

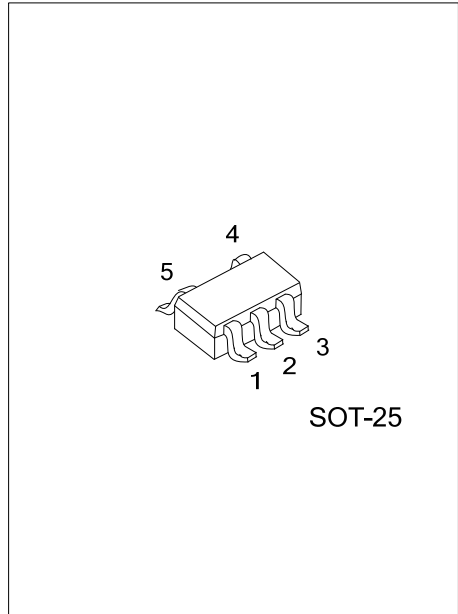


LR5XXYY

Advance

CMOS IC

150mA LOW-DROPOUT REGULATOR, ULTRALOW-POWER, IQ 500nA ,WITH PIN-SELECTABLE, DUAL-LEVEL OUTPUT VOLTAGE



DESCRIPTION

The V_{SET} pin allows the end user to switch between two voltage levels on-the-fly through a microprocessor-compatible input. This LDO is designed specifically for battery-powered applications where dual-level voltages are needed. With ultralow IQ (500nA), microprocessors, memory cards, and smoke detectors are ideal applications for this device.

FEATURES

- * Low IQ: 500 nA
- * 150mA, Low-Dropout Regulator With Pin-Selectable Dual Voltage Level Output
- * Low Dropout: 200 mV at 150mA
- * 3% Accuracy Over Load, Line, and Temperature
- * Available in Dual-Level, Fixed-Output Voltages From 1.5V to 4.2V
- * V_{SET} Pin Toggles Output Voltage Between Two Factory-Programmed Voltage Levels
- * Stable with a 1.0 μ F Ceramic Capacitor
- * Thermal Shutdown and Overcurrent Protection
- * CMOS Logic Level-Compatible Enable Pin

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
LR5XXYYL-AF5-R	LR5XXYYG-AF5-R	SOT-25	Tape Reel

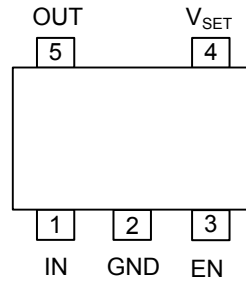
Note: XXYY: Output Voltage, refer to Marking Information.

<p>LR5XXYYG-AF5-R</p>	<p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p> <p>(4) Voltage Code at V_{OUTY}</p> <p>(5) Voltage Code at V_{OUTX}</p>	<p>(1) R: Tape Reel</p> <p>(2) AF5: SOT-25</p> <p>(3) G: Halogen Free and Lead Free</p> <p>(4) YY: refer to Marking Information</p> <p>(5) XX: refer to Marking Information</p>
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MARKING INFORMATION

PACKAGE	VOLTAGE CODE		MARKING
	XX	YY	
SOT-25	20: 2.0V	27: 2.7V	

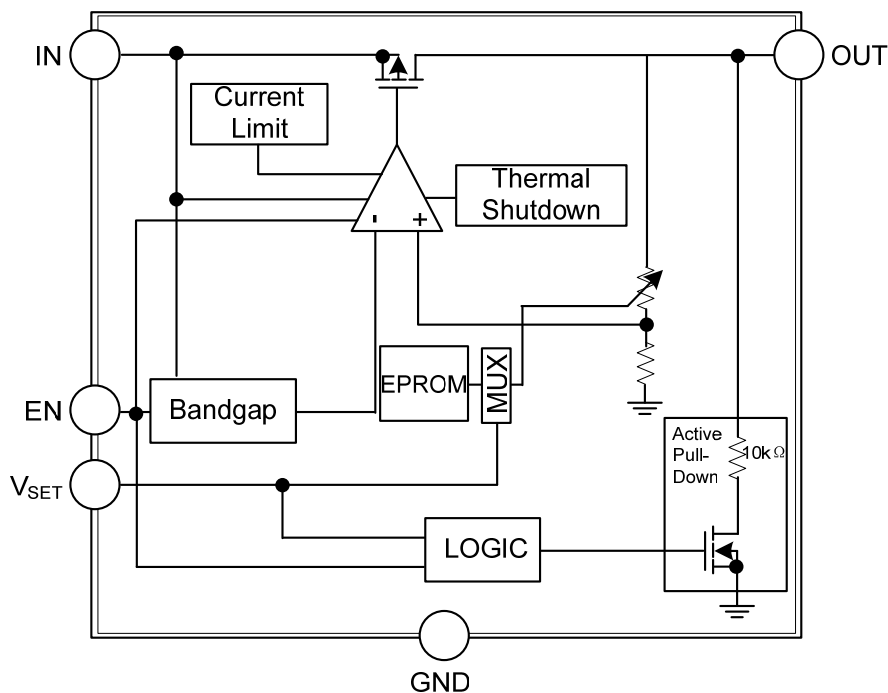
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	IN	Input pin. A small capacitor is needed from this pin to ground to assure stability. Typical input capacitor=1.0μF
2	GND	Ground pin
3	EN	Driving the enable pin (EN) over 1.2V turns on the regulator. Driving this pin below 0.4V puts the regulator into shutdown mode.
4	V _{SET}	V _{SET} for fixed voltage versions. Driving the select pin (V _{SET}) below 0.4V selects preset output voltage high. Driving the V _{SET} pin over 1.2V selects preset output voltage low.
5	OUT	Regulated output voltage pin.

BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	6	V
Enable and V_{SET} Voltage Range, V_{EN} and V_{VSET}		V_{IN}	V
Output Voltage Range	V_{OUT}	V_{IN}	V
Output Current	I_{OUT}	150	mA
Operating Temperature	T_{OPR}	-40 ~ +125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 ~ +150	$^\circ\text{C}$

Notes: 1. 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.
2. Device mounted on PCB.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	270	$^\circ\text{C/W}$
Junction to Case	θ_{JC}	90	$^\circ\text{C/W}$

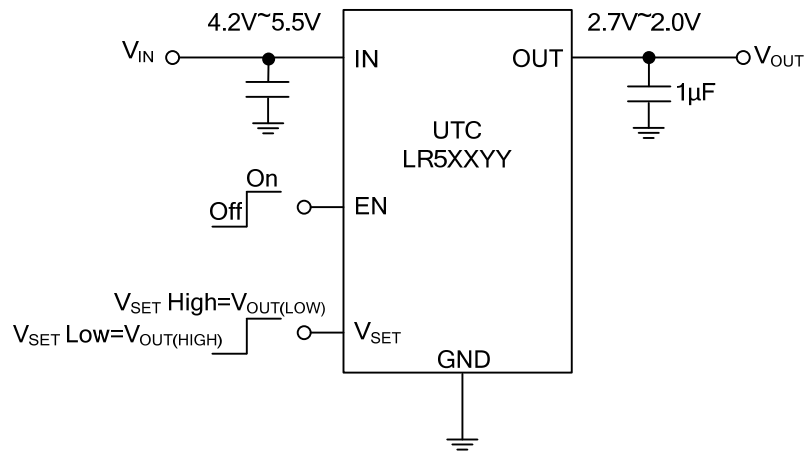
Note: Device mounted on PCB.

■ ELECTRICAL CHARACTERISTICS

($V_{IN}=V_{OUT}+0.5\text{V}$, $C_{IN}=C_{OUT}=1\mu\text{F}$, $T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V_{IN}		2.2		5.5	V
DC Output Accuracy	A_{CC}	$I_{OUT}=1\text{mA}$	-2		2	%
Dropout Voltage	V_{DIF}	$I_{OUT}=150\text{mA}$, $V_{OUT}=2.2\text{V}$		200	250	mV
Supply Current	I_{IN}	$I_{OUT}=0\text{mA}$		0.5	0.8	μA
Shutdown Current	I_{SHDN}	$V_{EN}=0\text{V}$, $2.2\text{V}\leq V_{IN}\leq 5.5\text{V}$		18	130	nA
Load Regulation	ΔV_{OUT}	$1\text{mA}\leq I_{OUT}\leq 100\text{mA}$		10		mV
Line Regulation	$\frac{\Delta V_{OUT}}{V_{OUT}\cdot\Delta V_{IN}}$	$I_{OUT}=10\text{mA}$ $V_{OUT}+0.5\text{V}\leq V_{IN}\leq 5.5\text{V}$		0.2	0.35	%/V
Output Current Limit	I_{LIM}	$V_{OUT}=0.9\times V_{OUT(nom)}$	150	230	400	mA
V_{SET} high (output $V_{OUT(Low)}$ selected), or EN high (enabled)	V_{HI}		1.2		V_{IN}	V
V_{SET} low (output $V_{OUT(High)}$ selected), or EN low (disabled)	V_{LO}		0		0.4	V
V_{SET} Pin Current	I_{VSET}	$V_{EN} = V_{VSET} = 5.5\text{V}$			70	nA
EN Pin Current	I_{EN}	$V_{EN} = V_{VSET} = 5.5\text{V}$			40	nA

■ TYPICAL APPLICATION CIRCUIT



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