



UL68B

CMOS IC

HIGH ACCURACY LINEAR CONSTANT CURRENT LED DRIVER

DESCRIPTION

The UTC **UL68B** is a linear constant current IC with a built-in power MOSFET. The output current can be adjusted from 5mA to 60mA, and constant current accuracy up to $\pm 3\%$. The application scheme is simple and the cost is low. This device also incorporates temperature compensation and thermal shutdown functions.

FEATURES

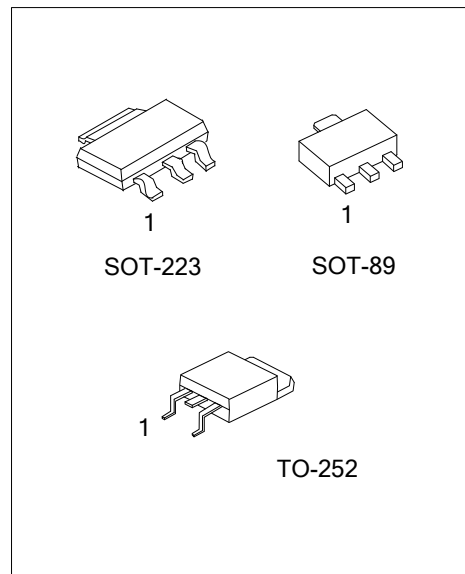
- * 5mA ~ 60mA Output Current
- * Up to $\pm 3\%$ Constant Current Accuracy
- * No EMC Problem
- * Temperature Compensate
- * Thermal Shutdown

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UL68BL-xx-AA3-R	UL68BG-xx-AA3-R	SOT-223	Tape Reel
UL68BL-xx-AB3-R	UL68BG-xx-AB3-R	SOT-89	Tape Reel
UL68BL-xx-TN3-R	UL68BG-xx-TN3-R	TO-252	Tape Reel

Note: xx: Output Voltage, refer to Marking Information.

<p>UL68BG-xx-AA3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AA3: SOT-223, AB3: SOT-89, TN3: TO-252</p> <p>(3) xx: Refer to Marking Information</p> <p>(4) G: Halogen Free and Lead Free, L: Lead Free</p>
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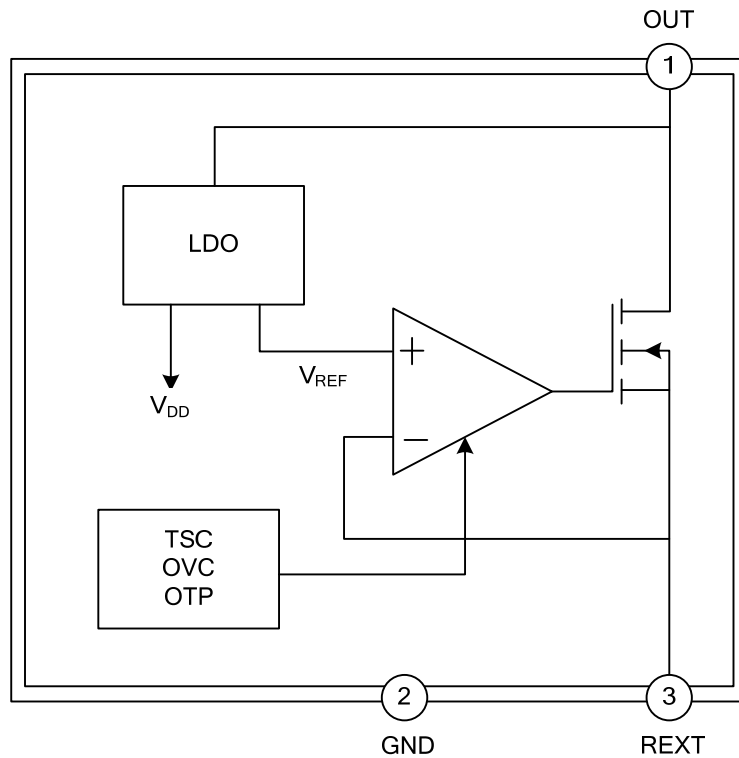
MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-89	25: 250mV 50: 500mV 60: 600mV	
SOT-223		
TO-252		

PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	OUT	Current Output Pin.
2	GND	Ground.
3	REXT	Output Current Setting Pin.

BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

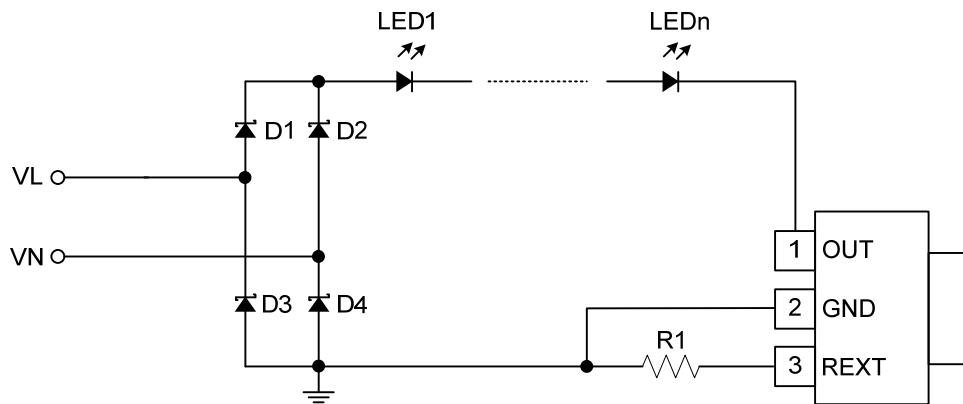
PARAMETER	SYMBOL	RATINGS	UNIT
OUT Pin Voltage	V_{OUT}	-0.5 ~ 450	V
OUT Pin Current	I_{OUT}	5 ~ 60	mA
Operating Junction Temperature	T_{OPT}	-40 ~ +150	°C
Storage Junction Temperature	T_{STG}	-50 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
OUT Pin Voltage	V_{OUT}	$I_{OUT}=30mA$			6.5	V	
OUT Pin Withstanding Voltage		$I_{OUT}=0$	450			V	
Output Current	I_{OUT}		5		60	mA	
Quiescent Current	I_Q	$V_{OUT}=10V$ REXT No Collection		0.16	0.25	mA	
REXT Pin Voltage	V_{REXT}	$V_{OUT}=10V$	UL68B-25	242	250	258	mV
			UL68B-50	485	500	515	mV
			UL68B-60	582	600	618	mV
V_{OVC}				70		V	
Output Current Error		$I_{OUT}=5 \sim 60mA$		±3		%	
Temperature Compensate Point	T_{CP}			135		°C	

■ TYPICAL APPLICATION CIRCUIT



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