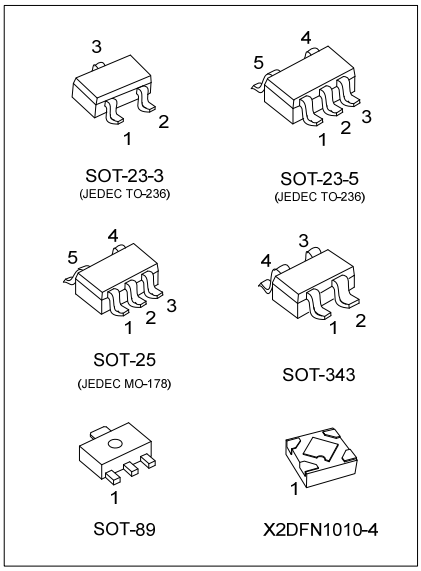
LR9282

CMOS IC

300mA LDO REGULATOR



■ DESCRIPTION

The UTC **LR9282** is a typical LDO (linear regulator) with the features of high output voltage accuracy, low supply current, low ON-resistance. Internally, there're many functions of UTC **LR9282** which can be seen in the block figure. There are a voltage reference unit, an error amplifier, resistor-net for voltage setting, a current limit circuit, and a chip enable circuit in each UTC **LR9282**.

The output voltage of these ICs is fixed with high accuracy.

■ FEATURES

* Supply current (TYP=1μA)
* Output voltage accuracy (±1%)
* Output voltage range (0.8V~5V)
* Dropout voltage (TYP=290mV)(I_{OUT}=100mA, V_{OUT}=1.8V Output type)
* Line regulation (TYP=0.2%/V)
* Built-in fold-back protection circuit (TYP=15mA) (Current at short mode)

■ ORDERING INFORMATION

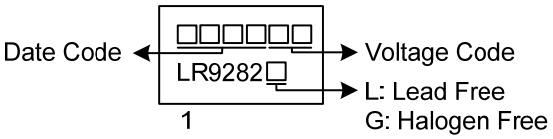
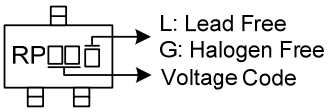
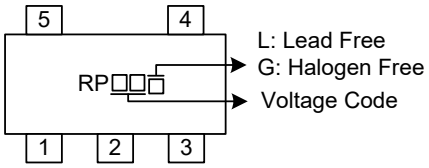
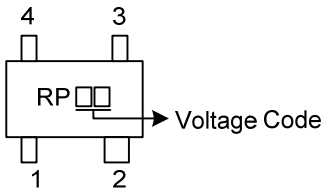
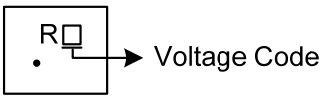
Ordering Number		Package	Packing
Lead Free	Halogen Free		
LR9282L-xx-AB3-R	LR9282G-xx-AB3-R	SOT-89	Tape Reel
LR9282L-xx-AE2-R	LR9282G-xx-AE2-R	SOT-23-3	Tape Reel
LR9282L-xx-AE5-R	LR9282G-xx-AE5-R	SOT-23-5	Tape Reel
LR9282L-xx-AF5-R	LR9282G-xx-AF5-R	SOT-25	Tape Reel
LR9282L-xx-AL4-R	LR9282G-xx-AL4-R	SOT-343	Tape Reel
LR9282L-xx-K04-1010X2-R	LR9282G-xx-K04-1010X2-R	X2DFN1010-4	Tape Reel

Note: xx: Output Voltage.

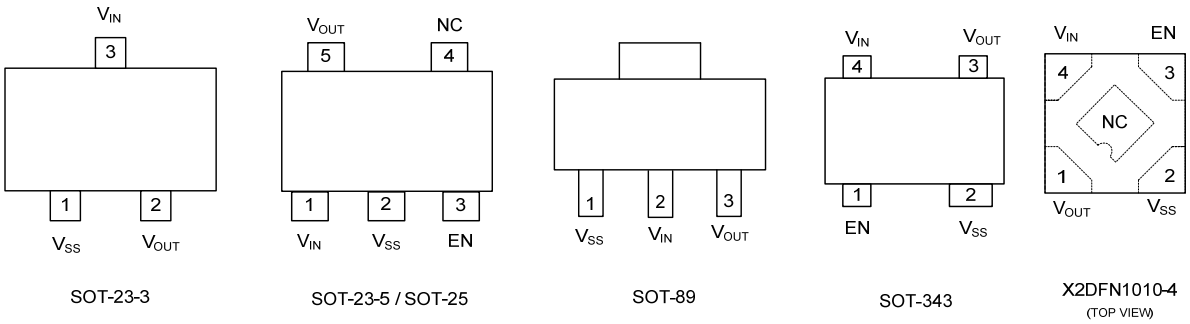
LR9282G-xx-AB3-R
(1)Packing Type
(2)Package Type
(3)Output Voltage Code
(4)Green Package

(1) R: Tape Reel
(2) AB3: SOT-89, AE2: SOT-23-3, AE5: SOT-23-5, AF5: SOT-25, AL4: SOT-343
K04-1010X2: X2DFN1010-4
(3) xx: 08: 0.8V, 12: 1.2V... 50: 5.0V
(4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-89	08: 0.8V 09: 0.9V 12: 1.2V 15: 1.5V 18: 1.8V 19: 1.9V 20: 2.0V 22: 2.2V 25: 2.5V 28: 2.8V 30: 3.0V 33: 3.3V 36: 3.6V 40: 4.0V 50: 5.0V	
SOT-23-3		
SOT-23-5 SOT-25		
SOT-343		
X2DFN1010-4	Y: 0.8V B: 1.2V C: 1.5V D: 1.8V Q: 1.85V F: 2.0V N: 2.2V E: 2.5V G: 2.8V J: 3.0V K: 3.3V P: 3.5V H: 3.6V L: 4.0V M: 5.0V	

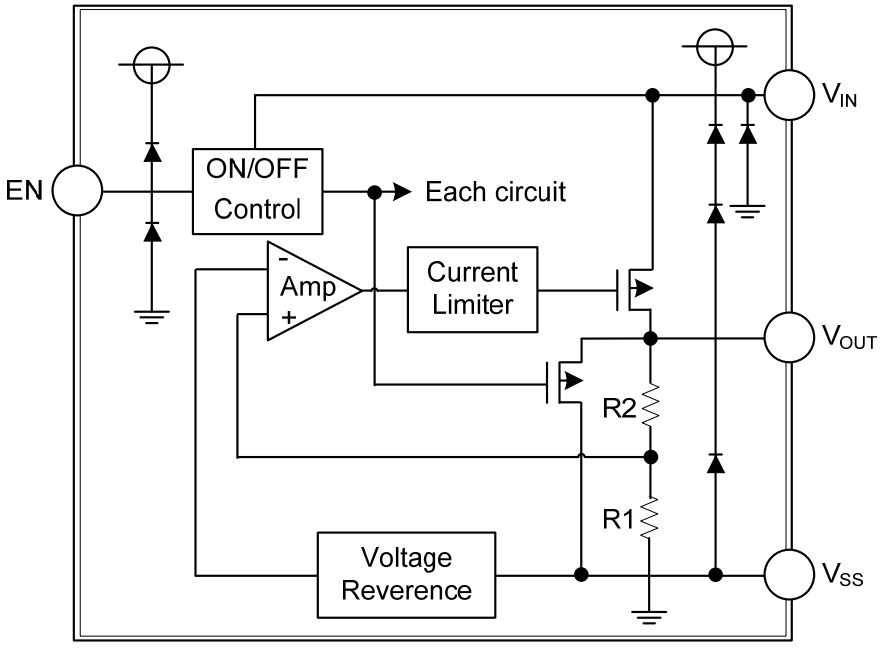
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.					PIN NAME	DESCRIPTION
SOT-23-3	SOT-23-5 SOT-25	SOT-89	SOT-343	X2DFN1010-4		
1	2	1	2	2	V_{SS}	Ground
2	5	3	3	1	V_{OUT}	Regulated output voltage.
3	1	2	4	4	V_{IN}	Positive power supply input voltage.
-	3	-	1	3	EN	Chip Enable.
-	4	-	-	-	NC	No Connection.
-	-	-	-	Exposed Pad	GND	Connect exposed pad to GND.

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage		V_{IN}	7	V
Output Current		I_{OUT}	300	mA
Power Dissipation	SOT-23-3	P_D	280	mW
	SOT-23-5/SOT-25		300	mW
	SOT-89		500	mW
	SOT-343		250	mW
	X2DFN1010-4		500 (Note 2)	mW
Operating Temperature		T_{OPT}	-40 ~ +125	°C
Storage Temperature		T_{STG}	-40 ~ +125	°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	SOT-23-3	θ_{JA}	360	°C/W
	SOT-23-5/SOT-25		333	°C/W
	SOT-89		200	°C/W
	SOT-343		400	°C/W
	X2DFN1010-4		60 (Note)	°C/W
Junction to Case	SOT-23-3	θ_{JC}	120	°C/W
	SOT-23-5/SOT-25		90	°C/W
	SOT-89		45	°C/W
	SOT-343		135	°C/W
	X2DFN1010-4		38 (Note)	°C/W

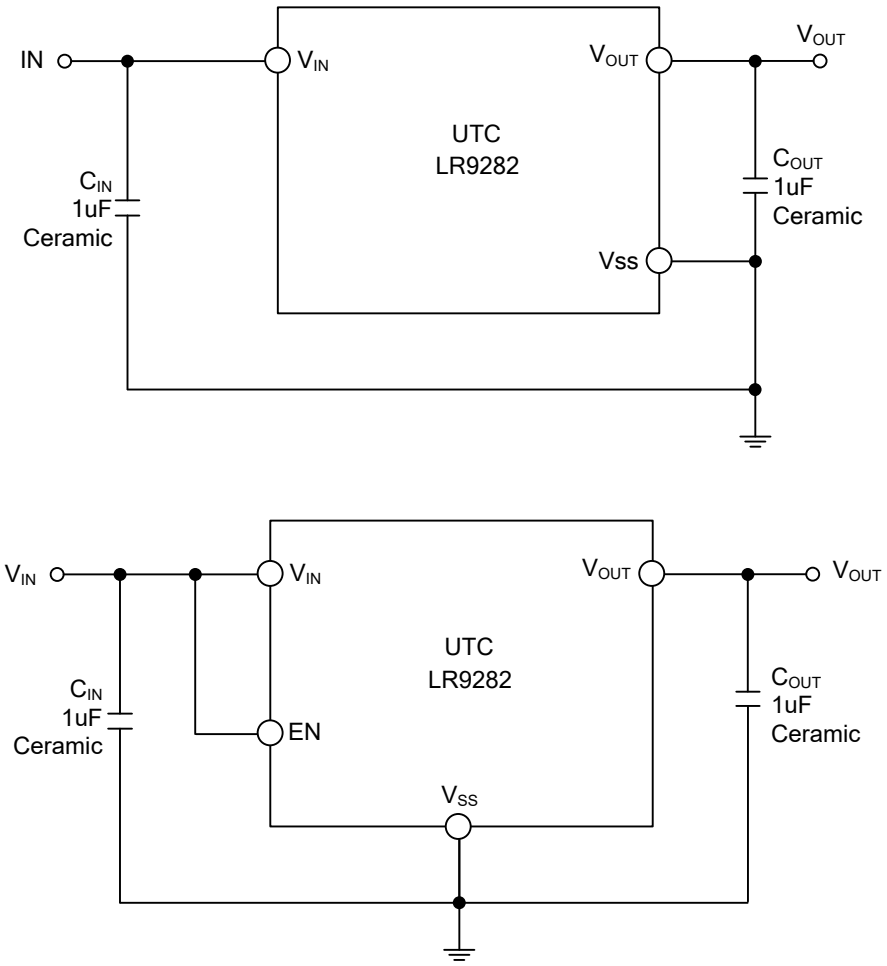
Note: Device mounted on PCB.

■ ELECTRICAL CHARACTERISTICS

(V_{IN} = V_{OUT}+1V for V_{OUT} > 1.5V, V_{IN} = 2.5V for V_{OUT} ≤ 1.5V, I_{OUT}=1mA, C_I =C_O=1.0μF, T_A=25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V_{in}				7.0	V
DC Output Accuracy		I_{OUT}=1mA	-1.0		1.0	%
Dropout Voltage	V_{DIF}	I_{OUT}=100mA, V_{OUT}=3.3V		130	180	mV
		I_{OUT}=100mA, V_{OUT}=1.8V		290	380	mV
		I_{OUT}=100mA, V_{OUT}=1.5V		400	500	mV
		I_{OUT}=100mA, V_{OUT}=0.8V		800	1000	mV
Supply Current	I_{SS}	I_{OUT}=0mA		1.0	1.5	μA
Load Regulation	ΔV_{OUT}	1mA ≤ I_{OUT} ≤ 100mA		10		mV
Line Regulation	$\frac{\Delta V_{OUT}}{V_{OUT}\cdot\Delta V_{IN}}$	I_{OUT}=10mA V_{OUT}+1V ≤ V_{IN} ≤ 6.5V		0.2	0.35	%/V
Output Current Limit	I_{LIM}		300			mA
Short Current	I_{SC}	V_{OUT}=0V		15		mA
EN “High” Voltage	V_{EN} “H”		1.5		V_{IN}	V
EN “Low” Voltage	V_{EN} “L”				0.3	V

■ TYPICAL APPLICATION CIRCUIT



■ TYPICAL CHARACTERISTICS (Cont.)