



UU6032B

Advance

LINEAR INTEGRATED CIRCUIT

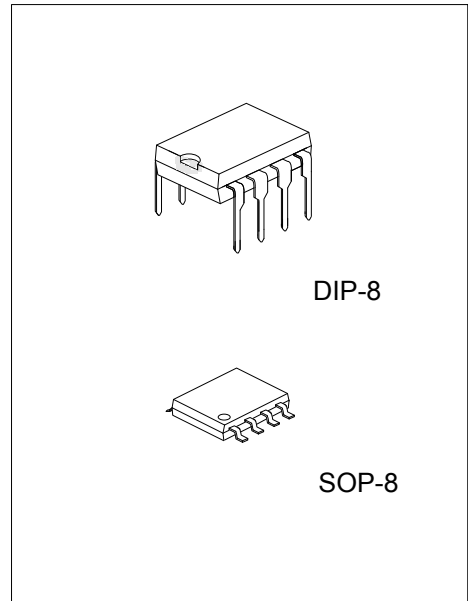
AUTOMOTIVE TOGGLE SWITCH IC

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

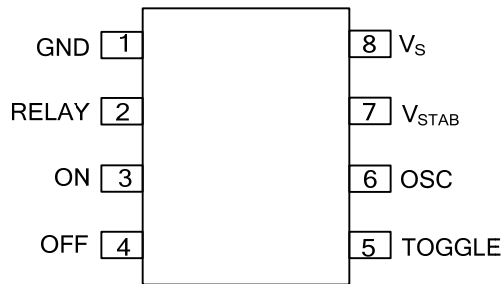
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UU6032BG-D08-T	UU6032BG-D08-T	DIP-8	Tube
-	UU6032BG-S08-R	SOP-8	Tape Reel

<p>UU6032BL-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) L: Lead Free, G: Halogen Free and Lead Free</p>
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MARKING

DIP-8	SOP-8
<p>8 7 6 5 → Date Code</p> <p>UTC □□□□</p> <p>UU6032B □</p> <p>L: Lead Free</p> <p>G: Halogen Free</p> <p>□□ → Lot Code</p> <p>1 2 3 4</p>	<p>8 7 6 5 → Date Code</p> <p>UTC □□□□</p> <p>UU6032BG</p> <p>● □□ → Lot Code</p> <p>1 2 3 4</p>

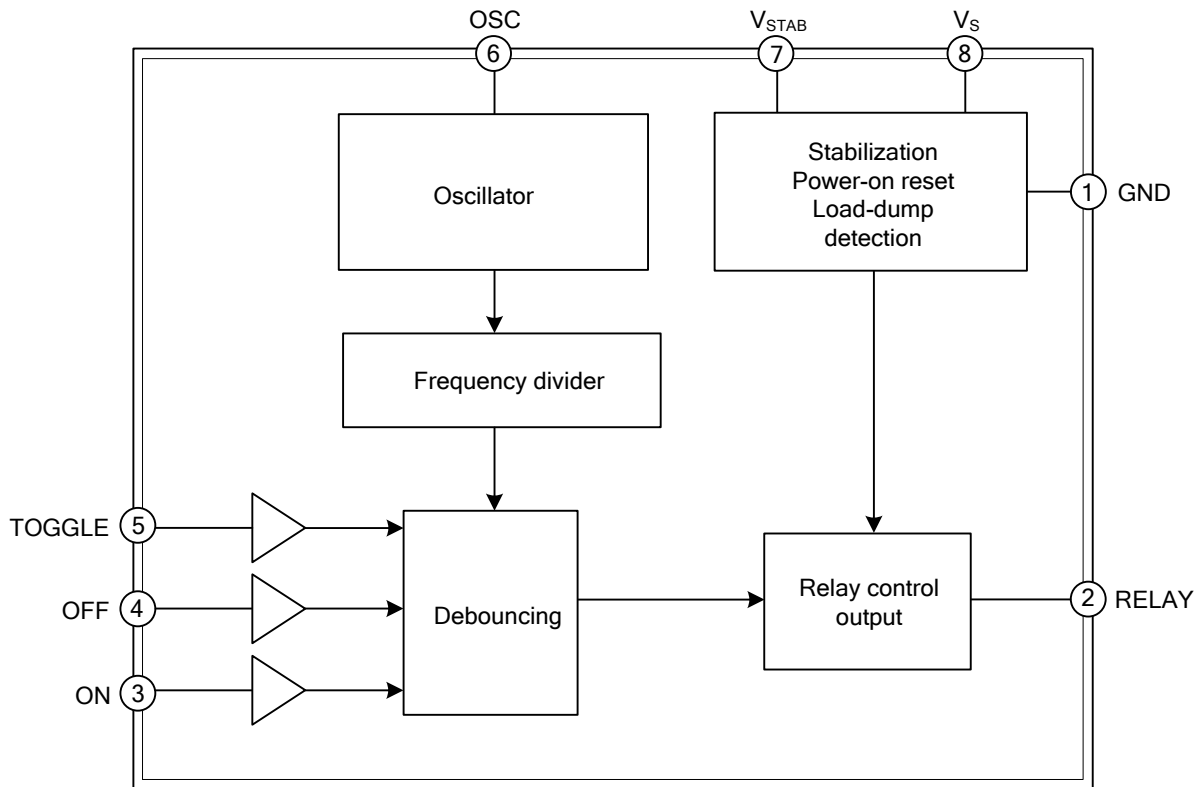
■ PIN CONFIGURATION



■ 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_{STAB}	Stabilized voltage
8	V_s	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
Relay control output (Pin 2)						
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	μA
Output Current	I_2				300	mA
Output pulse current						
Load Dump Pulse	I_2	$t \leq 300ms$			1.5	A
Internal Z-Diode	V_Z	$I_2=10mA$	20	22	24	V
Oscillator input (f = 0.001~40 kHz, see table 1) (Pin 6)						
Internal Discharge Resistance	R_6	$V_6=5V$		4		k Ω
Switching Voltage	V_{6L}	Lower		0.8		V
	V_{6H}	Upper		2.7		V
Input Current	$-I_6$	$V_6=0V$			1	μA
Switching times						
Debounce Time	t_3		5		7	cycles
Inputs ON, OFF, TOGGLE (Pins 3, 4 and 5)						
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 Ω

■ TYPICAL APPLICATION CIRCUIT

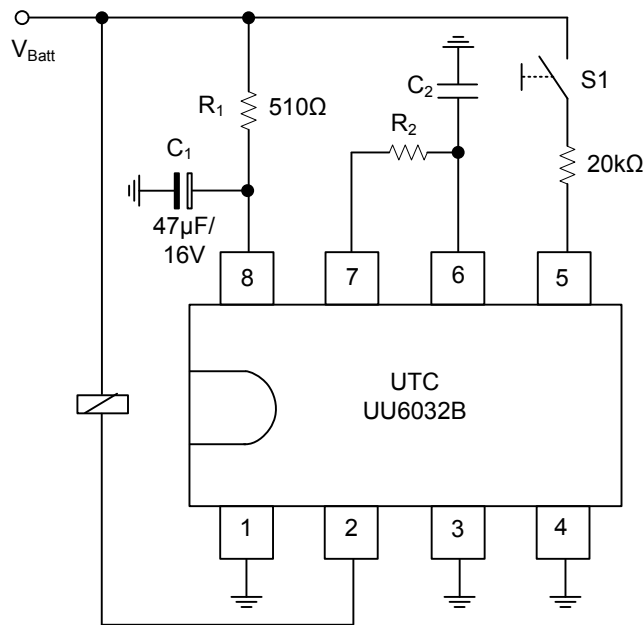


Figure 1. TOGGLE Function

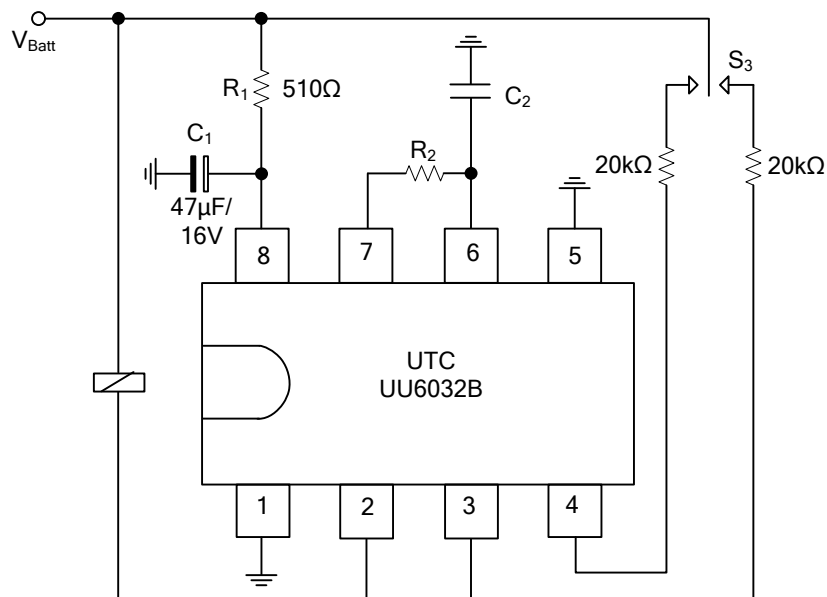


Figure 2. ON/OFF Function

■ TYPICAL APPLICATION CIRCUIT (Cont.)

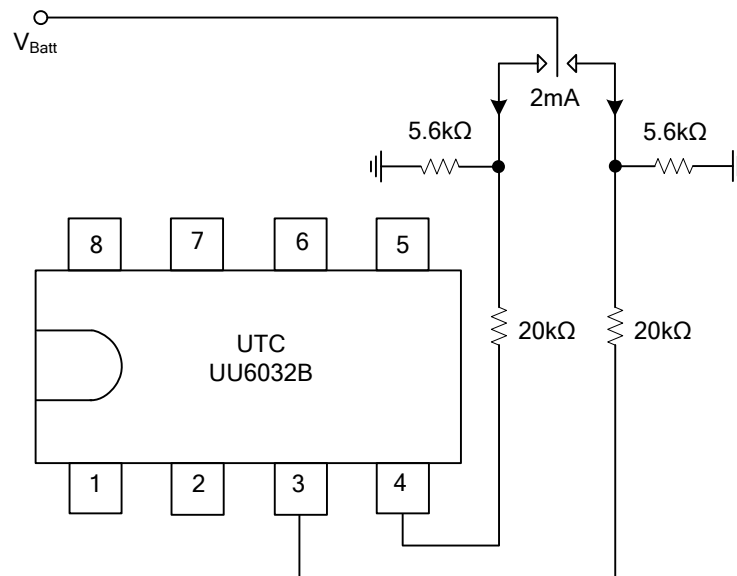


Figure 3. Increasing the contact current by parallel resistors

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