

Adjustable Constant Current LED Driver AMC7136

General Description

The AMC7136 is a constant current regulator for driving LEDs with low quiescent current and low dropout voltage. The current is adjustable from 10mA to 400mA with an external resistor.

Only one external resistor is required to achieve a constant current LED driver.

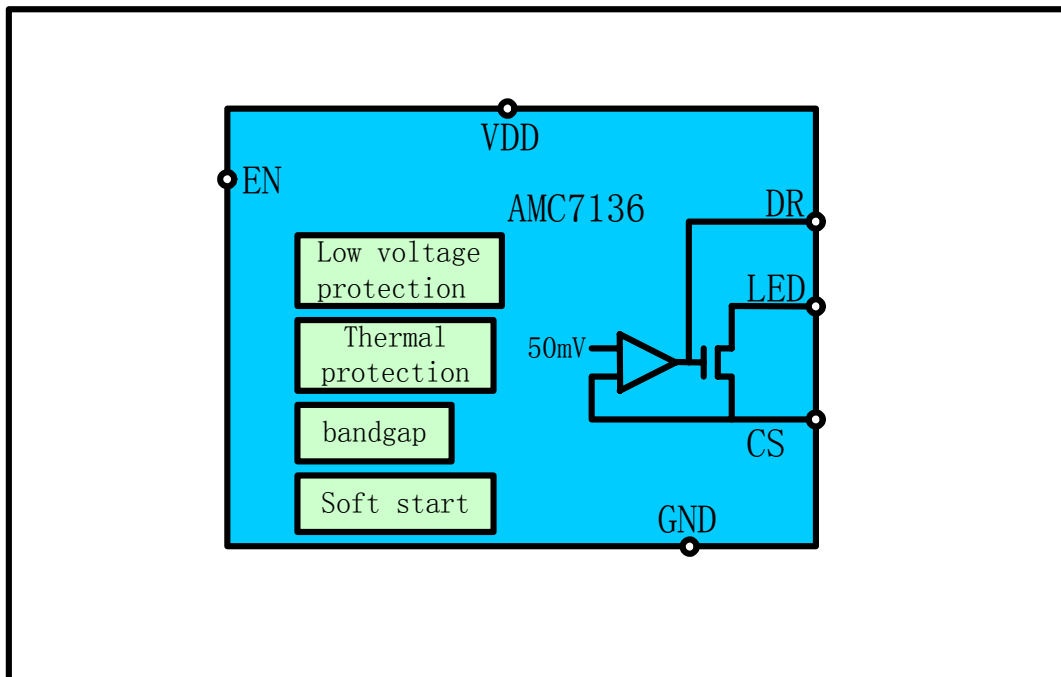
Soft start, thermal protection and low voltage protection are also provided.

A driver pin DR is provided for current and voltage extension. Adding an external NMOS or NPN transistor to this pin can extend current and voltage range.

Ordering Information

AMC7136

Block Diagram



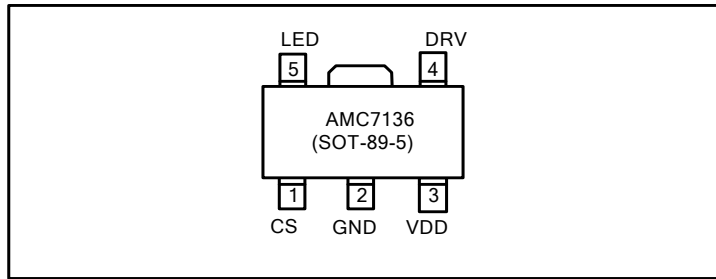
Features

- Sink current: 10mA to 400mA adjustable with an external resistor
- Current and voltage range extendable by adding an external NMOS or NPN transistor
- Power supply voltage: 2.7-6V
- Low drop out voltage: 100mV@350mA
- Low quiescent current: 250uA
- Thermal protection
- Soft start
- Low voltage protection: 2.5V
- SOT-89-5 package

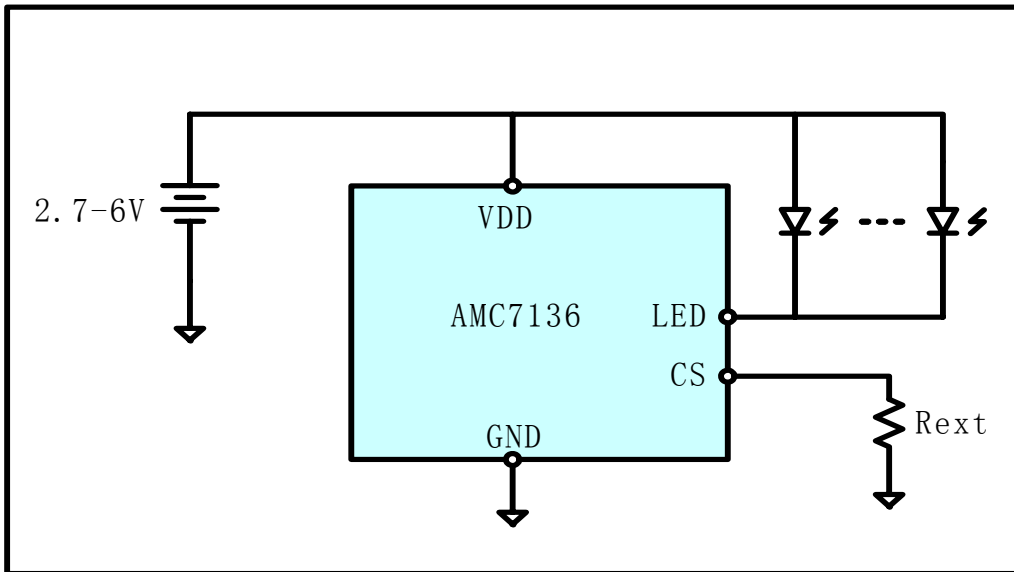
Applications

- Power Led driver

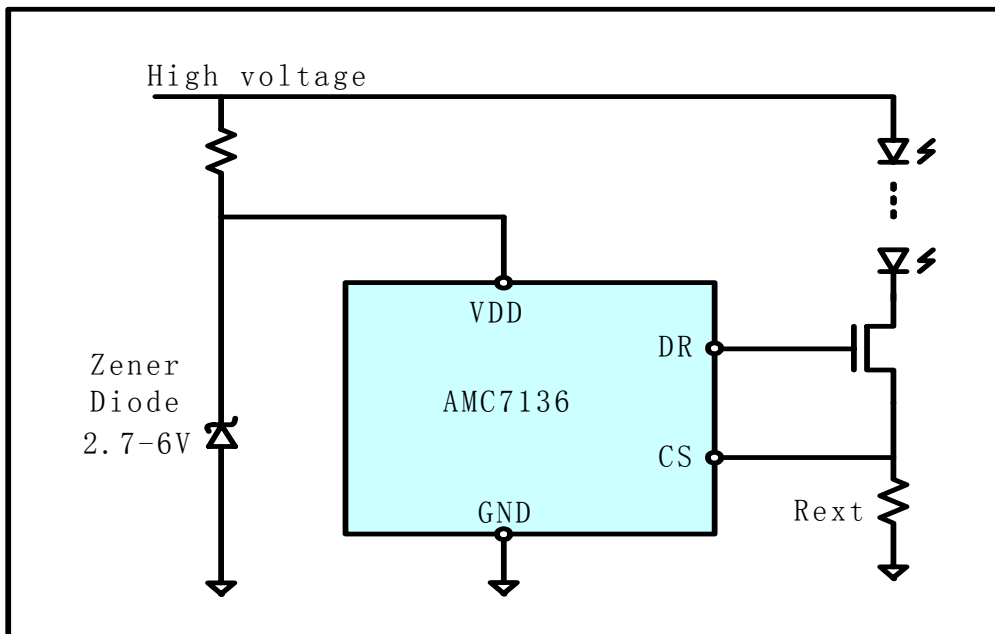
Pin Configurations



Typical Application



Low voltage Application



High voltage application

Absolute Maximum Ratings

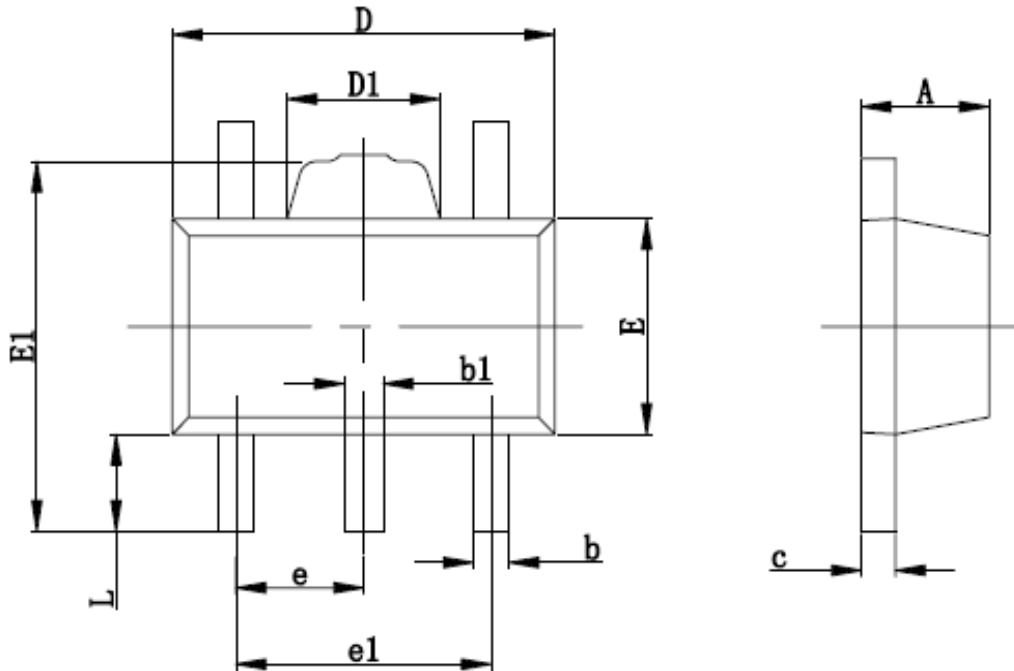
Type	Symbol	Description	Value	Unit
Voltage	V_{\max}	Maximum voltage on VDD, LED, EN, DR and CS pins	8	V
	$V_{\min-\max}$	Voltage range on LED pin	-0.3~VDD+0.3	V
Current	$I_{LED_{\max}}$	Maximum current on LED pin	500	mA
Power dissipation	$P_{SOT-89-5}$	Maximum Power dissipation for SOT-89-3 package	0.5	W
Thermal	$T_{\min-\max}$	Operation temperature range	-20~85	°C
	T_{storage}	Storage temperature range	-40~165	°C
ESD	VESD	ESD voltage for human body model	2000	V

Electronic Characteristics

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Sink current range		VDD=3.6	10		400	mA
VDD range		I _{LED} =350mA	2.7		6.0	V
CS voltage	V_{CS}		47	50	53	mV
Sink current accuracy	$\Delta I_{LED}/I_{LED}$	AMC5201X350	-5		5	%
Load regulation		V _{LED} =0.2V to 3V VDD=3.6V			2	mA/V
Line regulation		VDD=3V to 5.5V			2	mA/V
Output dropout voltage	V_{DO}			100		mV
Supply current	I_{DD}			250		uA
Low voltage protection			2.3	2.5	2.7	V

Package Information

SOT-89-5L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.360	0.560	0.014	0.022
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.400	1.800	0.055	0.071
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	2.900	3.100	0.114	0.122
L	0.900	1.100	0.035	0.043