

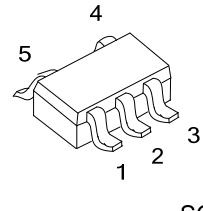
LR1143**LINEAR INTEGRATED CIRCUIT**

**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.



SOT-25

■ 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

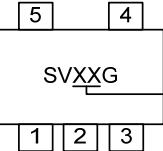
■ ORDERING INFORMATION

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

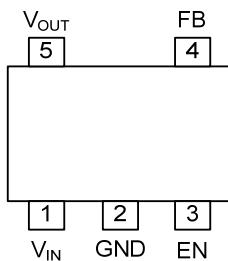
Note: xx: Output Voltage, refer to Marking Information.

LR1143G-xx-AF5-R 	(1)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	 SVXXG → Voltage Code

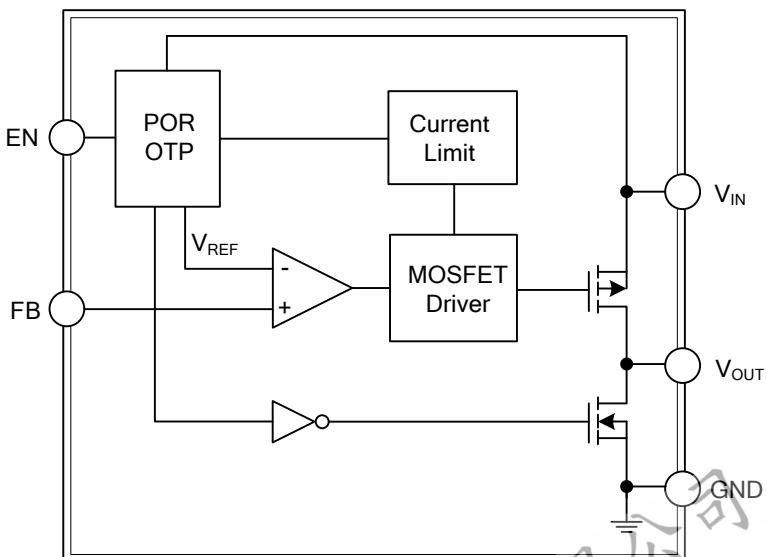
■ PIN CONFIGURATION



■ 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	°C
Storage Temperature	T _{STG}	-65~+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.

■ RECOMMENDED OPERATING CONDITIONS (Note 3)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Ambient Temperature Range	T _A	-20		85	°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	°C/W

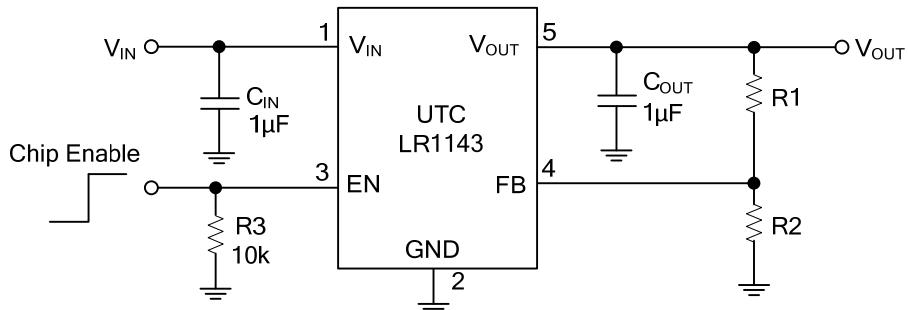
Note: θ_{JA} is measured in the natural convection at T_A=25°C on a low effective thermal conductivity test board of JEDEC 51-3 thermal measurement standard.

■ ELECTRICAL CHARACTERISTICS

(V_{IN}=3.7V, T_A=25°C, C_{IN}=C_{OUT}=1μF, I_{OUT}=20mA, 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} =0mA		35	50	μA
Shutdown Current	I _{SHDN}	V _{EN} =0V		0.7	1.5	μA
Current Limit	I _{LIM}	3.0V≤V _{IN} <5.5V	400	650		mA
Dropout Voltage	V _{DROP}	I _{OUT} =400mA		800		mV
Load Regulation	ΔV _{LOAD}	1mA<I _{OUT} <400mA 3.0V≤V _{IN} <5.5V			1	%
Line Regulation	ΔV _{LINE}	V _{IN} =(V _{OUT} +0.5V)~5.5V, I _{OUT} =1mA		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=1kHz, I _{OUT} =10mA		67		dB
		f=10kHz, I _{OUT} =10mA		56		dB
Output Noise Voltage	V _{ON}	V _{OUT} =1.5V, C _{OUT} =1μF, I _{OUT} =0mA		30		μV _{RMS}

■ TYPICAL APPLICATION CIRCUIT



$$V_{OUT} = V_{REF} \left(1 + \frac{R_1}{R_2}\right)$$

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