



LR6XXYY

Preliminary

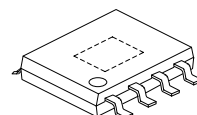
CMOS IC

DUAL OUTPUT LOW ESR CAP LOW-DROPOUT 600MA LINEAR REGULATOR

DESCRIPTION

The UTC **LR6XXYY** is a low noise and high accuracy LDO voltage regulator which has the soft start function. Designers can reduce power consumption more easily by applying EN function that can turn off the output of each device and control the in rush current through the soft start function.

The UTC **LR6XXYY** comes with low design cost and outstanding output stability and its compatibility of working with low ESR ceramic capacitors is undoubted. Besides, the level of stability is ensured by the perfect transient response and PSRR derived from a large frequency range.



HSOP-8

FEATURES

- * $V_D=470mV$ @600mA (Typ.), $V_{OUT} \geq 3.3V$
- * Range of Output Current:600mA / Channel
- * Low Power Consumption:50 μA (V_{OUT1} and V_{OUT2} Enable Mode).
- * Standby Current:0.1 μA (Typ.)
- * Accurate : $\pm 2\%$
- * High PSRR: 65 dB at 1kHz.
- * Each Channel Output Current Limit Protection:950mA
- * With Short Circuit Protection
- * Output ON/OFF Control Function

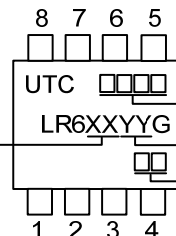
ORDERING INFORMATION

Ordering Number	Package	Packing
LR6XXYYG-SH2-R	HSOP-8	Tape Reel

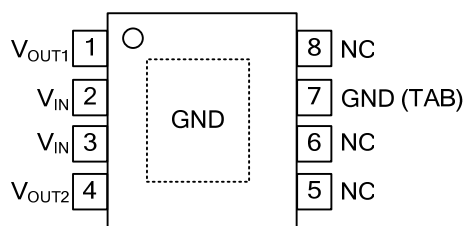
Note: xx: Output Voltage, refer to Marking Information.

LR6XXYYG-SH2-R	(1) Packing Type (2) Package Type (3) Lead Free (4)Voltage Code at V_{OUT2} (5)Voltage Code at V_{OUT1}	(1) R: Tape Reel (2) SH2: HSOP-8 (3) G: Halogen Free and Lead Free (4) YY: refer to Marking Information (5) XX: refer to Marking Information
----------------	---	--

MARKING INFORMATION

PACKAGE	VOLTAGE CODE		MARKING
	XX	YY	
HSOP-8	12:1.2V	33:3.3V	
	33:3.3V	33:3.3V	

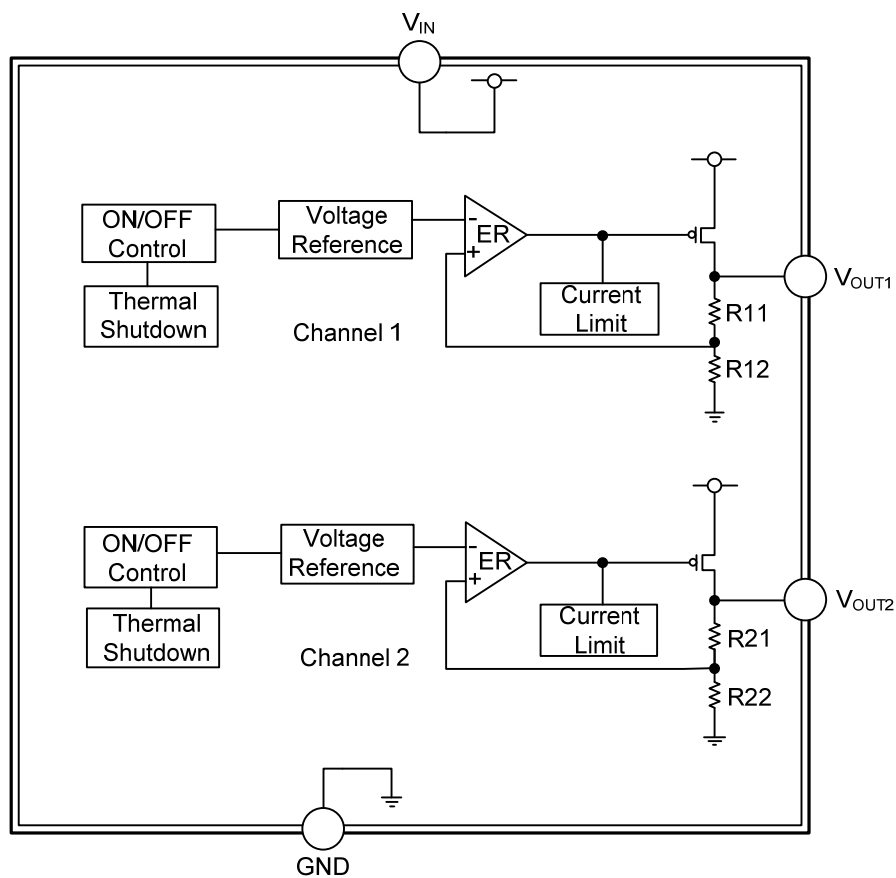
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V_{OUT1}	Output 1
2, 3	V_{IN}	Power input
4	V_{OUT2}	Output 2
5, 6, 8	NC	No connection
7	GND (TAB)	Ground

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	7	V
EN Pin Voltage	V_{EN}	7	V
Ambient Temperature	T_A	-40 ~ 85	°C
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-65 ~ 150	°C

Notes: 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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ_{JA}	60	°C/W
Junction to Case	θ_{JC}	15	°C/W

■ ELECTRICAL CHARACTERISTICS

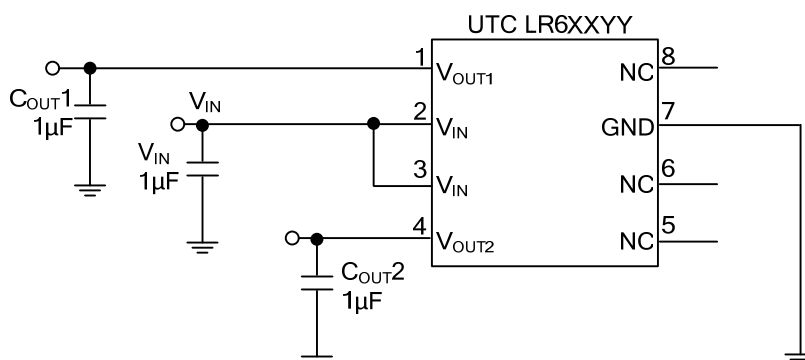
($V_{IN}=V_{OUT}+1V$, $V_{EN1}=V_{EN2}=V_{IN}$, $T_J=25^\circ\text{C}$, unless otherwise specified) (Note 1)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage (Note 2)	V_{IN}		1.6		6.0	V
Output Voltage Tolerance	V_{OUT}	$V_{IN}=6.0V$, $I_{OUT}=1mA$	-2		2	%
Continuous Output Current	I_{OUT}		600			mA
Quiescent Current	I_Q	$V_{EN2}=V_{EN1}=V_{IN}$		50	80	μA
GND Pin Current	I_{GND}	$I_{OUT1}=600mA$, $I_{OUT2}=600mA$, $V_{EN2}=V_{EN1}=V_{IN}$		55	80	μA
Standby Current	I_{STBY}	$V_{EN1}=V_{EN2}=0$			0.1	μA
Output Current Limit	I_{IL}		650	950		mA
Short Circuit Current		$V_{OUT}=GND$		400		mA
Dropout Voltage	V_{DROP}	$I_{OUT}=600mA$, $V_{OUT}=1.8V$		710	850	mV
		$V_{OUT}=2.5V$		580	700	mV
		$V_{OUT}=3.3V$		470	560	mV
Line Regulation	ΔV_{LIR}	$V_{IN}=V_{OUT}+1V\sim 6V$		3	16	mV
Load Regulation	ΔV_{LOR}	$I_{OUT}=1mA\sim 600mA$		2	10	mV
Ripple Rejection	PSRR	$f=1kHz$, Ripple=0.5V _{P-P}		65		dB
Output Noise Voltage		$f=10\sim 100KHz$		24		μV_{rms}
Temperature Coefficient	TC			50		ppm/°C
Thermal Shutdown Temperature		$V_{IN}=V_{OUT}+1V$		150		°C
Thermal Shutdown Hysteresis				35		°C
EN PIN SPECIFICATIONS						
EN Pin Current	I_{EN}	$V_{EN1}=V_{EN2}=V_{IN}$			0.1	μA
Shutdown Exit Delay Time	Δt			100		μS
Max Output Discharge Resistance to GND During Shutdown	RDSON_CLMP			20		Ω
EN Input Threshold	V_{ENH}	Output ON	1.6			V
	V_{ENL}	Output OFF			0.25	V

Notes: 1. Specifications are production tested at $T_A=25^\circ\text{C}$. Specifications over the $-40^\circ\text{C}\sim 85^\circ\text{C}$ operating temperature range are assured by design, characterization and correlation with Statistical Quality Controls (SQC).

2. $V_{IN}(\text{min})$ is the higher value of $V_{OUT} + \text{Dropout Voltage}$ or 1.6V.

■ TYPICAL APPLICATION CIRCUIT



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.