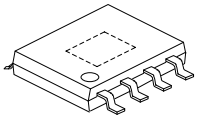
DUAL OUTPUT LOW ESR CAP LOW-DROPOUT 600MA LINEAR REGULATOR



HSOP-8

■ 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.

■ FEATURES

* V_D=470mV @600mA (Typ.), V_{OUT} ≥3.3V
* Range of Output Current:600mA / Channel
* Low Power Consumption:50μA (V_{OUT1} and V_{OUT2} Enable Mode).
* Standby Current:0.1μA (Typ.)
* Accurate：±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

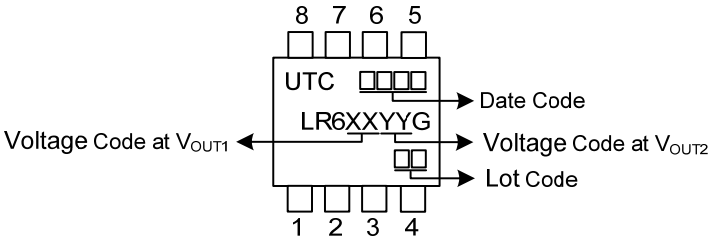
Ordering Number	Package	Packing
LR6XXYYG-SH2-R	HSOP-8	Tape Reel

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

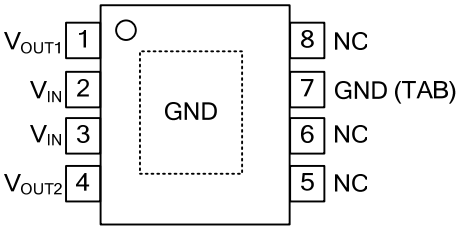
LR6XXYYG-SH2-R

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

■ MARKING INFORMATIONS

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

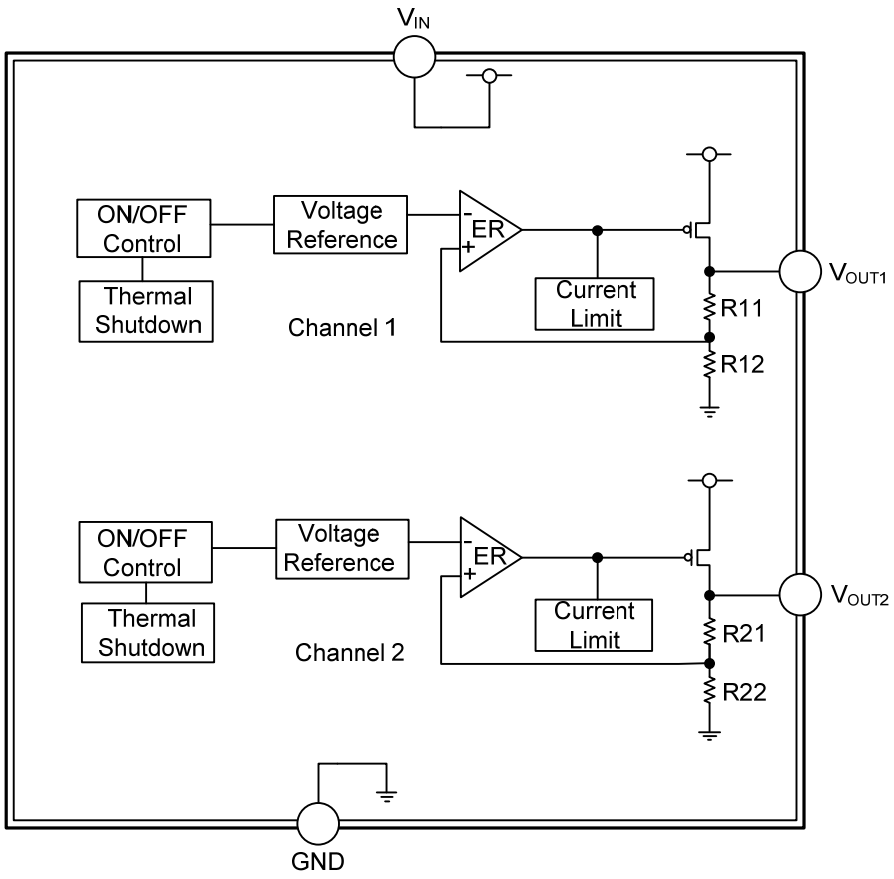
■ PIN CONFIGURATION



■ 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°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~6V			3	16	mV
Load Regulation	ΔV_{LOR}	I_{OUT}=1mA~600mA			2	10	mV
Ripple Rejection	PSRR	f=1kHz, Ripple=0.5V_{P-P},			65		dB
Output Noise Voltage		f= 10~100KHz			24		μVrms
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°C. Specifications over the -40°C~85°C operating temperature range are assured by design, characterization and correlation with Statistical Quality Controls (SQC).

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

■ TYPICAL APPLICATION CIRCUIT