



UR60XX

Preliminary

CMOS IC

60V, 150mA

ULTRALOW-QUIESCENT-CURRENT LDO

DESCRIPTION

The UR60XX ultra-low quiescent current regulator features low dropout voltage and low current in the standby mode. With less than 5 μ A quiescent current at no load, the UR60XX is ideally suited for standby micro-control-unit systems, especially for always-on applications like E-meters, fire alarms, smoke detectors and other battery operated systems. The UR60XX retains all of the features that are common to low dropout regulators including a low dropout PMOS pass device, short circuit protection, and thermal shutdown.

The UR60XX has a 65-V maximum operating voltage limit, a -40°C to 125°C operating temperature range, and \pm 2% output voltage tolerance.

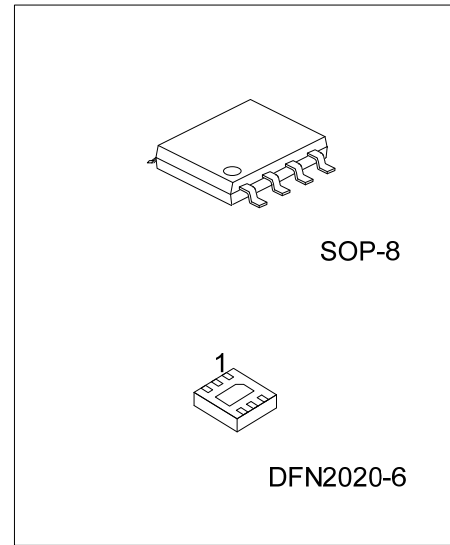
FEATURES

- * V_{IN} Range up to 60V
- * Output Voltage Tolerances of \pm 2%
- * Output Current of 150mA
- * Ultra Low Quiescent Current ($I_Q=2.8\mu A$)
- * Dropout Voltage Typically 1300 mV at $I_{OUT} = 100$ mA
- * Internal Thermal Overload Protection
- * Internal Short-Circuit Current Limit
- * Ceramic Capacitor Stable

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UR60XXL-S08-R	UR60XXG-S08-R	SOP-8	Tape Reel
UR60XXL-K06-2020-R	UR60XXG-K06-2020-R	DFN2020-6	Tape Reel

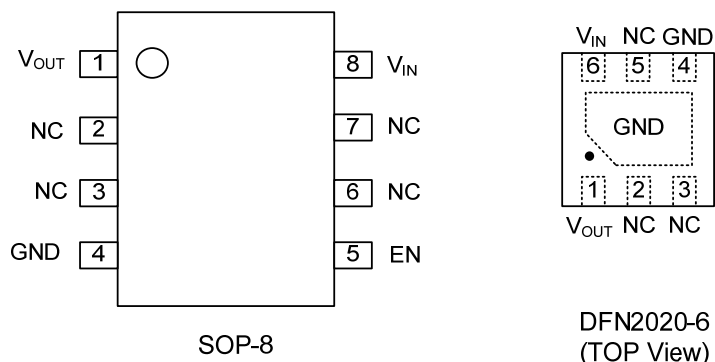
<p>UR60XXG-S08-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package (4) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) S08: SOP-8, K06-2020: DFN2020-6 (3) G: Halogen Free and Lead Free (4) XX: Refer to Marking Information
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MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOP-8	25:2.5V 33:3.3V 50:5.0V	<p>UTC □□□□ → Date Code UR60XX □ → Voltage Code L: Lead Free G: Halogen Free □□□□ → Lot Code</p>
DFN2020-6		<p>6 □□ → Voltage Code □□□□ → Date Code</p>

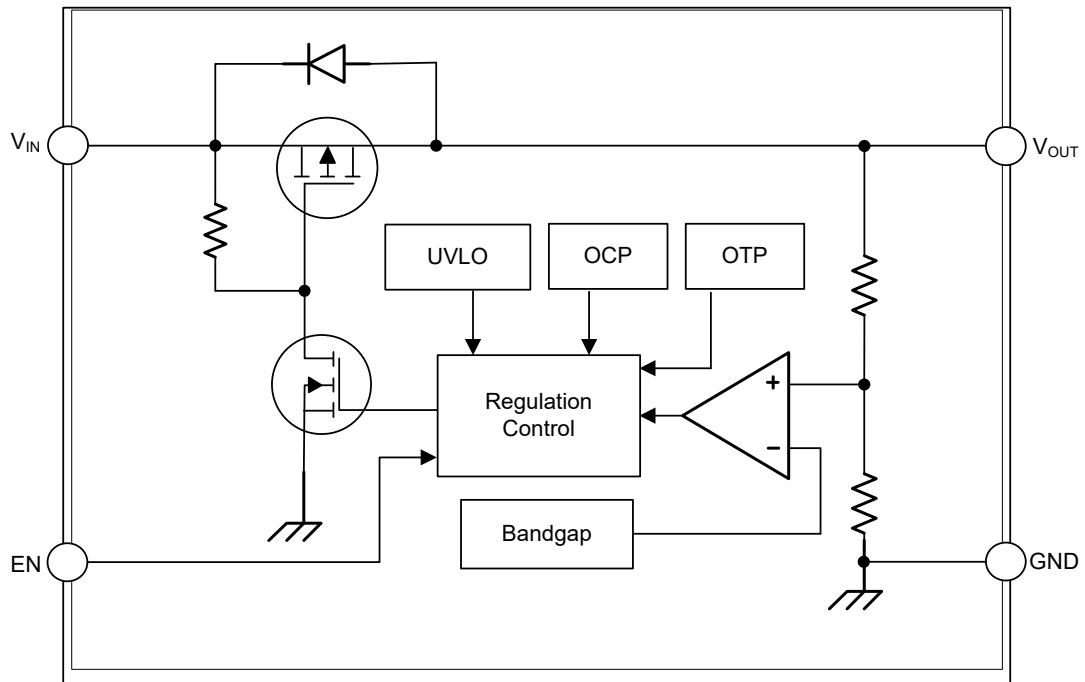
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.		PIN NAME	DESCRIPTION
SOP-8	DFN2020-6		
1	1	V _{OUT}	Output Voltage
2, 3, 6, 7	2, 3, 5	NC	No Connection
4	4	GND	Ground
5	-	EN	Enable
8	6	V _{IN}	Input Voltage
-	Exposed PAD	GND	Ground

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	-0.3 ~ 65	V
Storage Temperature Range	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

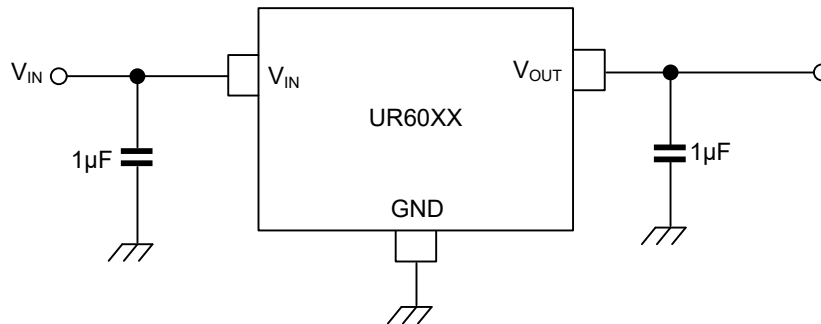
PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	2.7 ~ 60	V
Junction Temperature	T_J	-40 ~ +125	$^{\circ}\text{C}$

■ ELECTRICAL CHARACTERISTICS

($V_{IN}=V_{OUT}+2.5\text{V}$, $I_{OUT}=1\text{mA}$, $C_{IN}=C_{OUT}=1.0\mu\text{F}$, $T_J=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}		-2%		2%	V
Line Regulation	ΔV_{LINE}	$V_{IN}=V_{OUT}+2.5\text{V} \sim 60\text{V}$			0.01	%/V
Load Regulation	ΔV_{LOAD}	$I_{OUT}=1\text{mA} \sim 100\text{mA}$			1	%
		$I_{OUT}=1\text{mA} \sim 150\text{mA}$			1.5	%
Quiescent Current	I_Q	$T_J=25^{\circ}\text{C}$		2.8	5.0	μA
Current Limit	I_{LIMIT}		200	300		mA
Dropout Voltage	V_{DROP}	$I_{OUT}=100\text{mA}$		1300		mV
		$I_{OUT}=150\text{mA}$		2300		mV
Enable High Level	V_{ENHI}		0.9			V
Enable Low Level	V_{ENHO}				0.4	V
Enable pin pull high current	I_{EN}			0.1		μA
Thermal Shutdown	T_{SD}			140		$^{\circ}\text{C}$
Thermal Shutdown Hysteresis	T_{HY}			20		$^{\circ}\text{C}$

■ TYPICAL APPLICATION CIRCUIT



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