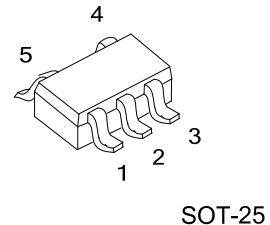


**LR1143****LINEAR INTEGRATED CIRCUIT****HIGH PSRR, LOW DROPOUT,
400mA ADJUSTABLE LDO
REGULATOR****■ DESCRIPTION**

The UTC **LR1143** is a CMOS-based 400mA voltage regulator with low supply current, low dropout, adjustable output voltage. The device offering high PSRR and low dropout. The quiescent current is as low as 35 μ A, further prolonging the battery life. The UTC **LR1143** also works with low-ESR ceramic capacitors, reducing the amount of board space necessary for power applications, critical in handheld wireless devices.

The UTC **LR1143** consumes typical 0.7 μ A in shutdown mode. The other features include low dropout voltage, high output accuracy, current limit protection, and enable/shutdown control.

**■ FEATURES**

- * Wide operating voltage range : 3.0V~5.5V
- * Adjustable output voltage
- * Enable/shutdown control
- * Low-noise for RF application
- * Ultra-Fast response in line/load transient
- * Current limit protection
- * Output only 1 μ F capacitor required for stability
- * High power supply rejection ratio

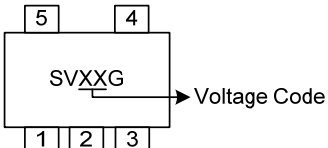
■ ORDERING INFORMATION

Ordering Number	Package	Packing
LR1143G-xx-AF5-R	SOT-25	Tape Reel

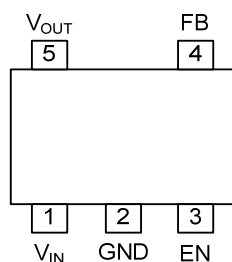
Note: xx: Output Voltage, refer to Marking Information.

LR1143G-xx-AF5-R	(1) Packing Type (2) Package Type (3) Output Voltage Code (4) Green Package	(1) R: Tape Reel (2) AF5: SOT-25 (3) xx: refer to Marking Information (4) G: Halogen Free and Lead Free
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MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-25	AD: ADJ	

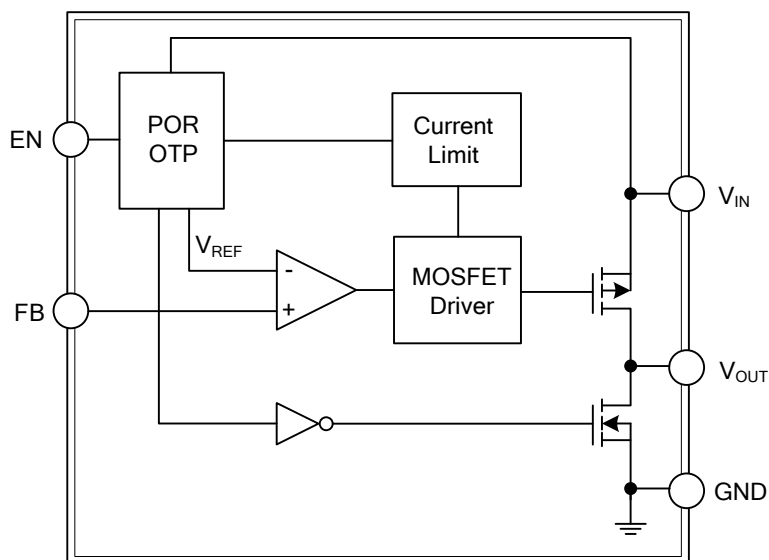
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V_{IN}	Voltage Input.
2	GND	Ground.
3	EN	Chip Enable (Active High).
4	FB	Output Voltage Feedback.
5	V_{OUT}	Voltage Output.

BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Input Voltage	V_{IN}	6	V
EN Input Voltage		6	V
Power Dissipation ($T_A=25^{\circ}\text{C}$)	P_D	0.4	W
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-65~+150	$^{\circ}\text{C}$

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.

■ RECOMMENDED OPERATING CONDITIONS (Note 3)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Ambient Temperature Range	T_A	-20		85	$^{\circ}\text{C}$

Note: The device is not guaranteed to function outside its operating conditions.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	260	$^{\circ}\text{C/W}$

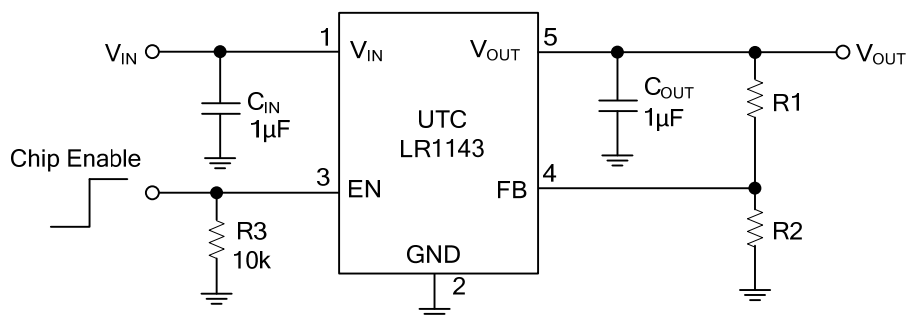
Note: θ_{JA} is measured in the natural convection at $T_A=25^{\circ}\text{C}$ on a low effective thermal conductivity test board of JEDEC 51-3 thermal measurement standard.

■ ELECTRICAL CHARACTERISTICS

($V_{IN}=3.7\text{V}$, $T_A=25^{\circ}\text{C}$, $C_{IN}=C_{OUT}=1\mu\text{F}$, $I_{OUT}=20\text{mA}$, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage Range		V_{IN}		3.0		5.5	V
Reference Voltage		V_{REF}		1.188	1.200	1.212	V
Quiescent Current		I_Q	$I_{OUT}=0\text{mA}$		35	50	μA
Shutdown Current		I_{SHDN}	$V_{EN}=0\text{V}$		0.7	1.5	μA
Current Limit		I_{LIM}	$3.0\text{V} \leq V_{IN} < 5.5\text{V}$	400	650		mA
Dropout Voltage		V_{DROP}	$I_{OUT}=400\text{mA}$		800		mV
Load Regulation		ΔV_{LOAD}	$1\text{mA} < I_{OUT} < 400\text{mA}$ $3.0\text{V} \leq V_{IN} < 5.5\text{V}$			1	%
Line Regulation		ΔV_{LINE}	$V_{IN}=(V_{OUT} + 0.5\text{V}) \sim 5.5\text{V}$, $I_{OUT}=1\text{mA}$		0.01	0.2	%/V
EN Threshold	Logic-Low Voltage	V_{IL}		0		0.6	V
	Logic-High Voltage	V_{IH}		1.6		5.5	V
EN Pin Current		I_{EN}			0.1	1	μA
FB Pin Current		I_{FB}			0.1	1	μA
Power Supply Rejection Ratio		PSRR	$f=1\text{kHz}$, $I_{OUT}=10\text{mA}$		67		dB
			$f=10\text{kHz}$, $I_{OUT}=10\text{mA}$		56		dB
Output Noise Voltage		V_{ON}	$V_{OUT}=1.5\text{V}$, $C_{OUT}=1\mu\text{F}$, $I_{OUT}=0\text{mA}$		30		μV_{RMS}

■ TYPICAL APPLICATION CIRCUIT



$$V_{OUT} = V_{FB} \left(1 + \frac{R1}{R2}\right)$$

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