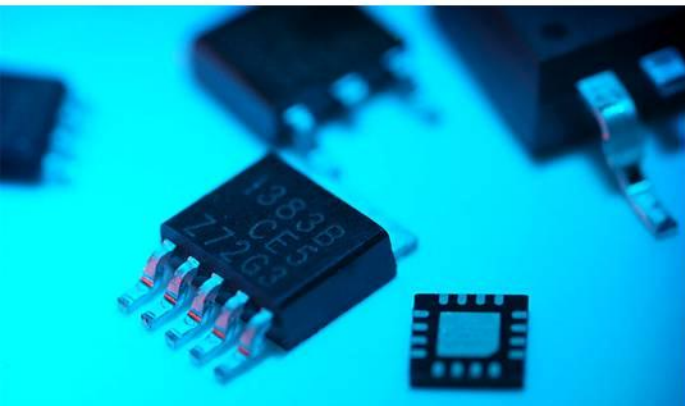




AIC Power Solutions Overview



2019 Q2

PRODUCT PORTFOLIO



● Power Conversion

- Linear Voltage Regulator
- DC/DC Converter ★★★★★
- White-LED Driver
- LED Lighting Driver ★★★

● Power Manipulation

- Supervisory
- Battery Management
- Power Switch ★★
- High Current Driver



POWER CONVERSION



Linear Voltage Regulator

- Low Dropout Linear Regulator
- Ultra Low Dropout Linear Regulator
- Negative Voltage Regulator
- Voltage Reference
- DDR Regulator
- Fan Control Driver

DC/DC Converter

- Step - Up
- Inverting
- Charge - Pump
- Step - Down
- Multiple Output

White-LED Driver

- Charge - Pump
- Boost Converter
- Buck Converter
- Constant Current Switcher

LED Lighting Solution

- Off - Line Linear
- Step - Down
- AC/DC

POWER MANIPULATION



Supervisory

- Microprocessor Reset Circuits
- Reset Circuits with Manual Reset Input

Battery Management

- NiMH/NiCd Charger
- Li-Ion Charger
- Li-ion Protection

Power Switch

- Universal Power Switch
- USB Power Switch

Others

- High Current Driver
- Universal DC/DC Converter
- Universal AC/DC Converter

Buck Converters

AIC28xx/23xx/22xx Series

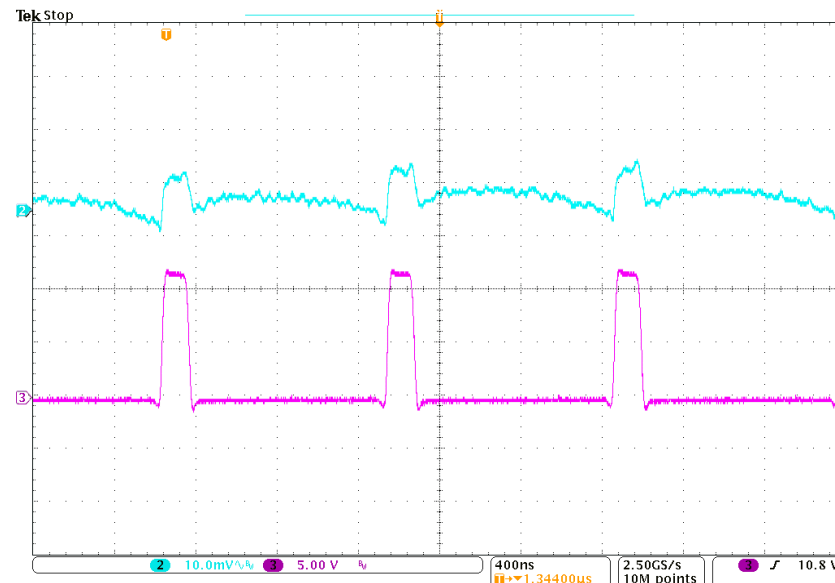
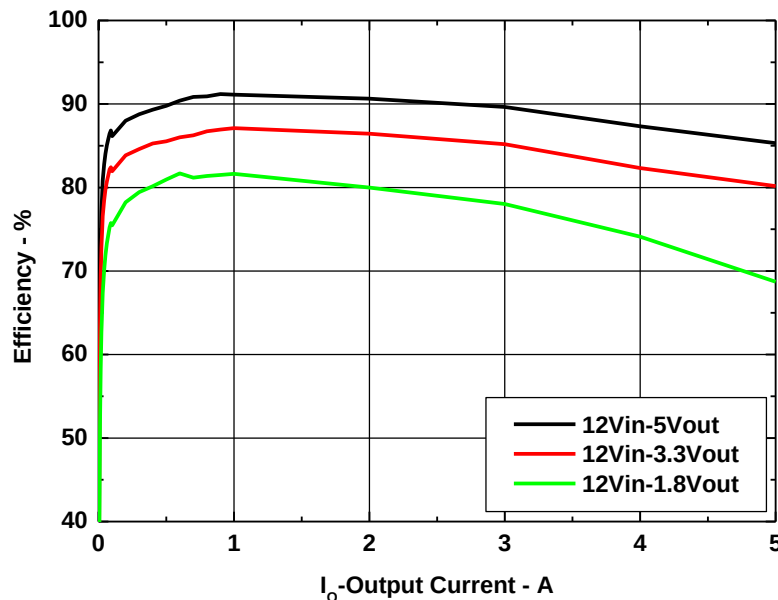
Output Current		≤1.5A	≤2A	≤3A	≤5A
HV Buck	Vin up to 30V		AIC2892 AOT	AIC2893 AOT	
	Vin up to 23V		AIC2822 AIC2857F AIC2862	AIC2823 AIC2858F AIC2863	
	Vin up to 16V		AIC2832 AIC2872 AOT	AIC2833(FC) AIC2873B AOT	AIC2865(5A) AIC2864(4A)
LV Buck	Vin up to 6V	AIC2259 AOT AIC2354 AIC2385 AIC2359(Dual) AIC2258(FC) AIC2271 AOT AIC2253 AOT AIC2140 AOT	AIC2262(FC) AOT AIC2272(FC) AIC2321/22 AIC2362 AIC2472(PM) U-Low Iq 0.7uA	AIC2323 AIC2363 AIC2369	AIC2324(4A) AIC2364(4A) AIC2367(5A)
		AIC2071(PM)			

AOT: Adaptive On-Time Control

PM: Power Module

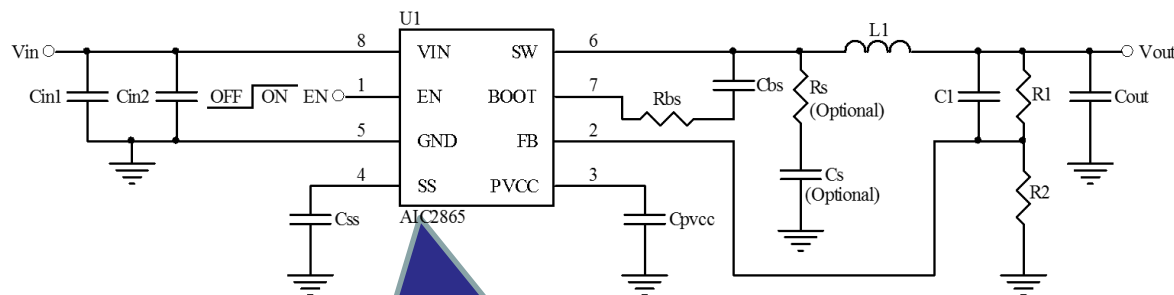
FC: Flip Chip

5A 16V 700kHz COT Synchronous Step-Down Converter

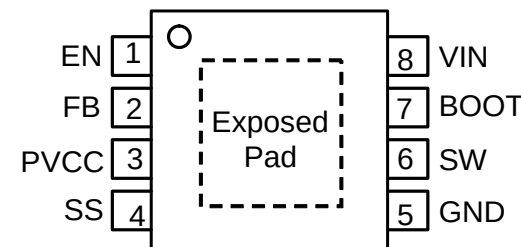


$V_{OUT}=1.05V$, $I_{OUT}=5A$ Ripple at $V_{IN}=12V$

Application Circuit



Package



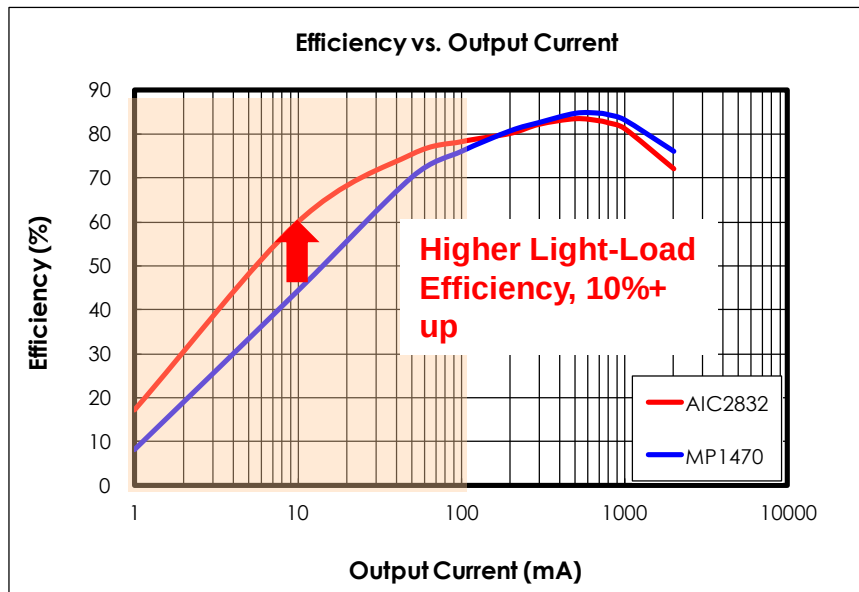
SOP-8 exposed pad

TPS54528 Compatible

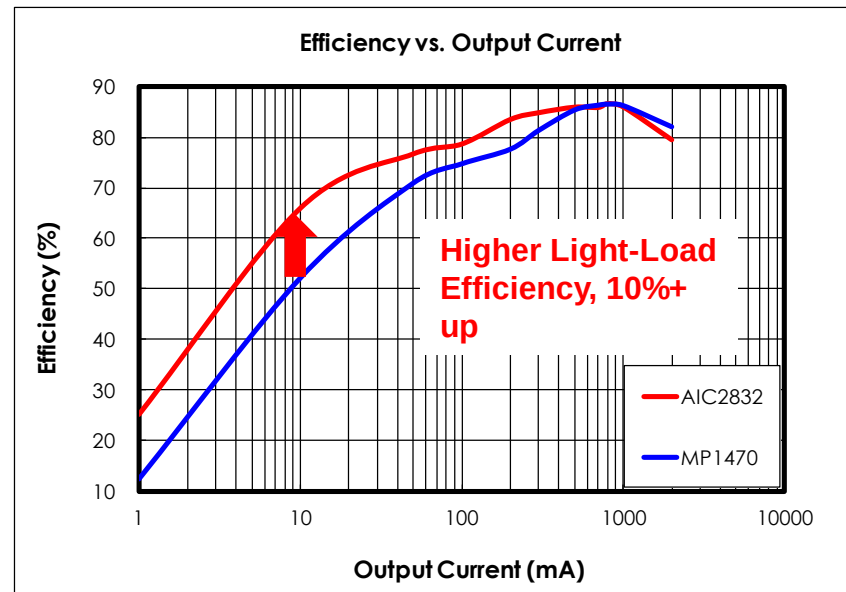
5A 16V 700kHz COT Synchronous Step-Down Converter

Parametrics	AIC2865	TPS54528
Vin(Min)(V)	4.5	4.5
Vin(Max)(V)	16	18
Vout(Min)(V)	0.8	0.76
Vout(Max)(V)	6	6
Iout(Max)(A)	5	5
Regulated Outputs(#)	1	1
Switching Frequency(Min)(kHz)	700	650
Switching Frequency(Max)(kHz)	700	650
Iq(Typ)(mA)	0.7	0.9
Special Features	Enable Light Load Efficiency Synchronous Rectification	Enable Light Load Efficiency Synchronous Rectification
Control Mode	COT	D-CAP2
Operating Temperature Range(C)	-40 to 85	-40 to 85

2A 16V 490kHz PWM/PSM Synchronous Step-Down Converter

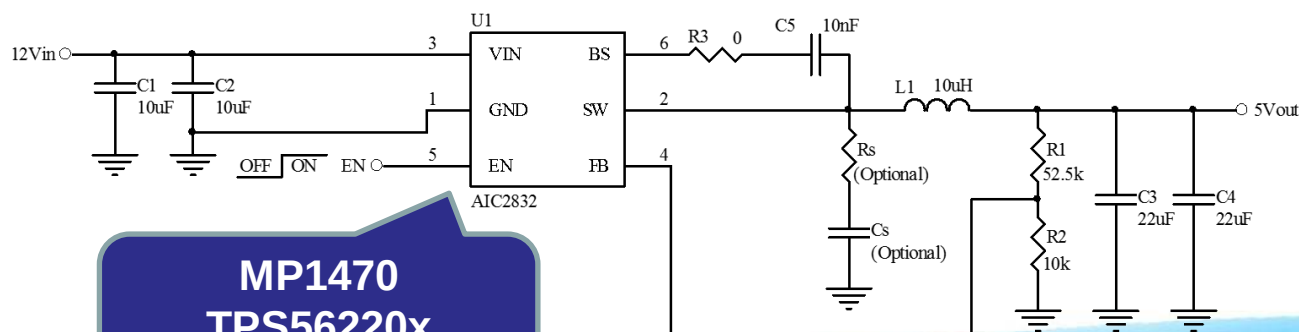


1.05V_{OUT} Efficiency at V_{IN}=12V



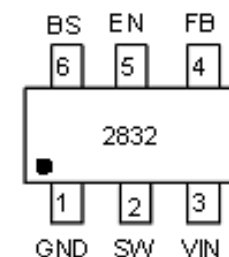
1.8V_{OUT} Efficiency at V_{IN}=12V

Application Circuit



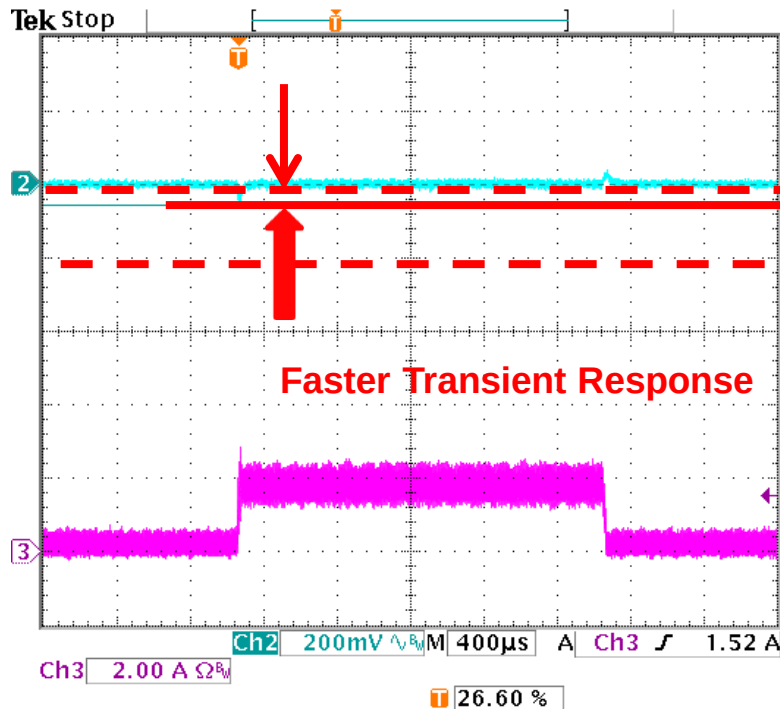
**MP1470
TPS56220x
Compatible**

Package

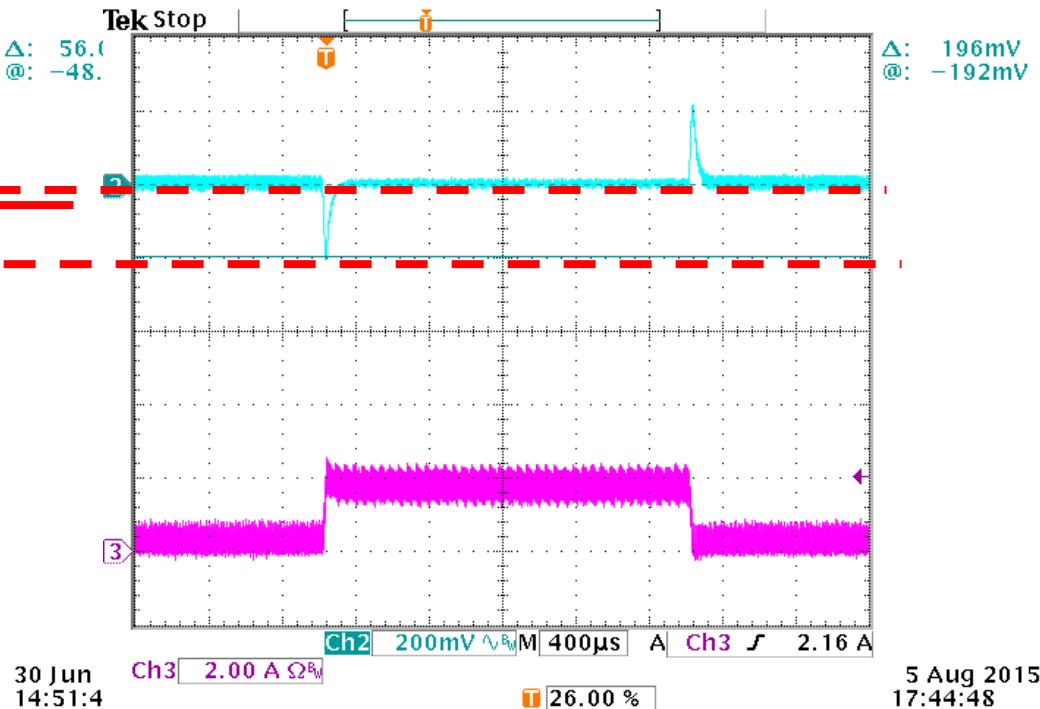


SOT-23-6

2A 16V 490kHz PWM/PSM Synchronous Step-Down Converter



AIC2832 $V_{IN}=12V$, $V_{OUT}=1.05V$, $I_O=0.2 \sim 1.8A$,
drop=59mV
 CH2: Output Voltage, CH3: Inductor Current



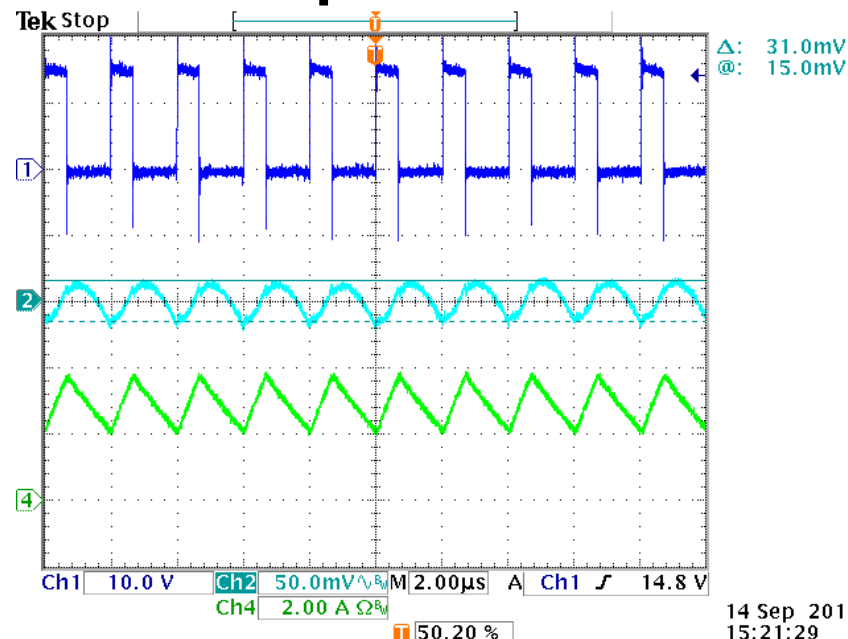
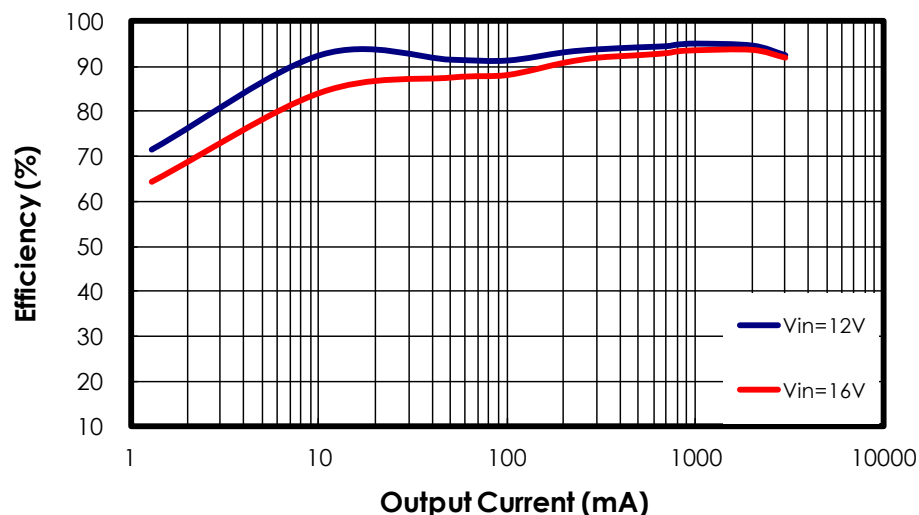
MP1470 $V_{IN}=12V$, $V_{OUT}=1.05V$, $I_O=0.2 \sim 1.8A$,
drop=196mV
 CH2: Output Voltage, CH3: Inductor Current

2A 16V 490kHz PWM/PSM Synchronous Step-Down Converter

Parametrics	AIC2832	TPS562200	MP1470
Vin(Min)(V)	4.5	4.5	4.7
Vin(Max)(V)	16	17	16
Vout(Min)(V)	0.8	0.76	0.8
Vout(Max)(V)	10	7	0.9V _{IN}
Iout(Max)(A)	2	2	2
Switching Frequency(Min)(kHz)	500	650	500
Switching Frequency(Max)(kHz)	500	650	500
Iq(Typ)(mA)	0.5	0.23	0.83
Special Features	Enable Up to 92% efficiency Synchronous Rectification	Enable Light Load Efficiency Synchronous Rectification	Enable Light Load Efficiency Synchronous Rectification
Duty Cycle(Max)(%)	90	80	92
Operating Temperature Range(C)	-40 to 85	-40 to 85	-40 to 85

3A 16V 490kHz PWM/PSM Synchronous Step-Down Converter

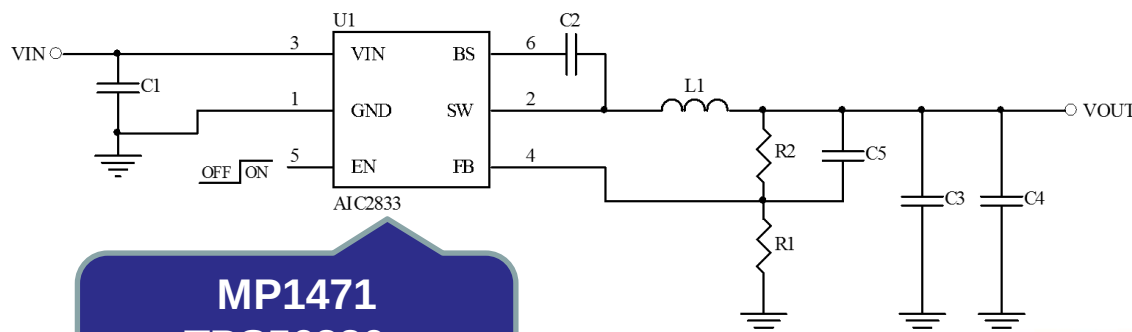
Efficiency vs. Output Current



14 Sep 2016
15:21:29

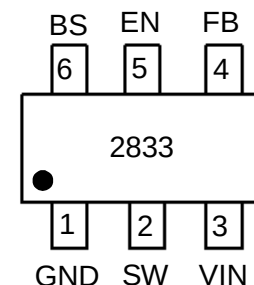
$V_{OUT}=5V$, $I_{OUT}=3A$ Ripple at $V_{IN}=12V$

Application Circuit



**MP1471
TPS56320x
Compatible**

Package

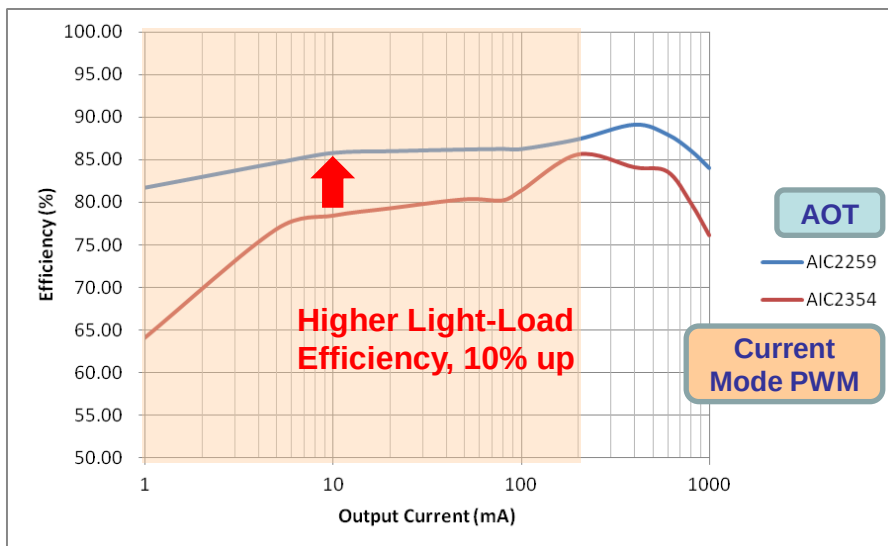


SOT-23-6

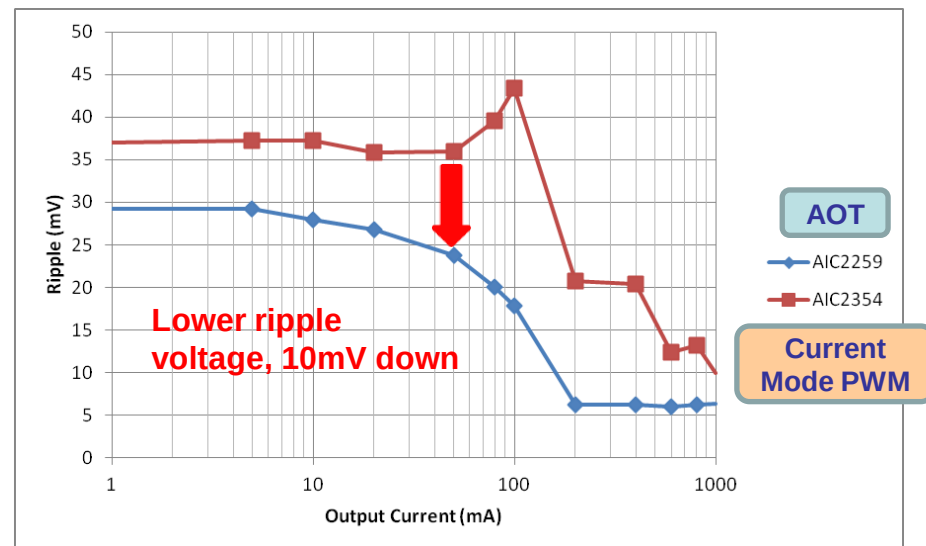
3A 16V 490kHz PWM/PSM Synchronous Step-Down Converter

Parametrics	AIC2833	TPS563200	MP1471
Vin(Min)(V)	4.5	4.5	4.7
Vin(Max)(V)	16	17	16
Vout(Min)(V)	0.8	0.76	0.8
Vout(Max)(V)	10	7	0.9V _{IN}
Iout(Max)(A)	3	3	3
Switching Frequency(Min)(kHz)	490	650	500
Switching Frequency(Max)(kHz)	490	650	500
Iq(Typ)(mA)	0.5	0.19	0.83
Special Features	Enable Up to 95% efficiency Synchronous Rectification	Enable Light Load Efficiency Synchronous Rectification	Enable Light Load Efficiency Synchronous Rectification
Duty Cycle(Max)(%)	90	80	92
Operating Temperature Range(C)	-40 to 85	-40 to 85	-40 to 85

1A, 1.5MHz AOT Synchronous Step-Down DC/DC Converter

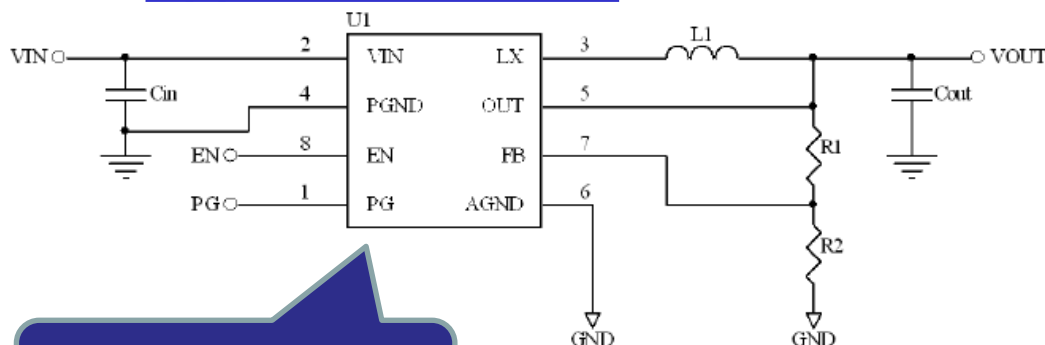


$V_{OUT}=1.0V$ Efficiency at $V_{IN}=5V$



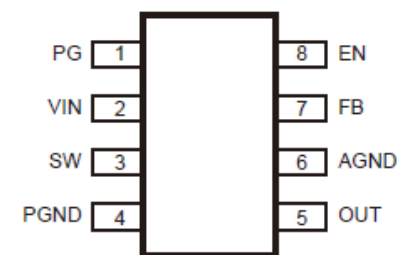
$V_{OUT}=1.0V$ Ripple at $V_{IN}=5V$

Application Circuit



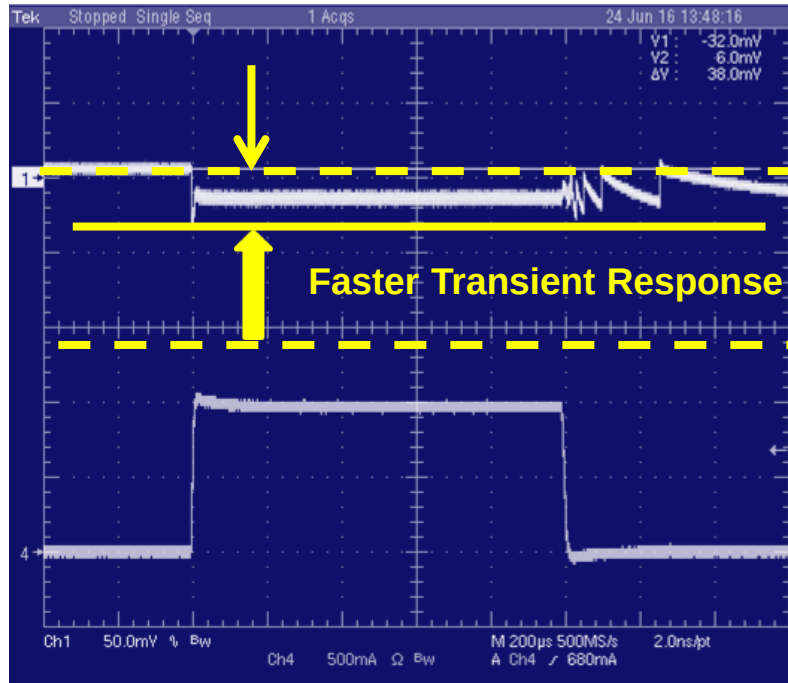
MP2159
Compatible

Package



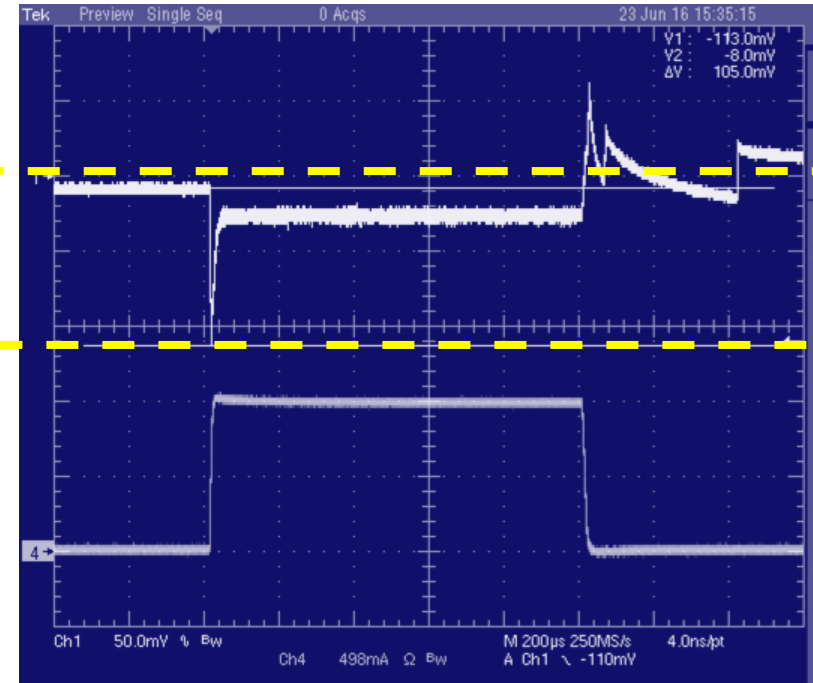
TSOT-23-8

1A, 1.5MHz **AOT** Synchronous Step-Down DC/DC Converter



AIC2259 $V_{IN}=5V$, $V_{OUT}=1.0V$, $I_O=0 \sim 1A$,
drop=38mV
 (CH1: Output Voltage, CH4: Output Current)

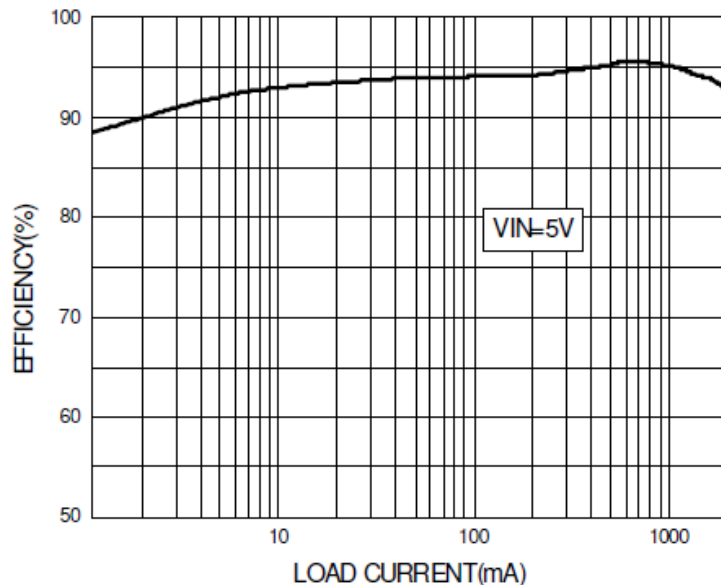
AOT



AIC2354 $V_{IN}=5V$, $V_{OUT}=1.0V$, $I_O=0 \sim 1A$,
drop=105mV
 (CH1: Output Voltage, CH4: Output Current)

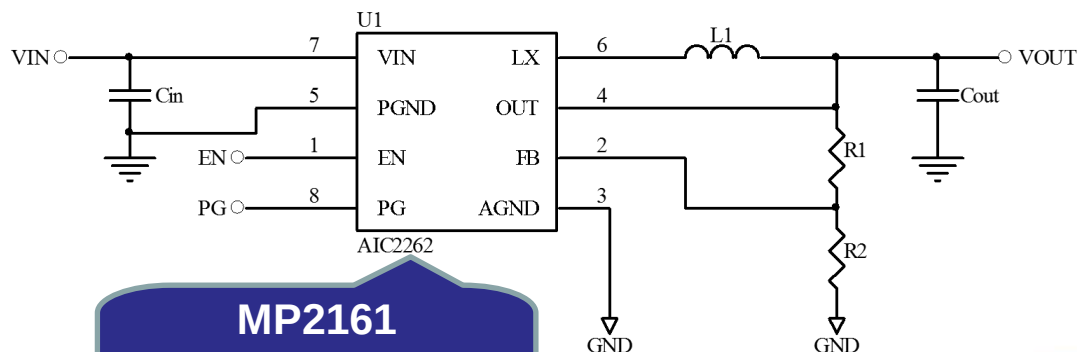
Current Mode PWM

2A 1.5MHz AOT Synchronous Step-Down Converter

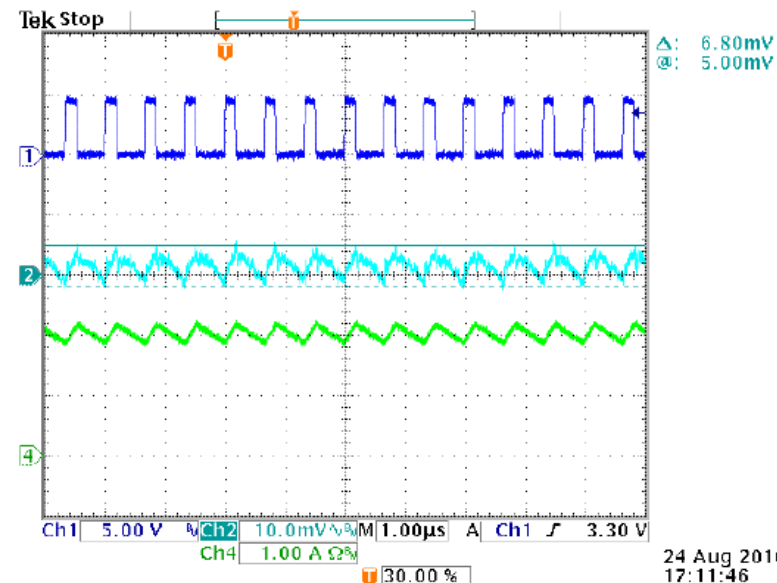


$V_{OUT}=3.3V$, $V_{IN}=5V$

Application Circuit

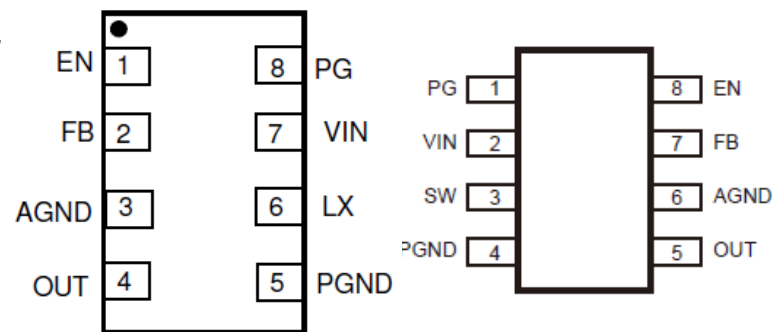


**MP2161
MP2162
Compatible**



$V_{OUT}=1.2V$, $I_{OUT}=2A$ Ripple at $V_{IN}=5V$

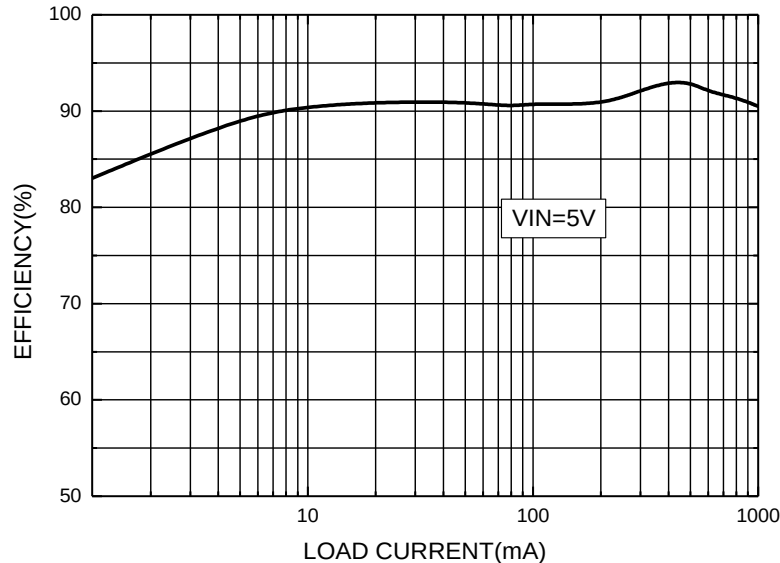
Package



8-pin DFN 2mm x 1.5mm

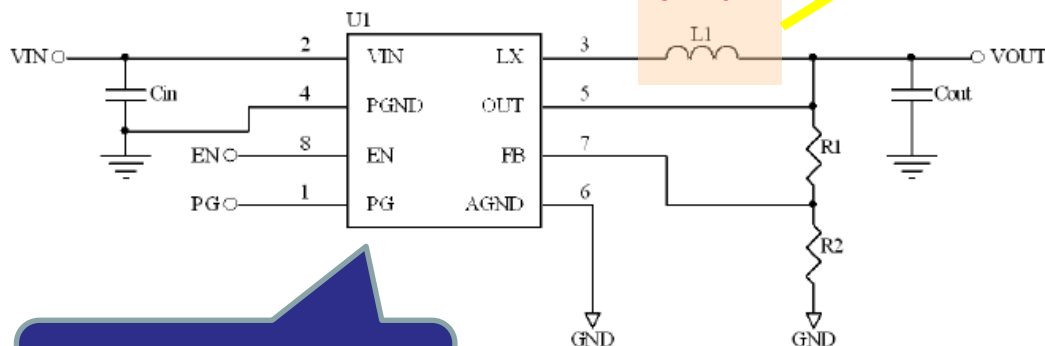
TSOT-23-8

1A, 3MHz AOT Synchronous Step-Down DC/DC Converter

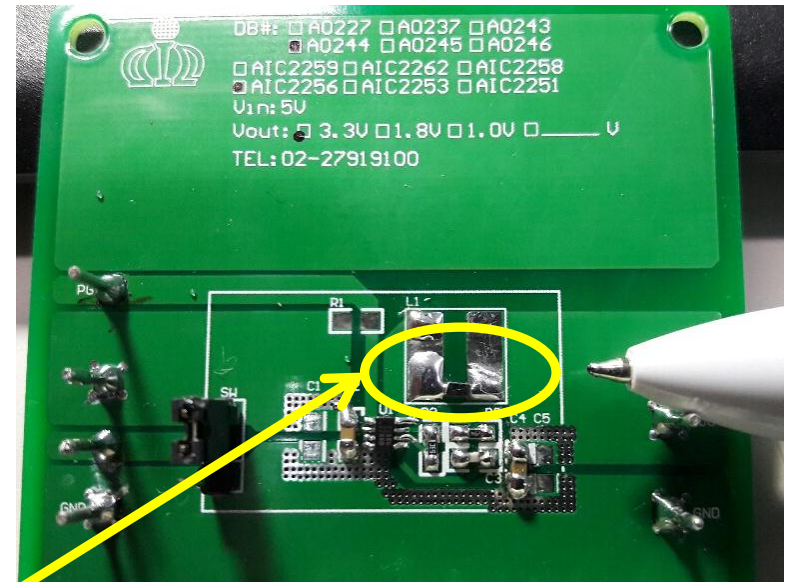


$V_{OUT}=3.3V$, $V_{IN}=5V$

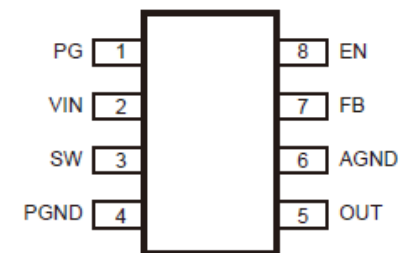
Application Circuit



MP2159
Compatible



Package



TSOT-23-8

AIC22xx Product Series

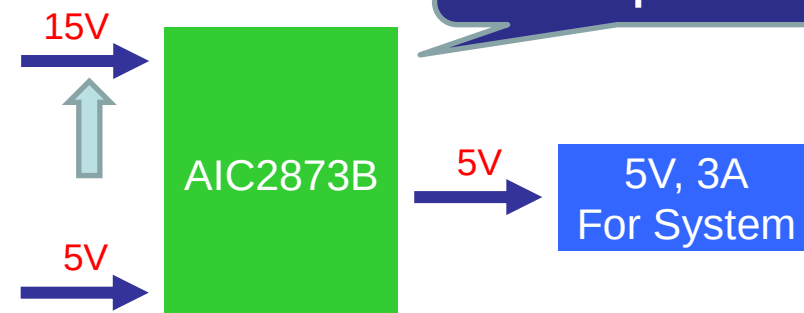
Part Number	AIC2385	AIC2253	AIC2271	AIC2258	AIC2259	AIC2262
Input Voltage	2.5V~6V	2.5V~6V	2.5V~6V	2.5V~6V	2.5V~6V	2.5V~6V
Output Current	1.5A	1A	1A	1A	1A	2A
Switching Frequency	1.5MHz	1.5MHz	3MHz	1.5MHz	1.5MHz	1.5MHz
Quiescent Current	65uA	8uA	17uA	17uA	17uA	17uA
Control Mode	Current Mode PWM	AOT	AOT	AOT	AOT	AOT
Package	Wire-bond SOT23-5	Wire-bond TSOT23-8	Wire-bond TSOT23-8	Flip-chip TSOT23-8	Wire-bond TSOT23-8	Flip-chip TSOT23-8 DFN8
Remark	P2P TLV62565	P2P MP2158 MP2159	P2P MP2158 MP2159	P2P MP2158 MP2159	P2P MP2158 MP2159	P2P MP2161 MP2162

3A 17V Synchronous Step-Down Converter with AOT Control

•AOT Topology

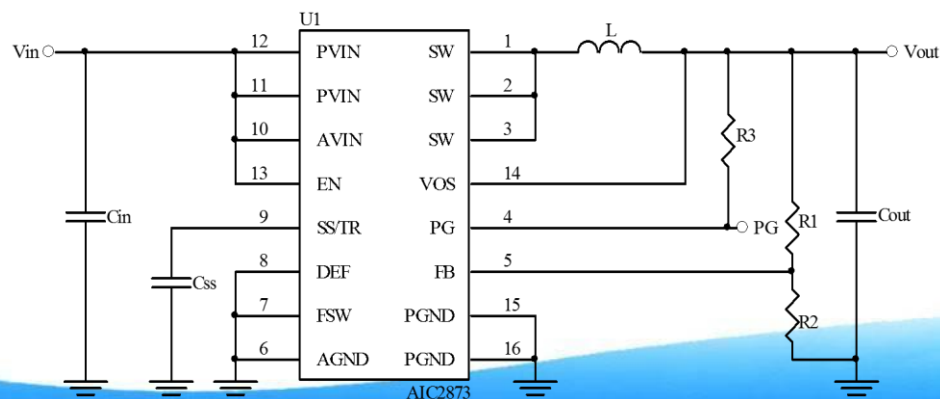
- Input Voltage Range: 4.5V to 17V
- Up to 3A Output Current
- Adjustable Output Voltage From 0.9V to 5V
- Pin-Selectable Output Voltage (Nominal, +5%)
- Programmable Soft Start and Tracking
- Seamless Power Save Mode Transition
- Quiescent Current of 40 μ A (Typical)
- Selectable Operating Frequency
- Power Good Output
- 100% Duty Cycle Mode
- Short-Circuit Protection
- Over-Voltage Protection with Latch
- Over Temperature Protection
- Available in a 3-mm $\times$ 3-mm, VQFN-16 Package

VIN= 3V~17V

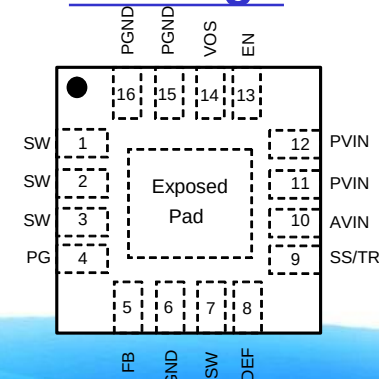


Capable for 100% Duty Cycle Operation

Application Circuit



Package

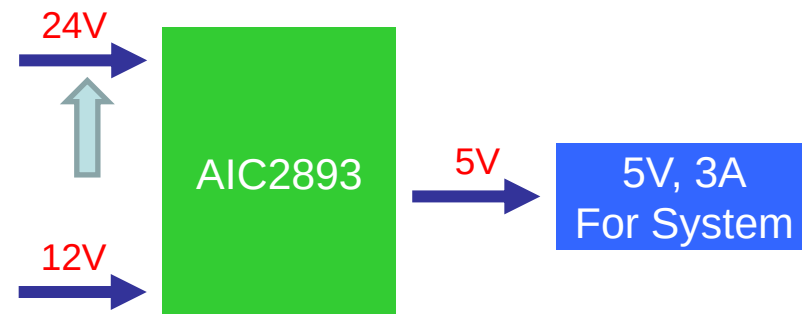


16-pin VQFN 3mm $\times$ 3mm

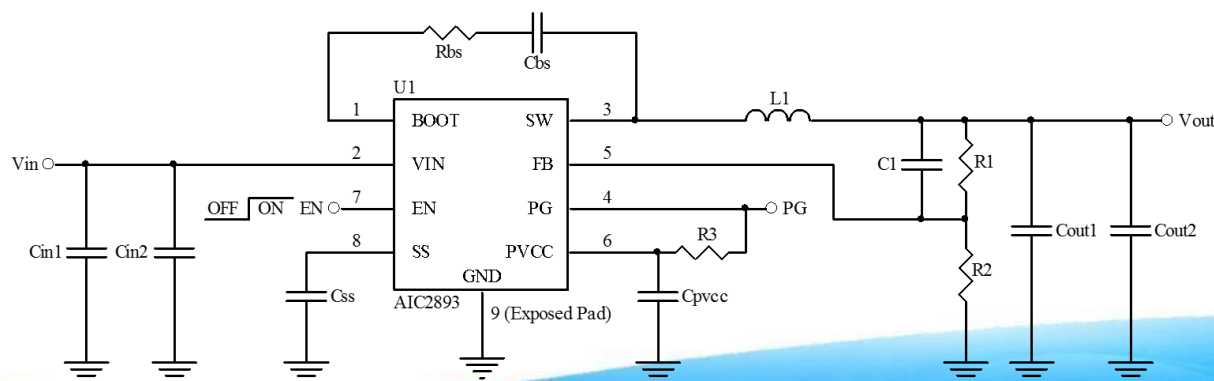
3A 30V 650kHz Synchronous Step-Down Converter

- 3A Continuous Output Current
- Wide 4.5V to 30V Operating Input Range
- Output Adjustable from 0.8V to 6V
- Up to 91% efficiency
- Low $R_{ds(on)}$ Internal Switch
- Adaptive On Time Control
- Fast Transient Response
- 650kHz Switching Frequency
- Programmable Soft Start
- Thermal Shutdown
- Cycle by Cycle Over Current Protection
- Short Circuit Protection
- Thermal Shutdown
- Available in SOP-8 exposed pad (Heat Sink) package

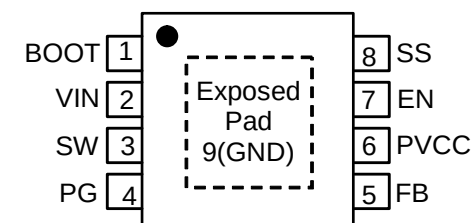
VIN = 4.5V~30V



Application Circuit



Package

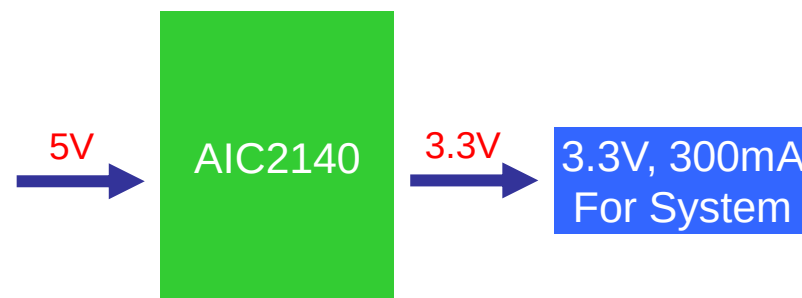


SOP-8 exposed pad

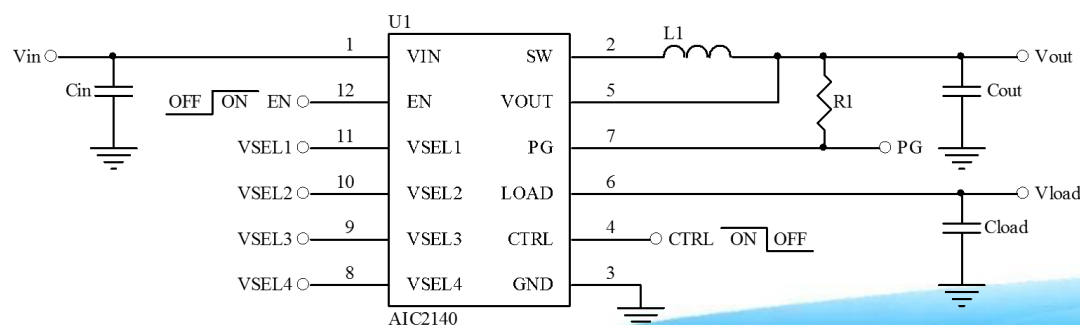
0.7 μ A Ultra Low Iq Step-Down Converter with AOT Control

- Typ. 700nA Quiescent Current
- 300mA Output Current Capability
- Adaptive On Time Control
- 2.5V to 5.5V Input Range
- Up to 90% Efficiency at 10 μ A Output Current
- 16 Selectable Output Voltages in 100mV Steps between 1.8V to 3.3V
- Up to 300mA Output Current
- Automatic Transition to No Ripple 100% Mode
- Low Output Ripple Voltage
- Slew Rate Controlled Load Switch
- Discharge Function on VOUT / LOAD
- Power Good Output
- Up to 2 MHz Switching Frequency
- Optimized for Operation with a Tiny 2.2 μ H Inductor and 10 μ F C_{OUT}
- Small 2.4 x 2.4 mm² DFN-12 Package

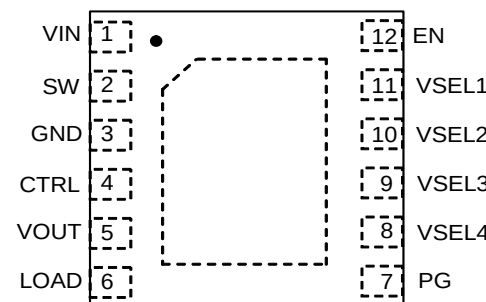
VIN= 2.5V~5.5V



Application Circuit



Package

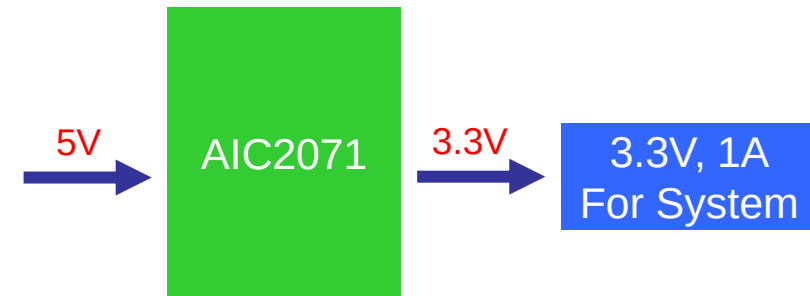


12-pin DFN 2.4mm x 2.4mm

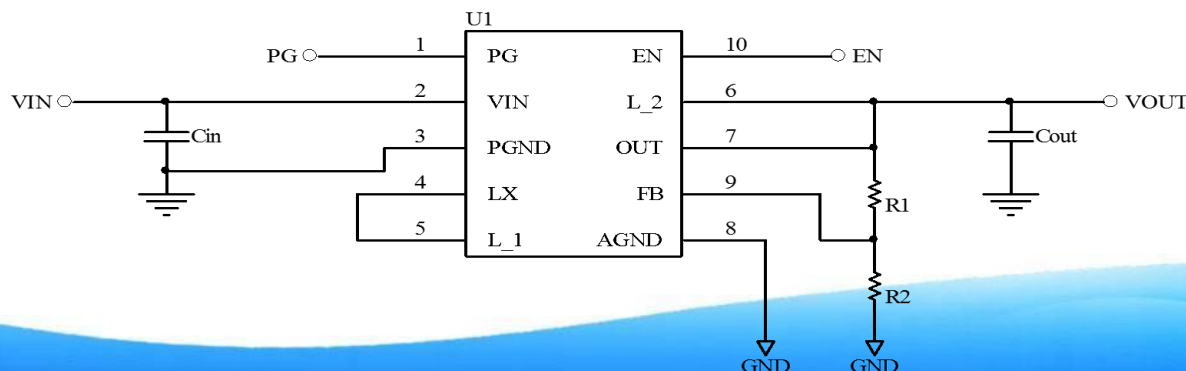
8uA Iq 1A 3MHz AOT Synchronous Step-Down Converter with Integrated Inductor

- 2.5V to 6V Input Voltage Range
- 1.0A Guaranteed Output Current
- Up to 92% Efficiency
- Low $R_{DS(ON)}$ Internal Switch : 110mΩ
- Stable with Low ESR Output Ceramic Capacitors
- No Schottky Diode Required
- 100% Duty Cycle in Low Dropout Operation
- 3MHz Operating Frequency
- Accurate Reference 0.6V Provides Low Output Voltages
- 8μA Quiescent Current
- Under Voltage Lockout
- Cycle by Cycle Over Current Protection
- Short Circuit Protection
- Over Temperature Protection
- Available in a DFN-10 (3x2.5x1.2-0.5 mm) Package

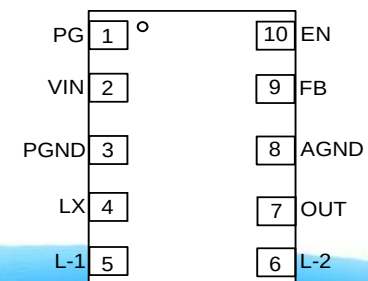
VIN = 2.5V~6V



Application Circuit



Package



10-pin DFN 3mm x 2.5mm

8uA Iq 1A 3MHz **AOT** Synchronous Step-Down Converter with Integrated Inductor

Parametrics	AIC2071	Torex XCL220	MPS MPM3810
Vin(Min)(V)	2.5	2.5	2.5
Vin(Max)(V)	6	5.5	6
Vout(Min)(V)	0.6	0.8	0.6
Vout(Max)(V)	$V_{IN}-0.2$	3.6	V_{IN}
Iout(Max)(A)	1	1	1.2
Switching Frequency(typ)(kHz)	3000	3000	3500
Iq(Typ)(uA)	8	25	17
Rds-on(m-ohm)	140/110	240/160	100/60
Inductor(uH)	0.47	1	0.47
Control Mode	AOT	COT	COT
Special Features	Enable Light Load efficiency Power Good	Enable Output Discharge	Enable Light Load Efficiency Power Good
Package	DFN-10 (3X2.5mm)	CL-2025 (2.5X2mm)	QFN-12 (3X2.5mm)

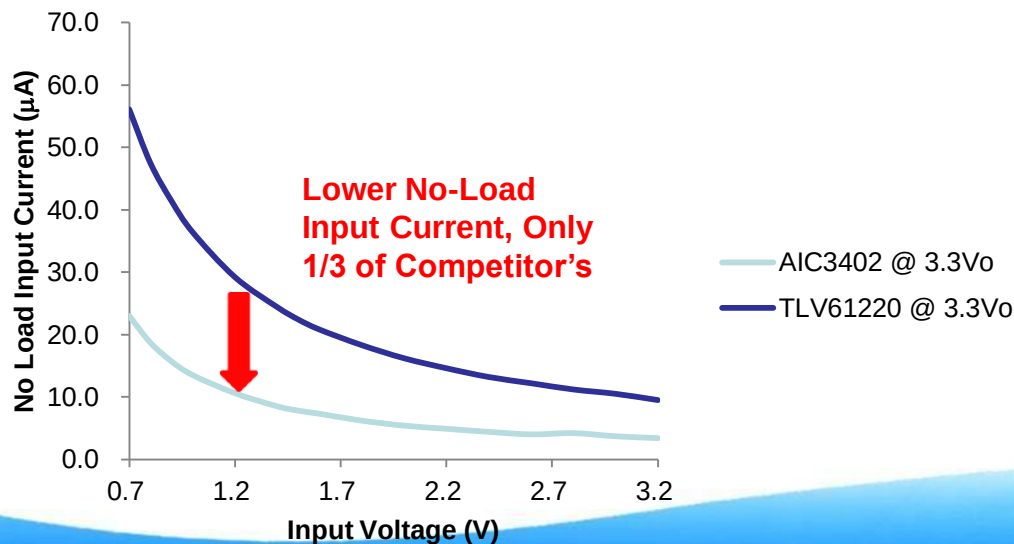
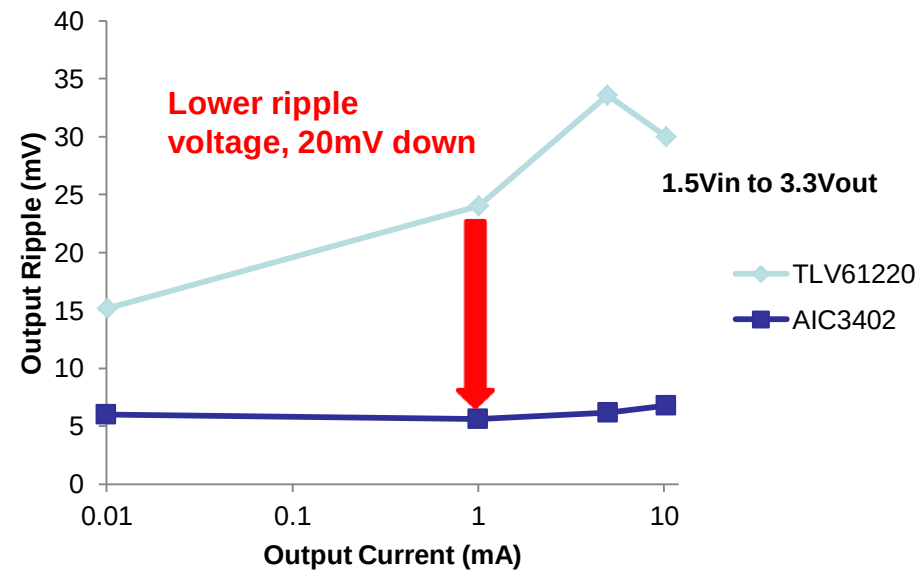
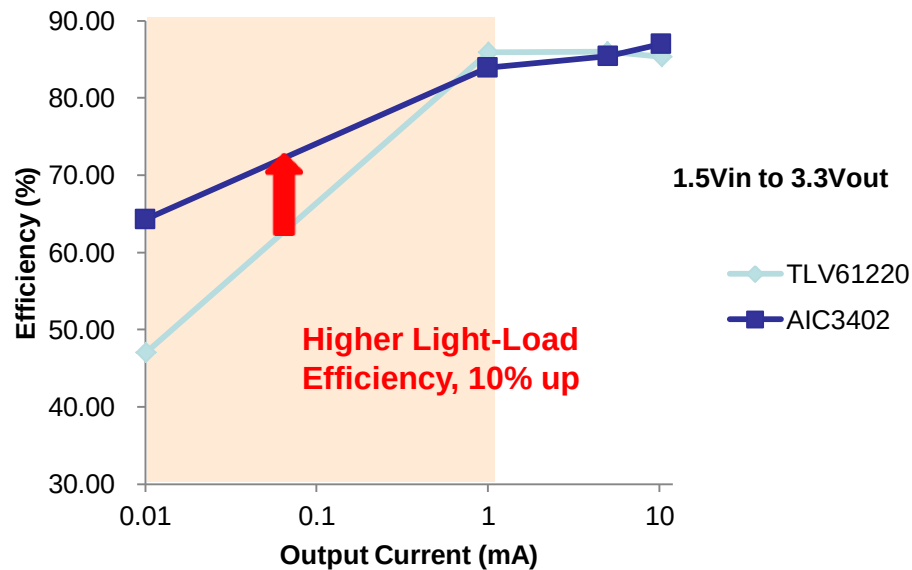
Boost Converters

AIC16xx/34xx/36xx Series

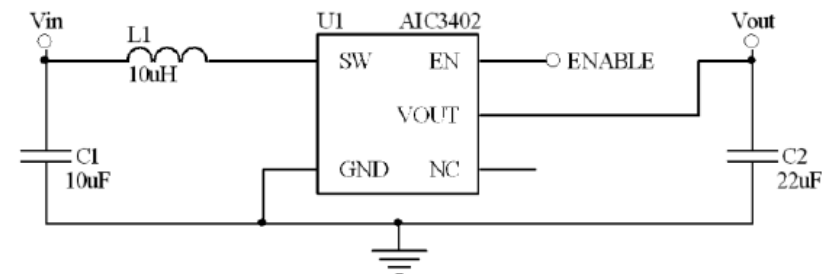
Switch Current Limit		≤1A	≤2A	≤3A	≤5A
Boost	Vout up to 30V	AIC1634 AIC1647 AIC1896			
	Vout up to 24V	AIC3634 AIC3643			
	Vout up to 5.5V	AIC3402 AIC3411/12 AIC3413	AIC3415	AIC3417	AIC3418 AIC3420(2.1A)
Output Current		≤1A	≤2A	≤3A	≤5A
Buck-Boost	Vin up to 5.5V	AIC2341 AIC2341A AIC2340	AIC2342	AIC2343	

Low Iq 3uA

Synchronous Step-Up DC/DC Converter



Application Circuit

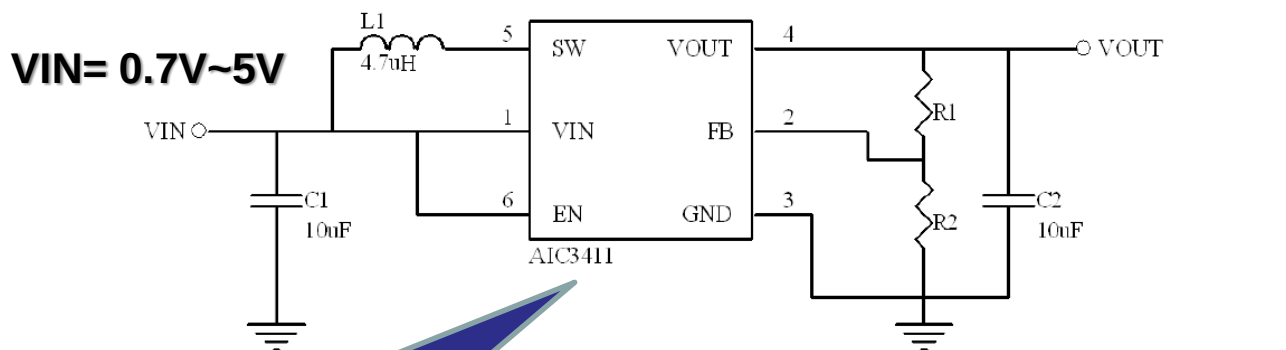


One Cell Step-Up DC/DC Converter with Enable Control

SC-70 Package Low IQ High Light Load Efficiency Synchronous Boost Converter

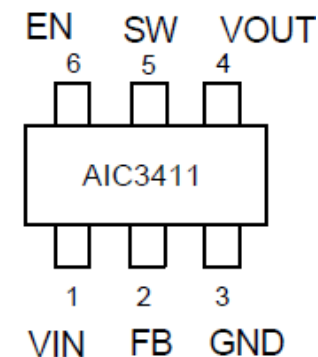
- Deliver 3.3V at 60mA from a Single Alkaline/Ni-MH or 3.3V at 120mA from Two Cells
- Up to 94% Efficiency
- Low Shutdown Current: $<1.0\mu\text{A}$
- Low Quiescent Current: **$7.5\mu\text{A}$**
- Low No-load Input Current (see Typical Performance Characteristics for detail)
- Start up Into Load at 0.7V Input Voltage
- **Output Disconnect** by Shutdown Function
- Anti-ringing Control for EMI Consideration
- Small **SC70-6** Package

Application Circuit



**TPS61220
Compatible**

Package



SC70-6

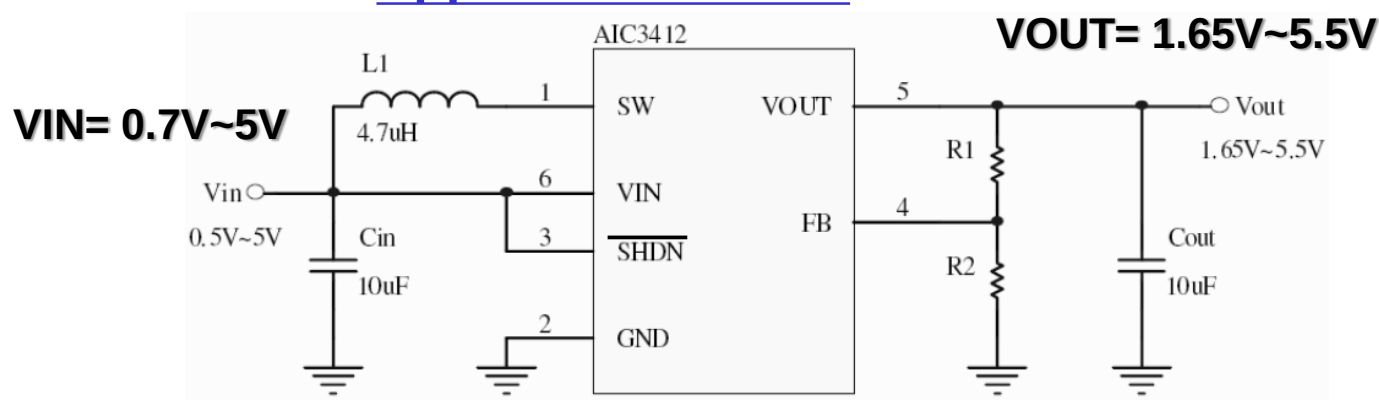
SC-70 Package Low IQ High Light Load Efficiency Synchronous Boost Converter

	AIC3411	TPS61220
Start up voltage	0.7V	0.7V
Vout range	1.65V~5.5V	1.8~5.5V
Quiescent current	7.5 μ A	5 μ A
Current limit	0.4A	0.4A
Control mode	Sync Constant Off Time/PSM	Sync Hysteretic Current Control
Max Efficiency	93%	95%
Package	SC-70	SC-70
True shut down	Yes	No
Diode required	No	No
Cin/Cout	10 μ F/10 μ F	10 μ F/10 μ F

Low IQ High Light Load Efficiency Synchronous Boost Converter

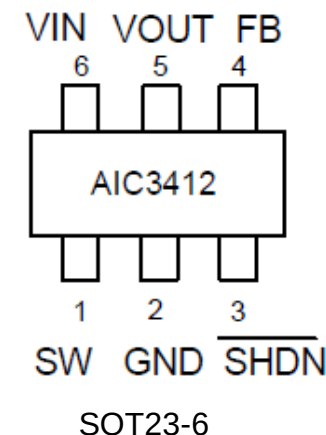
- Deliver 3.3V at 60mA from a Single Alkaline/Ni-MH or 3.3V at 120mA from Two Cells
- Up to 94% Efficiency
- Low Shutdown Current: $< 1\mu\text{A}$
- Low Quiescent Current: $12\mu\text{A}$.
- Low No-load Input Current (see Typical Performance Characteristics for detail)
- Output Disconnect by Shutdown Function
- Small SOT23-6 Package

Application Circuit



**TPS61070
Compatible**

Package

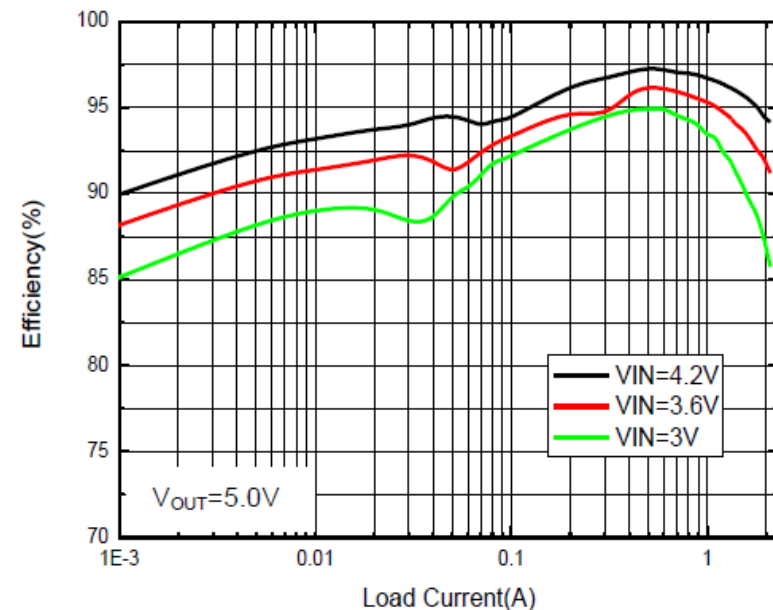


Low IQ High Light Load Efficiency Synchronous Boost Converter

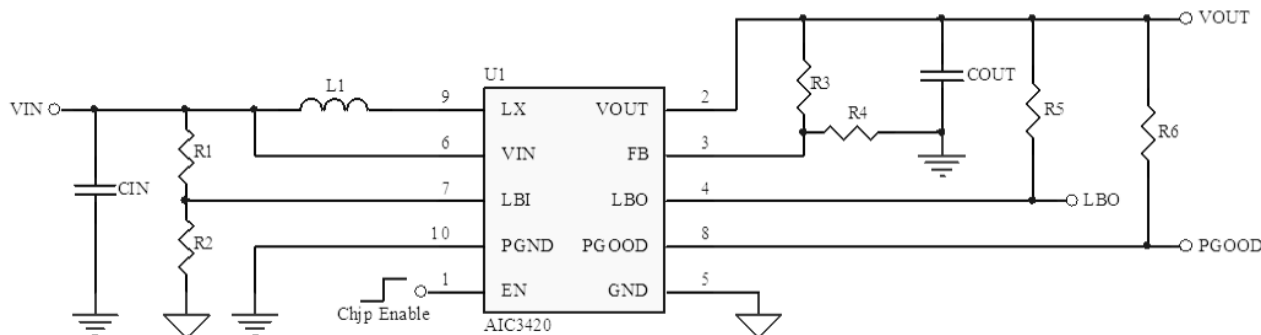
	AIC3412	TPS61070
Start up voltage	0.7V	0.9V
Vout range	1.65V ~5.5V	1.8~5.5V
Quiescent current	12μA	19μA
Current limit	0.48A	0.6A
Control mode	Sync Constant Off Time/PSM	Fixed Frequency PWM
Max Efficiency	94%	90%
Package	SOT23-6	DDC6(SOT23-6)
True shut down	Yes	Yes
Diode required	No	No
Cin/Cout	10uF/10uF	10uF/10uF

2.1A Synchronous Step-Up Converter

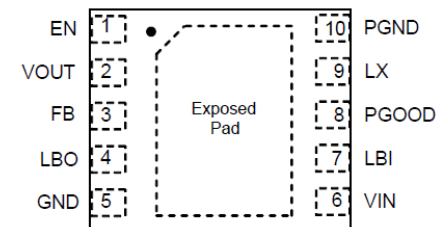
- Vin Start Up Voltage: 0.9V
- Output Voltage Range: from 2.5V to 5.5V.
- Up to 94% Efficiency
- Up to 2.1A Continuous Output Current
- Allow EN pin Floating
- Built-in current mode compensation
- Built-in Protection: Over Current, Over Voltage, Over Temperature
- Optional Active High/Low EN pin
- Logic Controlled Shutdown: $< 1\mu\text{A}$
- Output Disconnect by Shutdown Function
- Built-in Soft Start



Application Circuit

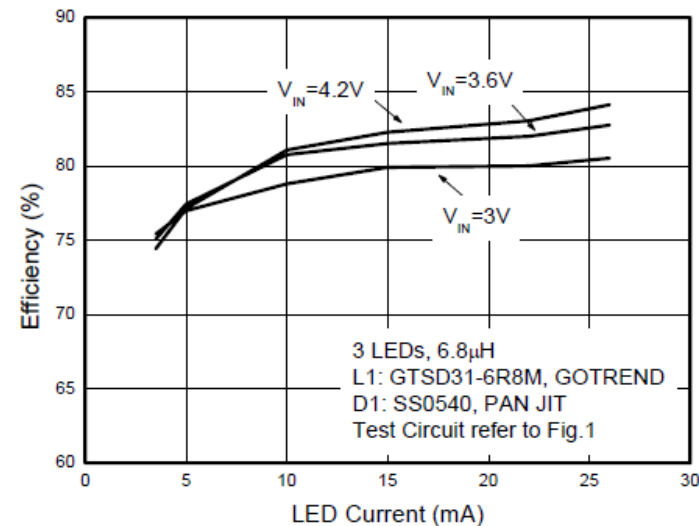


Package

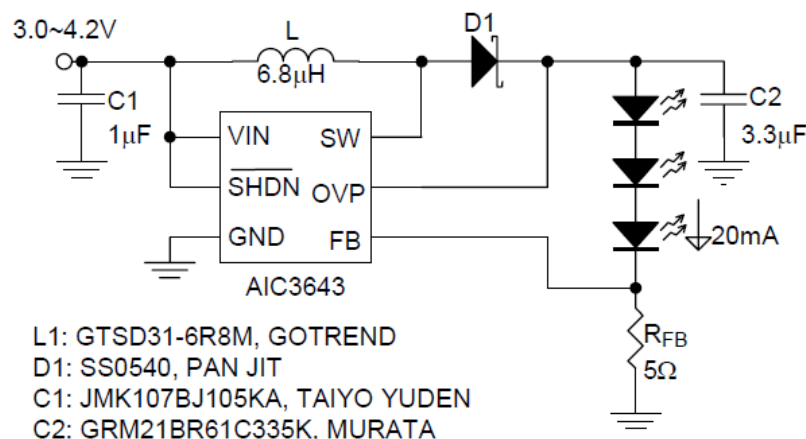


Built-in OVP White LED Step-Up Converter

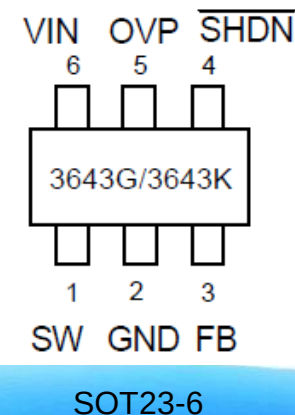
- Built-In Open Circuit Protection
- Over Voltage Protection
- Efficiency Up to 83% at $V_{IN}=4.2V$, 3LEDs, $I_{LED}=20mA$
- 1.2MHz Fixed Switching Frequency
- Drives Up to 5LEDs in series
- 2.5V to 5.5V Input Voltage
- Low Supply Current: 150 μA
- Matches LED Current
- Requires Tiny Inductor and Capacitors
- TSOT-23-6, and SOT-23-6 Packages



Application Circuit



Package



1A 2.5MHz Synchronous Buck-Boost DC/DC Converter

- Regulated Output with Input Voltage Above, Below, or Equal to The Output
- 1A Output Current at 3.3V in Step-Down Mode
- Up to 800mA Output Current at 3.3V in Boost Mode
- Single Inductor
- 2.5V to 5.5V Input Voltage Range
- Fixed and Adjustable Output Voltage Options from 1.8V to 5.5V
- Up to 95% Efficiency
- Stable with Low ESR Ceramic Capacitors
- No Schottky Diode Required
- Output Disconnect in Shutdown
- <1uA Shutdown Current
- <65uA Quiescent Current
- Power Saving Mode for Improved Light-Efficiency Operation
- Forced Fixed Frequency Operation Mode
- Load Disconnect During Shutdown
- Undervoltage Lockout Protection

VIN = 2.5V~5.5V

2.7V~4.2V

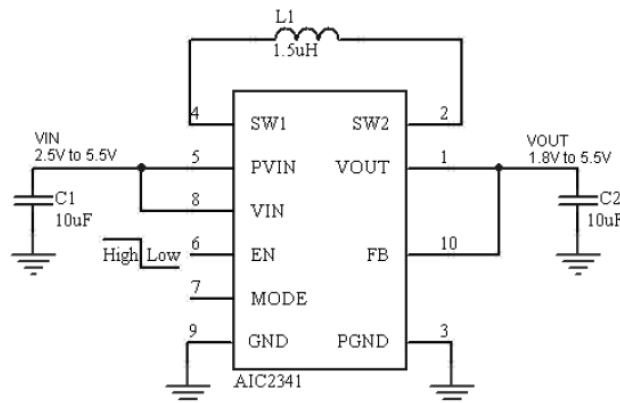
AIC2341

3.3V

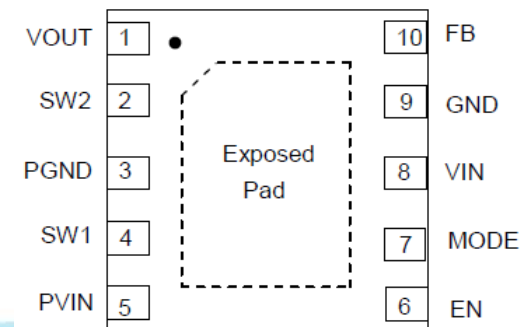
**3.3V, 1A
For System**

**TPS63000
MP2155
RT6150A
Compatible**

Application Circuit



Package



10-pin DFN 3mm × 3mm

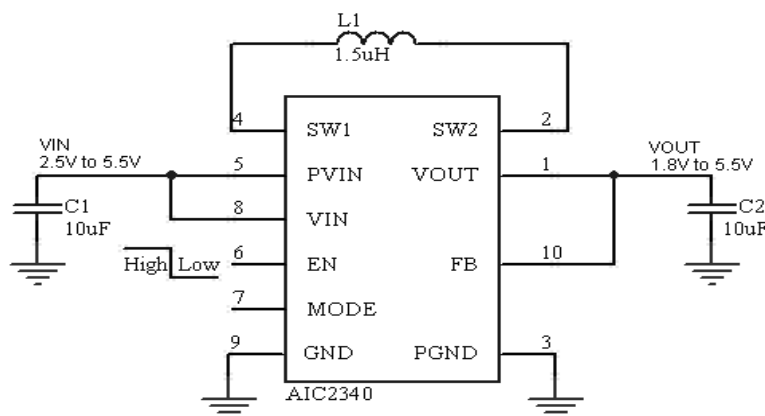
1A 2.5MHz Synchronous Buck-Boost DC/DC Converter

	AIC2341	TPS63000	MP2155	RT6150A
Input Voltage	2.5V~5.5V	1.8V ~5.5V	2V~5.5V	1.8V~5.5V
Vout range	1.8V~5.5V	1.2V ~5.5V	1.5V~5V	1.8V~5.5V
Quiescent current	50μA	40μA	80μA	60μA
Switching Frequency	2.5MHz	1.5MHz	1MHz	1MHz
Output Current	1A@Buck 0.8A@Boost	1.2A @Buck 0.8A@Boost	1A@Buck 1A @Boost	0.8A@Buck 0.8A@Boost
Current Limit	1.8A	1.8A	2.2A	1.6A
Package	DFN10	QFN10	QFN10	QFN10
Cin/Cout	10uF/10uF	10uF/10uF	10uF/22uF	10uF/20uF
Inductor	1.5uH	2.2uH	3.3uH	2.2uH

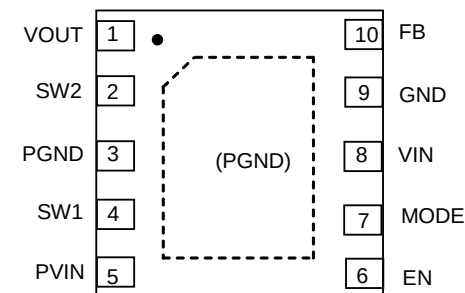
800mA Output, 2.5MHz Synchronous Buck-Boost DC/DC Converter

- Up to **96%** Efficiency
- **800mA** Output Current at 3.3V in Step Down Mode ($V_{IN} = 3.6V$ to $5.5V$)
- Up to **500mA** Output Current at 3.3V in Boost Mode ($V_{IN} > 2.4V$)
- Automatic Transition Between Step Down and Boost Mode
- Dynamic Input Current Limit
- Device Quiescent Current less than **35 μ A**
- Input Voltage Range: **1.8V to 5.5V**
- Fixed and Adjustable Output Voltage Options from 1.5V to 5.5V
- Power Save Mode for Improved Efficiency at Low Output Power
- Forced Fixed Frequency Operation at **2.5MHz**

Application Circuit



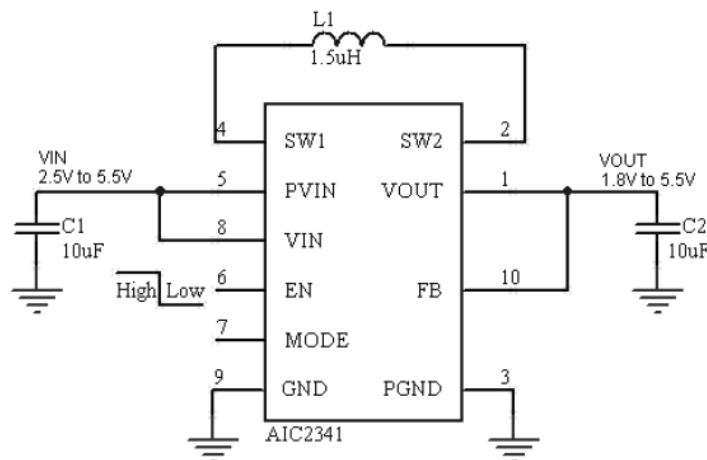
Package



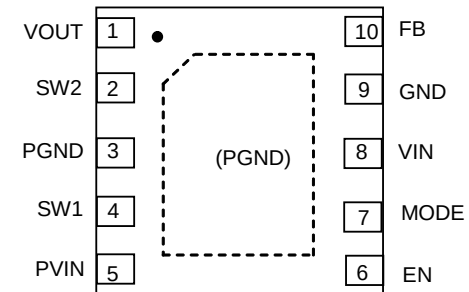
1.2A Output, 2.5MHz Synchronous Buck-Boost DC/DC Converter

- Up to **96%** Efficiency
- **1A(1.2A)** Output Current at 3.3V in Step Down Mode ($V_{IN} = 3.6V$ to $5.5V$)
- Up to **800mA** Output Current at 3.3V in Boost Mode ($V_{IN} > 2.4V$)
- Automatic Transition Between Step Down and Boost Mode
- Dynamic Input Current Limit
- Device Quiescent Current less than **35 μ A**
- Input Voltage Range: **1.8V to 5.5V**
- Fixed and Adjustable Output Voltage Options from 1.5V to 5.5V
- Power Save Mode for Improved Efficiency at Low Output Power
- Forced Fixed Frequency Operation at **2.5MHz**

Application Circuit



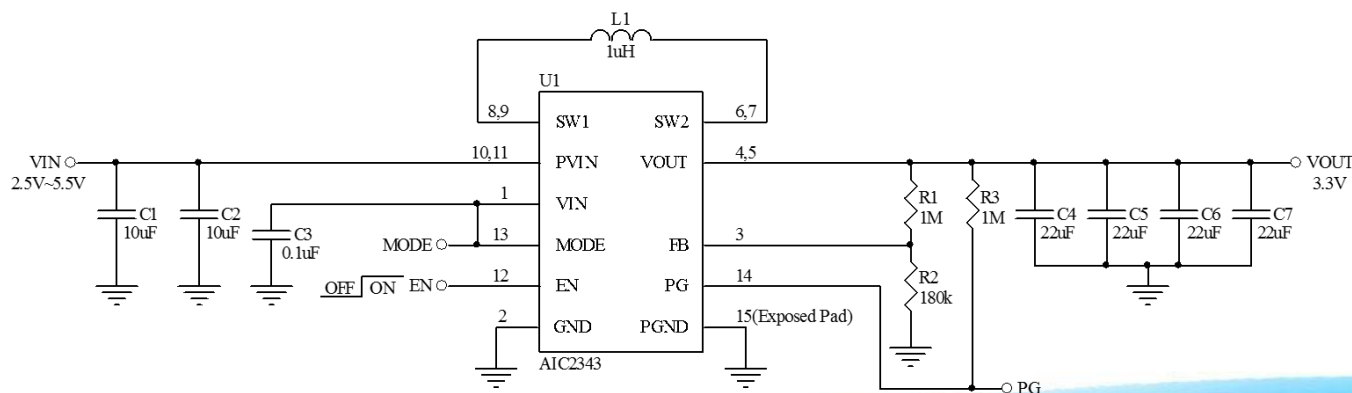
Package



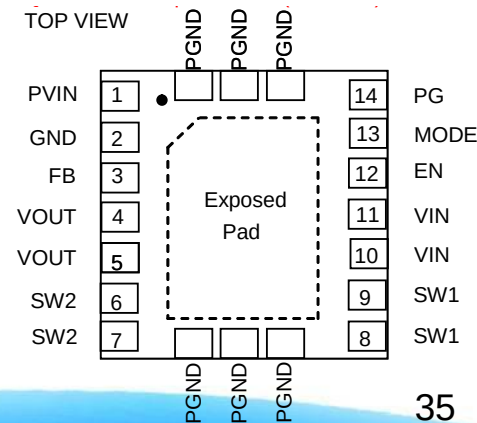
2A Output, 2.4MHz Synchronous Buck-Boost DC/DC Converter

- Up to **96%** Efficiency
- **2A** Output Current at 3.3V in Step Down Mode ($V_{IN} = 3.6V$ to $5.5V$)
- More than **1.5A** Output Current at 3.3V in Boost Mode ($V_{IN} > 2.5V$)
- Automatic Transition Between Step Down and Boost Mode
- Dynamic Input Current Limit
- Device Quiescent Current less than **50 μ A**
- Input Voltage Range: **1.8V to 5.5V**
- Fixed and Adjustable Output Voltage Options from 1.2V to 5.5V
- Power Save Mode for Improved Efficiency at Low Output Power
- Forced Fixed Frequency Operation at **2.4MHz**

Application Circuit



Package

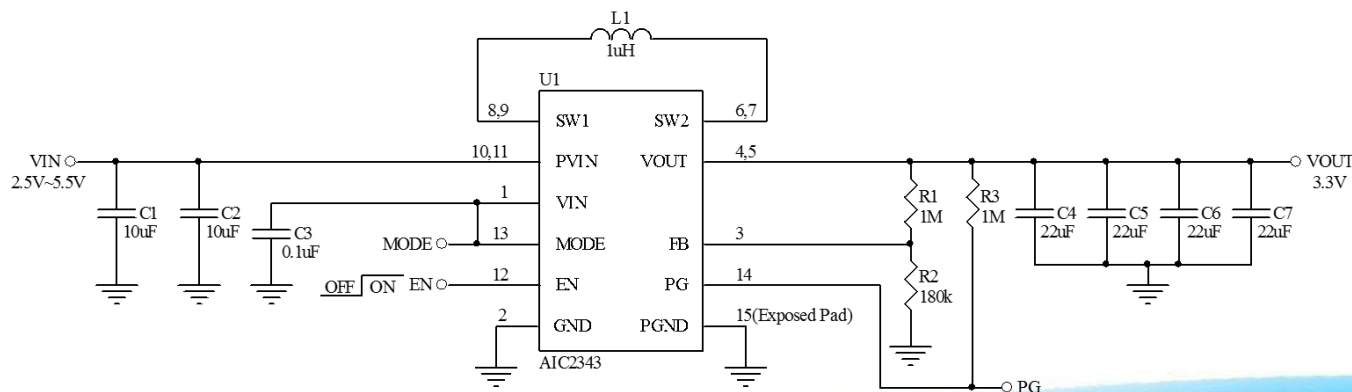


14pin QFN 3mm x 4mm

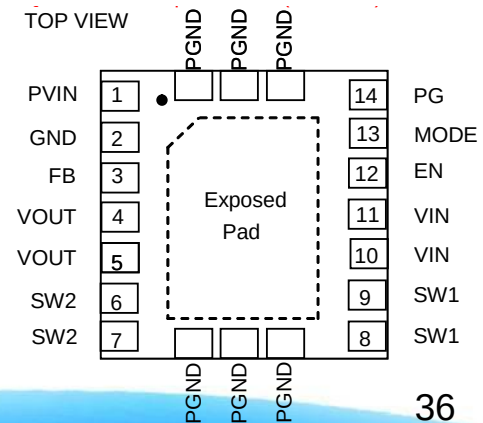
3A Output, 2.4MHz Synchronous Buck-Boost DC/DC Converter

- Up to **96%** Efficiency
- **3A** Output Current at 3.3V in Step Down Mode ($V_{IN} = 3.6V \text{ to } 5.5V$)
- More than **2A** Output Current at 3.3V in Boost Mode ($V_{IN} > 2.5V$)
- Automatic Transition Between Step Down and Boost Mode
- Dynamic Input Current Limit
- Device Quiescent Current less than **50 μ A**
- Input Voltage Range: **1.8V to 5.5V**
- Fixed and Adjustable Output Voltage Options from 1.2V to 5.5V
- Power Save Mode for Improved Efficiency at Low Output Power
- Forced Fixed Frequency Operation at **2.4MHz**

Application Circuit



Package



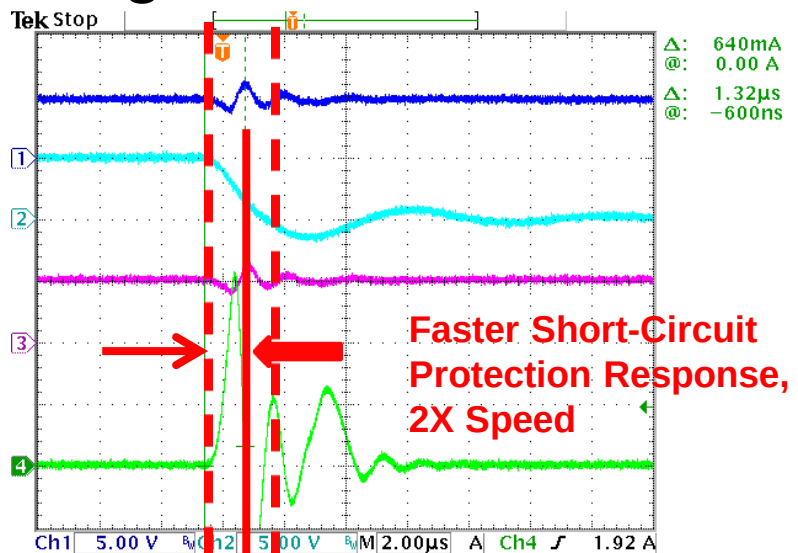
14pin QFN 3mm x 4mm

Power Switch

AIC61xx Series

Current Limit		Single Channel	Dual Channel
USB Power Switch	$\leq 1A$	AIC6161 AIC6151	AIC6186
	$\leq 2A$	AIC6162(1.4A) AIC6163 AIC6170 AIC6152	AIC6176(1.25A) AIC6178 AIC6188(1.55A)
	$\leq 3A$	AIC6156 AIC6164(3.2A)	Fast SCP 1.3uS, $\pm 7 \sim 15\%$ Curr. Accuracy
Regulatory USB Power Switch	$\leq 1A$	AIC6166 AIC6168	
Bare-Bone Power Switch	$\leq 1A$	AIC6191	AIC6196
	$\leq 2A$	AIC6193	AIC6198

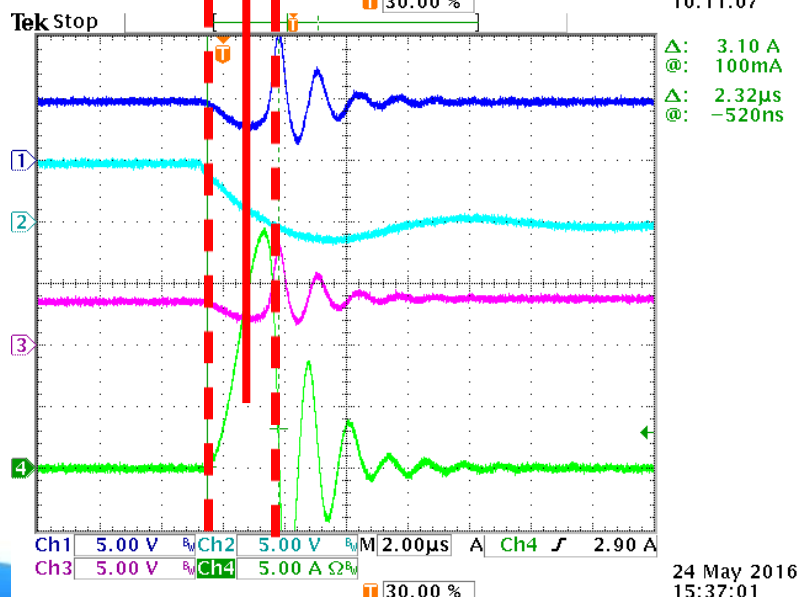
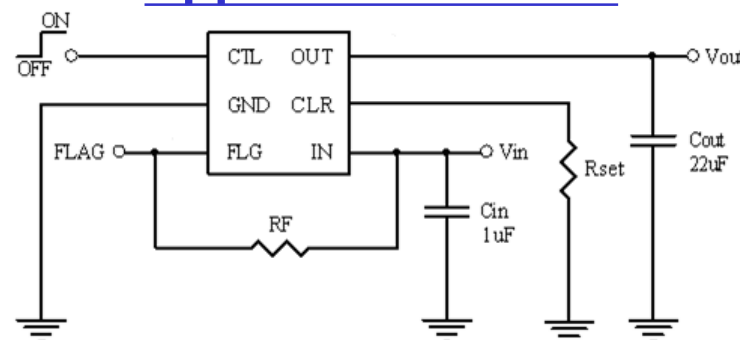
Single Channel USB Switch with Adjustable Current Limit



Faster Short-Circuit Protection Response, 2X Speed

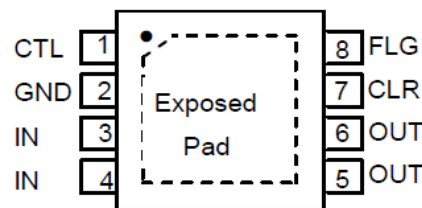
AIC6156 $V_{IN}=5V$, $I_{CL}=0.5A$, **Res. Time=1.32uS**
(CH1: Input Voltage, CH2: Output Voltage, CH3: FLG, CH4: Input Current)

Application Circuit

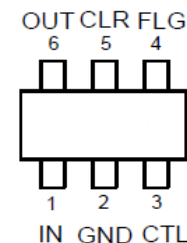


TPS2554 $V_{IN}=5V$, $I_{CL}=0.5A$, **Res. Time=2.32uS**
(CH1: Input Voltage, CH2: Output Voltage, CH3: FLG, CH4: Input Current)

Package



SOP-8 EP



SOT-23-6

USB Power Switch at 3A

	AIC	TI	Rohm	On-Semi
Part Number	AIC6156	TPS2554 TPS2555	BD82024 BD82025	NCP383
Short Circuit Response Time(uS)	1.3	1.5	5	2
Continuous Load Current (A)	0.5~3 (Adj.)	0.5~2.5 (Adj.)	2.5 (Adj.)	0.5~2.1 (Adj.)
MOS R-DS-ON (mohm)	60	73	90	45
Supply current (μA)	85	90	95	99
Input Voltage Range (V)	3.5~5.5	4.5~5.5	2.8~5.5	2.7~5.5
Current Limit Threshold (mA)	3060/ 3600/ 4140 1700/ 2000/ 2300 425/ 500/ 575	2550/ 2840 / 3100 2150/ 2430/ 2650 420/ 480/ 530 185/ 230/ 265	2100/2500/3300	2580/2800/3010 900/1000/1100 500/600/700
Current Limit Accuracy (%)	±15	±12	±15	±8
High Side Switch	NMOS	NMOS	NMOS	NMOS
Flag Delay Time (mS)	9	8.5	12	7
Output discharge	Yes	Yes	Yes	No
Package	SOP-8/SOT23-6	VSON	SOP8	UDFN10

USB Power Switch at 2A

	AIC	TI	Rohm	On-Semi
Part Number	AIC6152	TPS2553	BD2222G BD2242G BD2243G	NCP380 NCV380
Short Circuit Response Time(uS)	1.3	2	5	2
Continuous Load Current (A)	0.5~2 (Adj.)	0.75~1.7 (Adj.)	0.2~1.7 (Adj.)	0.5~2.1 (Adj.)
MOS R-DS-ON (mohm)	60	85	89	70
Supply current (μA)	85	100	120	90
Input Voltage Range (V)	3.5~5.5	2.5~6.5	2.8~5.5	2.5~5.5
Current Limit Threshold (mA)	1700/ 2000/ 2300 425/ 500/ 575	1610/ 1700 / 1800 1215/ 1295/ 1375 490/ 520/ 550 100/ 130/ 150	1566/1696/1826 911/1028/1145 112/212/313	2100/2250/2500 1000/1150/1300 500/580/650
Current Limit Accuracy (%)	±15	±6	±8	±12
High Side Switch	NMOS	NMOS	NMOS	PMOS
Flag Delay Time (mS)	9	8	7	8
Output discharge	Yes	No	BD2242/43	No
Package	SOT23-6	SOT23-6	SSOP6	TSOP-6

Stepper Motor Driver

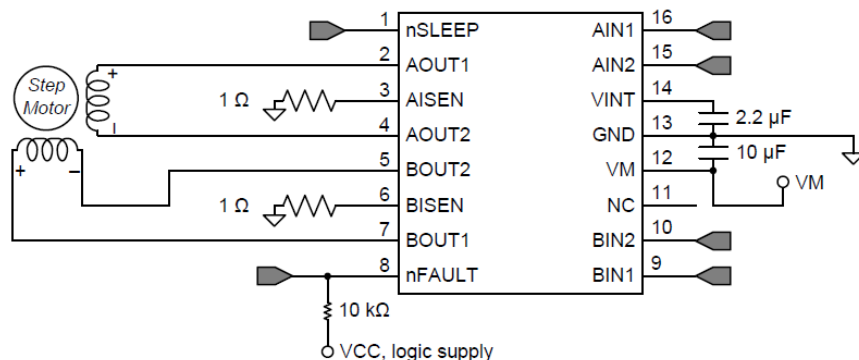
AIC88xx Series

Output Current		$\leq 700\text{mA}$	$\leq 1.5\text{A}$	$\leq 2.5\text{A}$
Surveillance	Vin up to 45V		AIC8863	
MFP	Vin up to 38V		AIC8811	AIC8818
POS & Toy	Vin up to 10V	AIC8833	AIC8835	

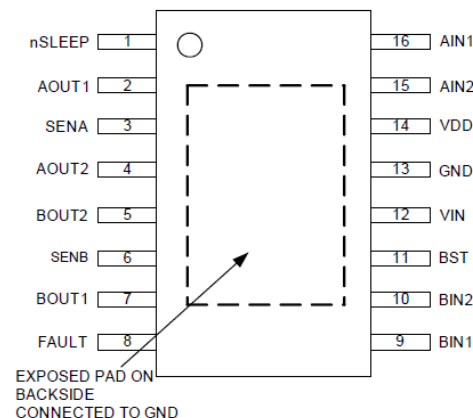
700mA Stepper Motor Driver with Integrated MOSFETs

- Wide 2.7V to 10.8V Input Voltage Range
- Two Internal Full-Bridge Drivers
- Low MOSFET On Resistance (HS + LS = 1735mohm)
- Output Current Capability at 0.7A RMS on HTSSOP, 0.6A RMS on QFN
- Easy PWM Interface
- Low Sleep Current: 1.6uA
- Thermal Shutdown and Under-Voltage Lockout Protection
- Over-Temperature Output Flag
- Thermally-Enhanced Surface-Mount Package

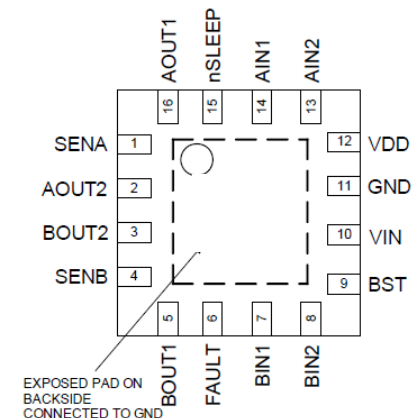
Application Circuit



Package



16pin TSSOP16-EP



16pin QFN 3mm x 3mm

700mA Stepper Motor Driver with Integrated MOSFETs

	AIC	Ti	MPS
Part Number	AIC8833	DRV8833C	MP6507
Output Current (mA)	700	700	700
MOS R-DS-ON (mohm)	1180/555	1180/555 I _{out} =200mA	460/395 I _{out} =500mA
Quiescent current (A)	1.7mA	1.7mA	1.1m
Sleep Mode Current (A)	1.6uA	1.6uA	1uA
Input Voltage Range (V)	2.7~10.8	2.7~10.8	2.7~15
Package	TSSOP16-EP QFN16 3X3	HTSSOP16 QFN16 3X3	TSSOP16-EP QFN16 3X3 QFN16 4X4

ULDO Linear Regulators

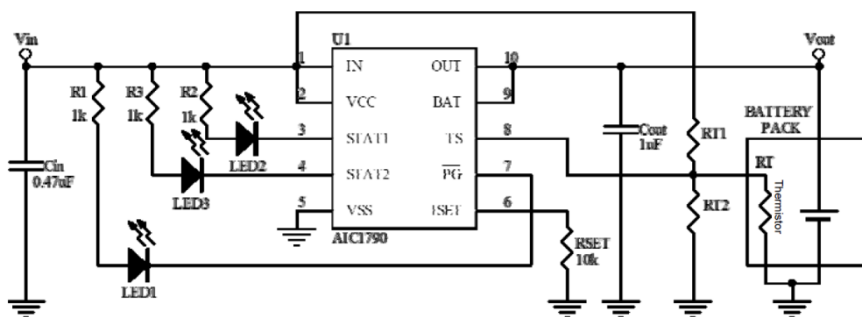
AIC11xx/12xx/17xx Series

Output Current		≤150mA	≤300mA	≤600mA	≤1A	≤2A
Single Channel	Vin up to 12V	AIC1730	AIC1731 AIC1734	AIC1733 AIC1735		
	Vin up to 9V	AIC1742	Low Noise 25uVrms			
	Vin up to 7V	Ultra Low Iq 3uA		AIC1748	AIC1190	AIC1221
Dual Channel	Vin up to 7V	AIC1701 AIC1746	AIC1702 AIC1747	PSRR 65dB@1kHz		
	Vin up to 7V		AIC1952	AIC1953		

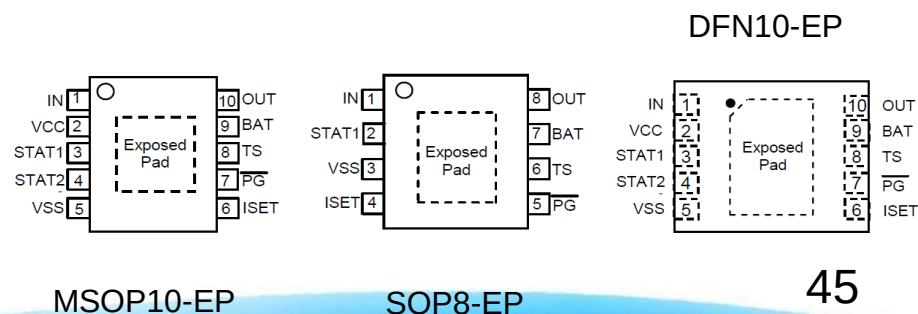
1 Cell Linear Lithium-Ion Battery Charger

- Complete Linear Charger for 1 Cell Lithium-Ion Battery
- Ideal for Low-Dropout Designs for Single-Cell Li-ion or Li-Pol Packs in Space Limited Applications
- No External MOSFET, Sense Resistor or Blocking Diode Required
- Up to 1000mA Charge Current
- Reverse Leakage Protection Prevents Battery Drainage
- Integrated Current and Voltage Regulation
- Charge Termination by 1/10 Full Charge Current
- Precharge With Safety Timer
- Status Outputs for LED or System Interface Indicates Charge and Fault Conditions
- Battery Insertion and Removal Detection

Application Circuit



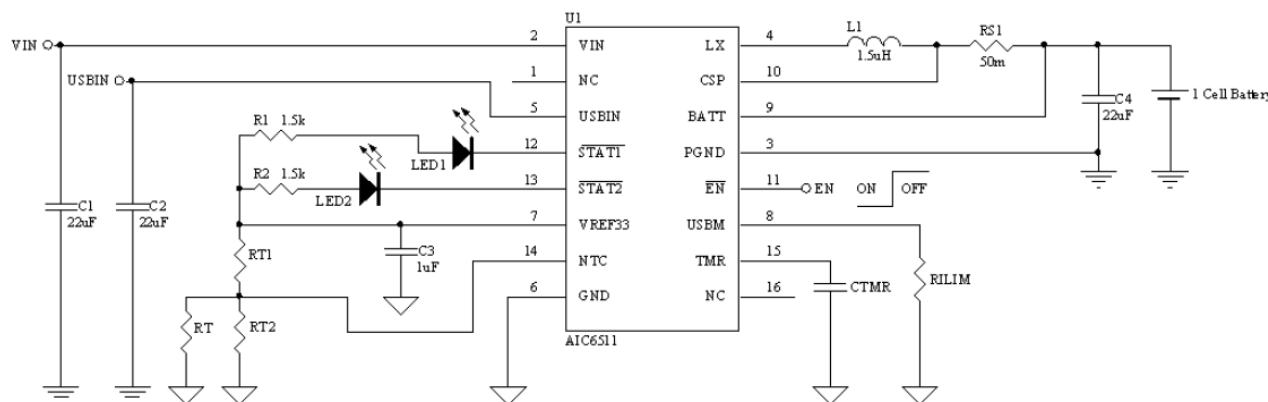
Package



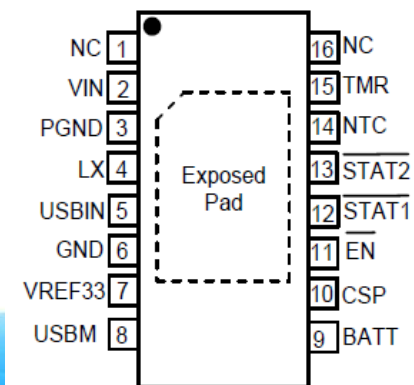
2A 1 Cell Linear Lithium-Ion Battery Switching Charger

- Complete Switching Charger for 1 Cell Lithium-Ion Battery
- No External MOSFET, Blocking Diode Required
- Up to 2A Programmable Charge Current
- Reverse Leakage Protection Prevents Battery Drainage
- Integrated Current and Voltage Regulation
- Charge Operation Indicators
- Programmable Safety Timer
- Status Outputs for LED or System Interface Indicates Charge and Fault Conditions
- Battery Insertion and Removal Detection
- Available in Tiny Thermally Enhanced TSSOP-16 Exposed Pad Package

Application Circuit



Package



Mastering the POWER

