



**UU6032B**

Advance

**LINEAR INTEGRATED CIRCUIT**

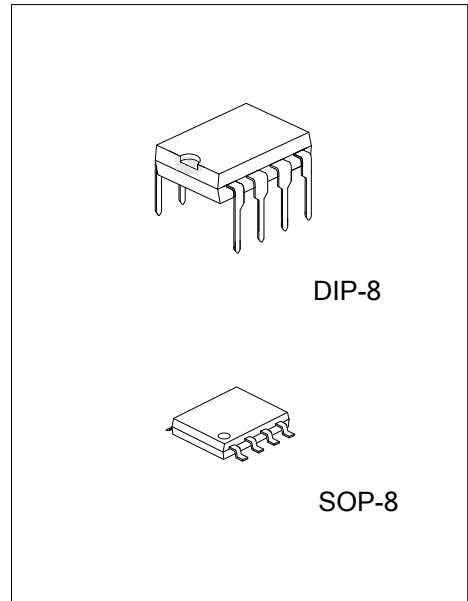
**AUTOMOTIVE TOGGLE SWITCH IC**

■ DESCRIPTION

The bipolar integrated circuit UTC **UU6032B** is designed as a toggle switch. The device, which has a defined power-on status, can be used to control electrical loads, for example, fog lamps, high/low beam or heated windows for automotive applications.

■ FEATURES

- \* Relay driver with Z-diode
- \* RC oscillator determines switching characteristics
- \* Debounced input for toggle switch
- \* Three debounced inputs: ON, OFF and TOGGLE
- \* RF interference protection
- \* Load-dump protection



■ ORDERING INFORMATION

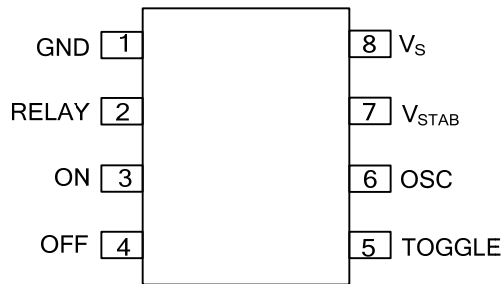
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UU6032BL-D08-T	UU6032BG-D08-T	DIP-8	Tube
UU6032BL-S08-R	UU6032BG-S08-R	SOP-8	Tape Reel

<p>UU6032BG-D08-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) D08: DIP-8, S08: SOP-8</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

DIP-8	SOP-8

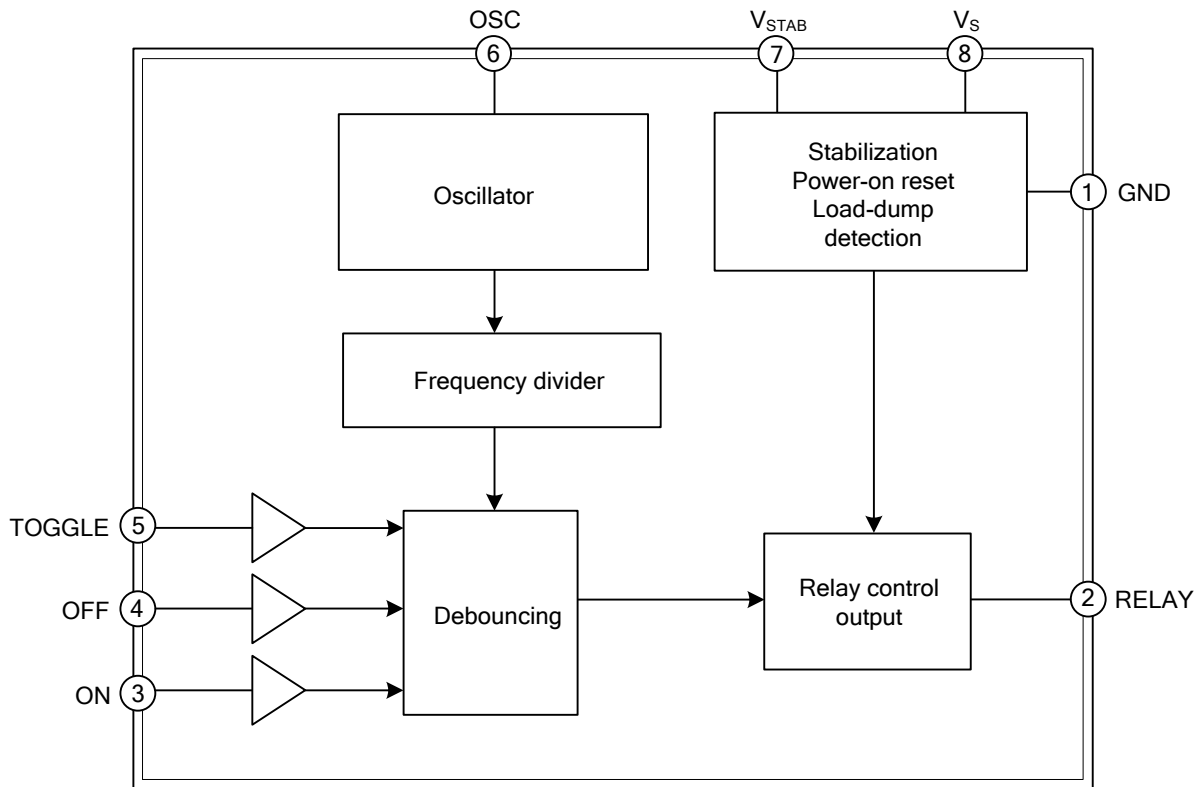
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	GND	Reference point, ground
2	RELAY	Relay control output
3	ON	Switch-on input
4	OFF	Switch-off input
5	TOGGLE	Toggle input
6	OSC	RC oscillator input
7	V <sub>STAB</sub>	Stabilized voltage
8	V <sub>s</sub>	Supply voltage

■ BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Operating Voltage, Static, 5 minutes	$V_{Batt}$	24	V
Ambient Temperature Range	$T_A$	-40~+125	°C
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55~+125	°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.

### ■ THERMAL RESISTANCE

PARAMETER	SYMBOL	RATINGS	UNIT
Junction Ambient	DIP-8	110	K/W
	SOP-8	160	K/W

### ■ ELECTRICAL CHARACTERISTICS

$V_{Batt}=13.5V$ ,  $T_{AMB}=25^{\circ}C$ , reference point ground, unless otherwise specified

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	$V_{Batt}$	$R_1 \geq 510\Omega$			16	V
		$t < 5min$	6		24	V
		$t < 60min$			18	V
5V Supply	$V_8, V_7$	Without $R_1, C_1$ Pins 7 and 8	4.3		6.0	V
Stabilized Voltage	$V_7$	$V_{Batt}=12V$ , Pin 7	4.8	5.0	5.2	V
Undervoltage Threshold	$V_S$	Power on Reset	3.0		4.2	V
Supply Current	$I_S$	All Push Buttons Open, Pin8		1.3	2.0	mA
Internal Z-Diode	$V_Z$	$I_8=10mA$ , Pin 8	13.5	14	16	V
<b>Relay control output (Pin 2)</b>						
Saturation Voltage	$V_2$	$I_2=200mA$		1.2		V
		$I_2=300mA$			1.5	V
Leakage Current	$I_{lkg}$	$V_2=14V$		2	100	$\mu A$
Output Current	$I_2$				300	mA
<b>Output pulse current</b>						
Load Dump Pulse	$I_2$	$t \leq 300ms$			1.5	A
Internal Z-Diode	$V_Z$	$I_2=10mA$	20	22	24	V
<b>Oscillator input (f = 0.001~40 kHz, see table 1) ( Pin 6)</b>						
Internal Discharge Resistance	$R_6$	$V_6=5V$		4		k $\Omega$
Switching Voltage	$V_{6L}$	Lower		0.8		V
	$V_{6H}$	Upper		2.7		V
Input Current	$-I_6$	$V_6=0V$			1	$\mu A$
<b>Switching times</b>						
Debounce Time	$t_3$		5		7	cycles
<b>Inputs ON, OFF, TOGGLE (Pins 3, 4 and 5)</b>						
Switching Threshold Voltage	$V_{3,4,5}$		1.6	2.0	2.4	V
Internal Z-Diode	$V_Z$	$I_{3,4,5}=10mA$	6.5	7.1	8.0	V
Pull-Down Resistance	$R_{3,4,5}$	$V_{3,4,5}=5V$	13	20	50	k $\Omega$

■ TYPICAL APPLICATION CIRCUIT

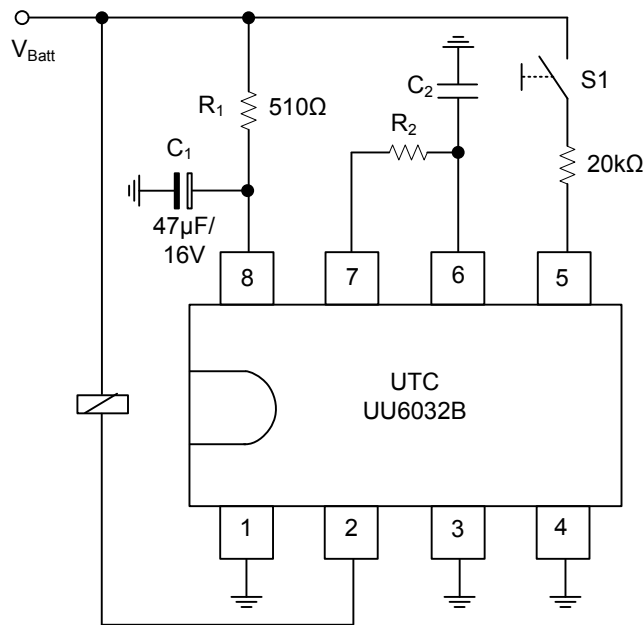


Figure 1. TOGGLE Function

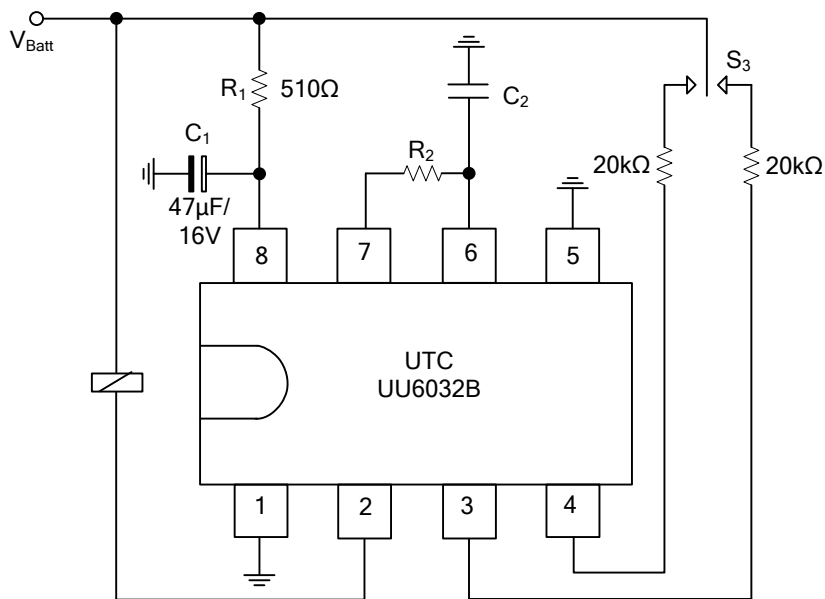


Figure 2. ON/OFF Function

■ TYPICAL APPLICATION CIRCUIT (Cont.)

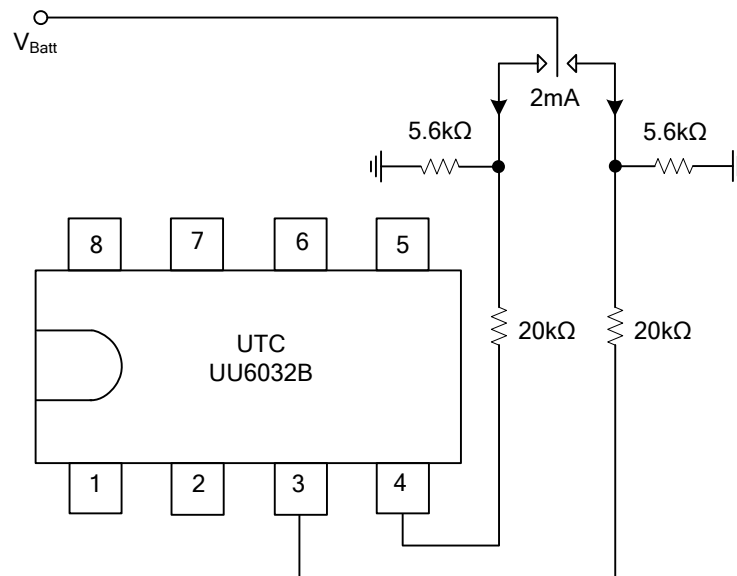


Figure 3. Increasing the contact current by parallel resistors

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