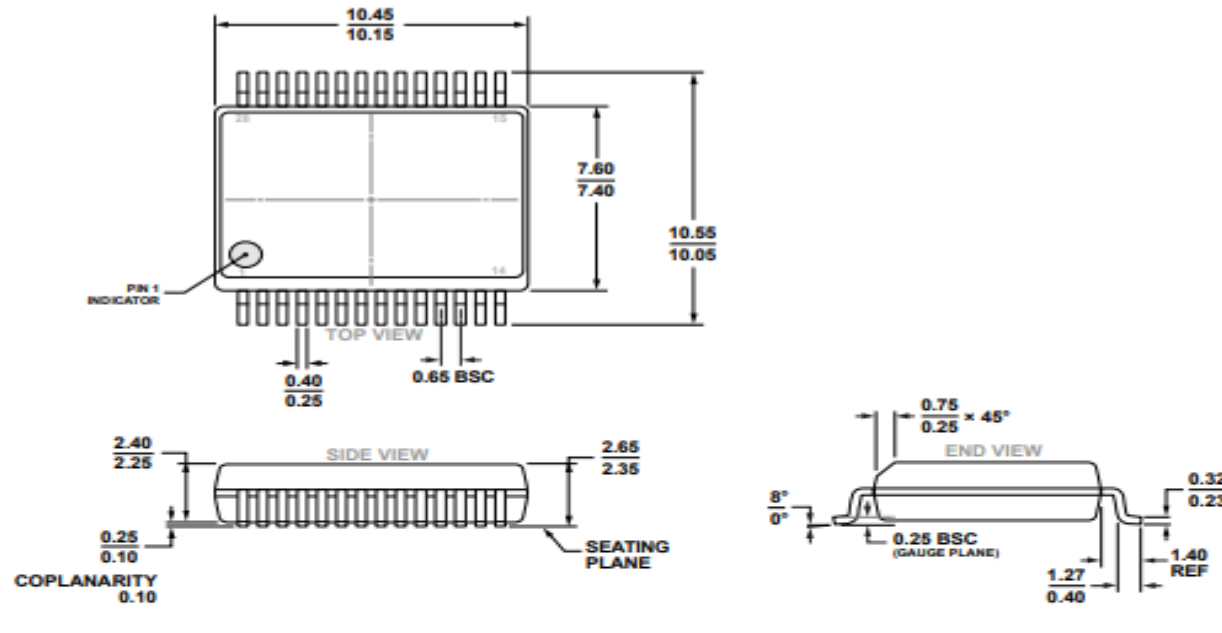


Figure 31. 28-Lead Standard Small Outline, Wide Body with Finer Pitch [SOIC_W_FP]
(RN-28-1)
Dimensions shown in millimeters

ORDERING GUIDE

Model ^{1, 2}	Temperature Range	Package Description	Package Option
ADuM4138WBRNZ	-40°C to +150°C	28-Lead Standard Small Outline, Wide Body with Finer Pitch [SOIC_W_FP]	RN-28-1
ADuM4138WBRNZ-RL	-40°C to +150°C	28-Lead Standard Small Outline, Wide Body, with Finer Pitch [SOIC_W_FP]	RN-28-1
EVAL-ADuM4138EBZ		Evaluation Board	

¹ Z = RoHS Compliant Part.

² W = Qualified for Automotive Applications.

ADI-Isolated gate driver ADuM3223/ADuM4223

Isolated Precision Half-Bridge Driver, 4 A Output

FEATURES

4 A peak output current

Working voltage

High-side or low-side relative to input: 537 V peak

High-side to low-side differential: 800 V peak

High frequency operation: 1 MHz maximum

3.3 V to 5 V CMOS input logic

4.5 V to 18 V output drive

UVLO at 2.5 V_{DD1}

ADuM3223A/ADuM4223A UVLO at 4.1 V_{DD2}

ADuM3223B/ADuM4223B UVLO at 7.0 V_{DD2}

ADuM3223C/ADuM4223C UVLO at 11.0 V_{DD2}

Optional UVLO voltage
for MOS or IGBT

Precise timing characteristics

54 ns maximum isolator and driver propagation delay

5 ns maximum channel-to-channel matching

CMOS input logic levels

High common-mode transient immunity: >25 kV/ μ s

Enhanced system-level ESD performance per IEC 61000-4-x

High junction temperature operation: 125°C

Thermal shutdown protection

Default low output

Safety and regulatory approvals

ADuM3223 narrow-body, 16-lead SOIC

UL recognition per UL 1577

3000 V rms for 1 minute SOIC long package

CSA Component Acceptance Notice 5A

VDE certificate of conformity

DIN V VDE V 0884-10 (VDE V 0884-10):2006-12

V_{IORM} = 560 V peak

ADuM4223 wide-body, 16-lead SOIC

UL recognition per UL 1577

5000 V rms for 1 minute SOIC long package

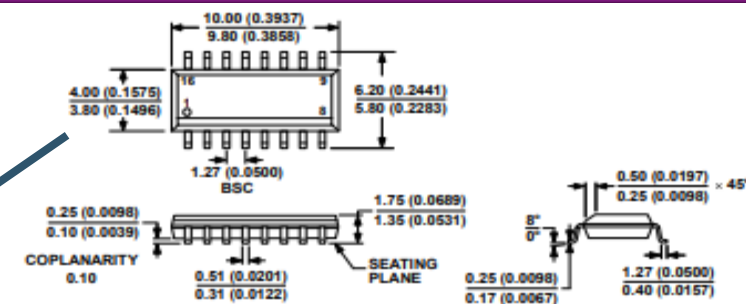
CSA Component Acceptance Notice 5A

VDE certificate of conformity

DIN V VDE V 0884-10 (VDE V 0884-10):2006-12

V_{IORM} = 840 V peak

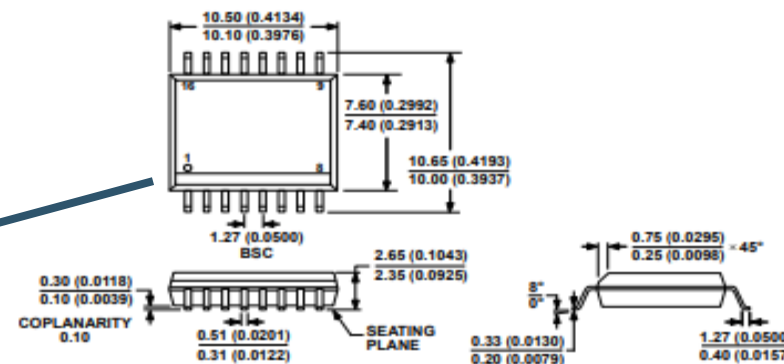
Qualified for automotive applications



COMPLIANT TO JEDEC STANDARDS MS-012-AC
CONTROLLING DIMENSIONS ARE IN MILLIMETERS; INCH DIMENSIONS
(IN PARENTHESES) ARE ROUNDED-OFF MILLIMETER EQUIVALENTS FOR
REFERENCE ONLY AND ARE NOT APPROPRIATE FOR USE IN DESIGN.

Figure 28. 16-Lead Standard Small Outline Package [SOIC_N]
Narrow Body
(R-16)

Dimensions shown in millimeters and (inches)



COMPLIANT TO JEDEC STANDARDS MS-013-AA
CONTROLLING DIMENSIONS ARE IN MILLIMETERS; INCH DIMENSIONS
(IN PARENTHESES) ARE ROUNDED-OFF MILLIMETER EQUIVALENTS FOR
REFERENCE ONLY AND ARE NOT APPROPRIATE FOR USE IN DESIGN.

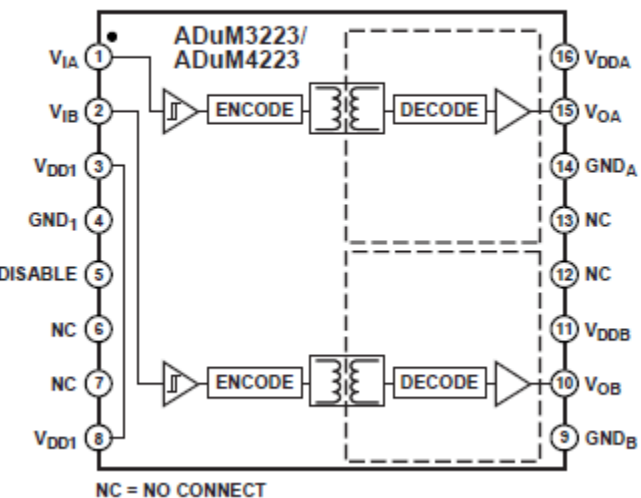
Figure 29. 16-Lead Standard Small Outline Package [SOIC_W]
Wide Body
(RW-16)

Dimensions shown in millimeters and (inches)

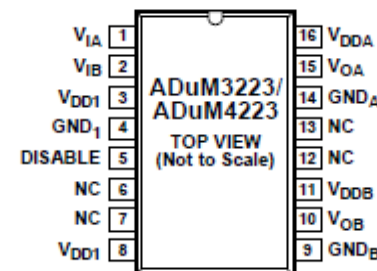
ADuM4223 Wide body for
Higher Isolated Voltage

ADI-Isolated gate driver ADuM3223/ADuM4223

FUNCTIONAL BLOCK DIAGRAM



Less Pins compared with ADuM4138



NOTES
1. NC = NO CONNECT.
DO NOT CONNECT TO THIS PIN.

Figure 4. Pin Configuration

P2P with Silicon Labs
Si8238

Table 14. ADuM3223/ADuM4223 Pin Function Descriptions

Pin No. ¹	Mnemonic	Description
1	V _{IA}	Logic Input A.
6, 7, 12, 13	NC	No Connect. Do not connect to this pin
2	V _{IB}	Logic Input B.
3, 8	V _{DD1}	Input Supply Voltage.
4	GND ₁	Ground Reference for Input Logic Signals.
5	DISABLE	Input Disable. When this pin is high, it disables the isolator inputs setting outputs to a low state. The reaction to the DISABLE pin signal is approximately equal to the normal propagation delay.
9	GND _B	Ground Reference for Output B.
10	V _{OB}	Output B.
11	V _{DDB}	Output B Supply Voltage.
14	GND _A	Ground Reference for Output A.
15	V _{OA}	Output A.
16	V _{DDA}	Output A Supply Voltage.

¹ Pin 3 and Pin 8 are internally connected; connecting both pins to supply V_{DD1} is recommended.

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