

Constant Current LED Driver QX7135

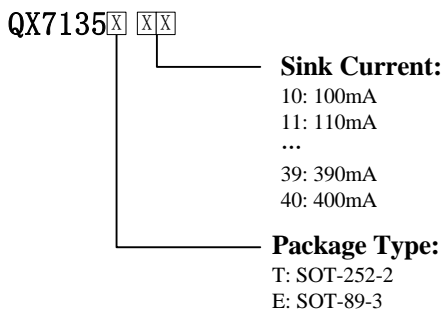
General Description

THE QX7135 is a constant current regulator for driving LEDs with low quiescent current and low dropout voltage. The current ranges from 100mA to 400mA with 10mA step.

No external component is required to achieve a constant current LED driver.

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

Ordering Information



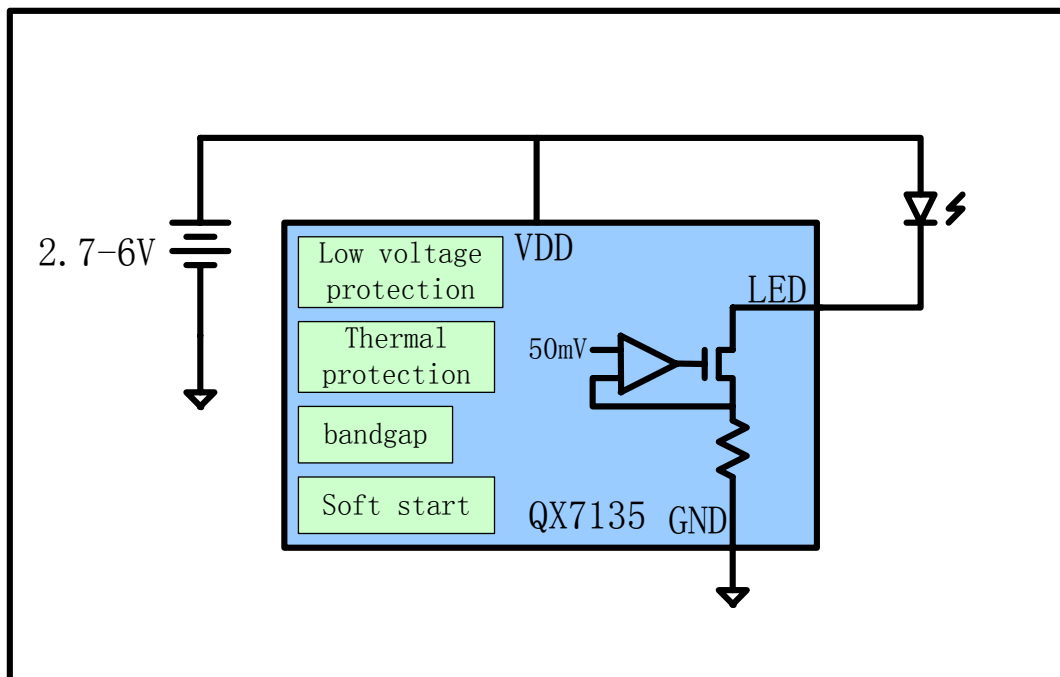
Features

- Sink current: 100mA to 400mA with 10mA step.
- Power supply voltage: 2.7-6V
- Low drop out voltage: 150mV@350mA
- Low quiescent current: 250uA
- Thermal protection
- Soft start
- Low voltage protection: 2.5V
- SOT-89-3 and TO-252-2 packages

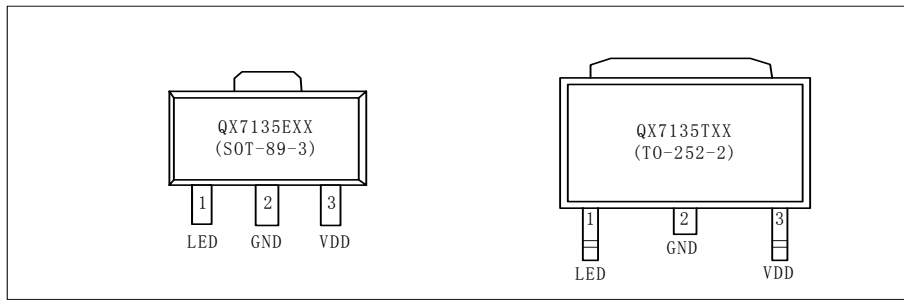
Applications

- Power Led driver

Block Diagram and Typical Applications



Pin Assignment



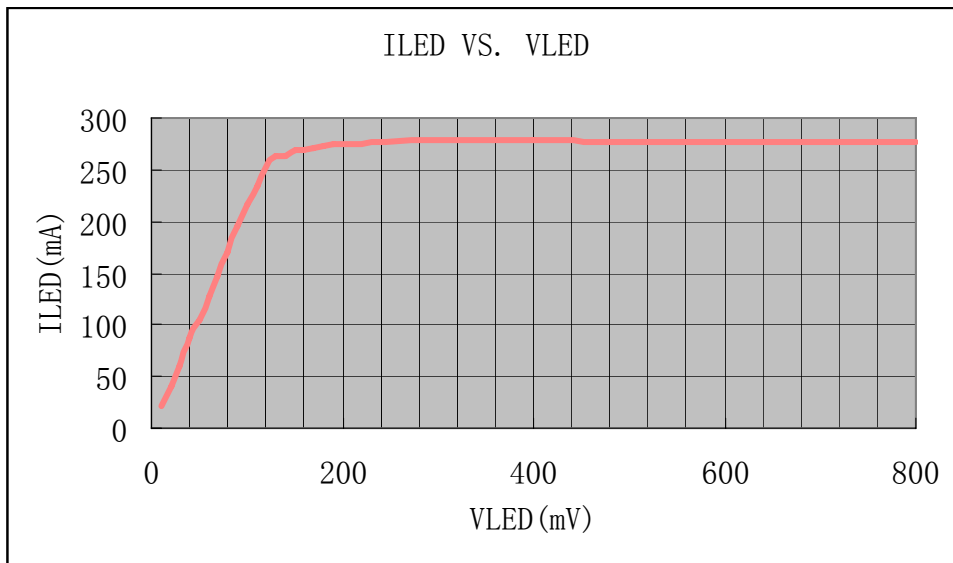
Absolute Maximum Ratings

Type	Symbol	Description	Value	Unit
Voltage	V_{max}	Maximum voltage on VDD and LED pins	10	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
	$P_{SOT-252-3}$	Maximum Power dissipation for SOT-252-2 package	0.8 W	
Thermal	$T_{min-max}$	Operation temperature range	-20~85	°C
	$T_{storage S}$	Storage temperature range	-40~165	°C
ESD	V_{ESD}	ESD voltage for human body model	2000	V

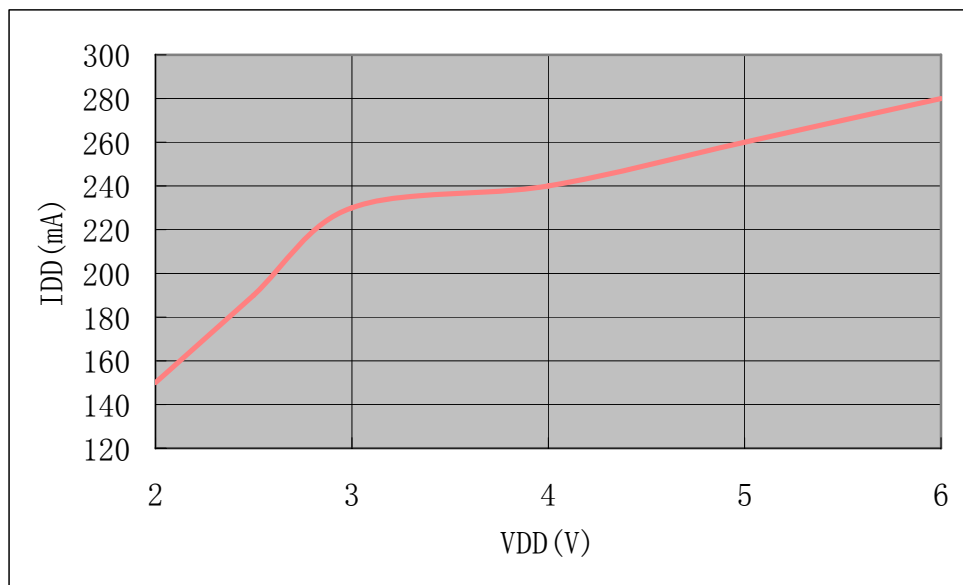
Electronic Characteristics

Parameter Symb	ol	Test Condition	Min	Typ	Max	Unit
Sink current range	VD	D=3.6	100		400	mA
VDD range	ILE	D=350mA	2.7		6.0	V
Sink current accuracy	$\Delta I_{LED}/I_{LED}$	-5			5	%
Load regulation	VLE	D=0.2V to 3V VDD=3.6V			2	mA/V
Line regulation	VD	D=3V to 5.5V			2	mA/V
Output dropout voltage	V_{DO}			150		mV
Supply current	I_{DD}			250		uA
Low voltage protection			2.3	2.5	2.7	V
Thermal protection				140		°C

Typical Dropout Performance

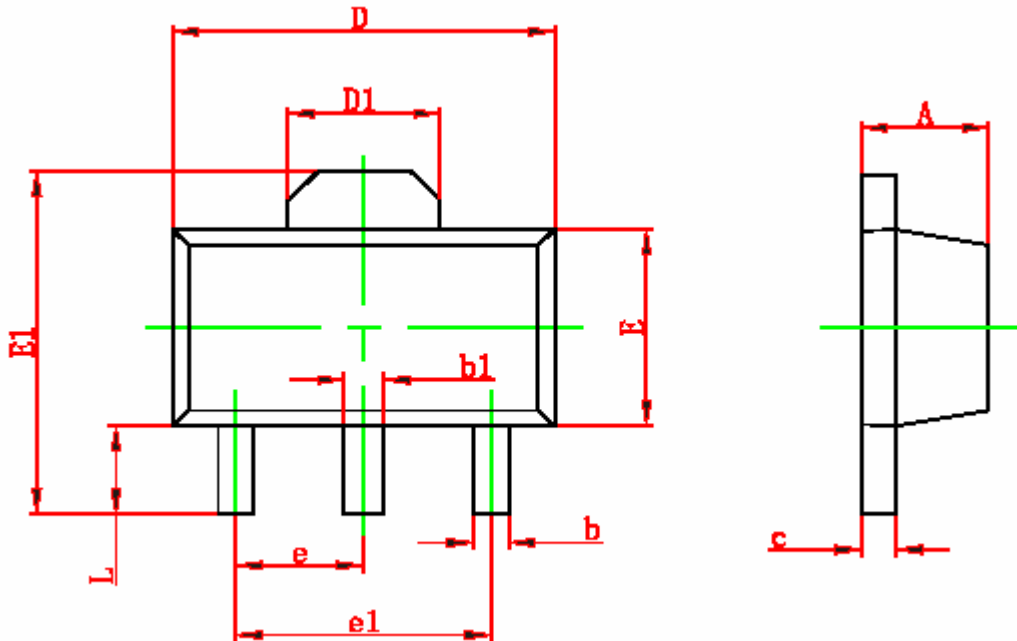


Typical Power Supply Current



Package Information

SOT-89-3 package outline dimensions



Symbol	Dimensions In millimeter		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 0.400		0.580	0.016	0.023
c 0.350		0.440	0.014	0.017
D 4.400		4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E 2.300		2.600	0.091	0.102
E1 3.940		4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L 0.900		1.200	0.035	0.047

TO-252-3 package outline dimensions

Unit: mm

