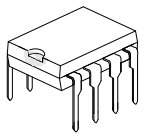
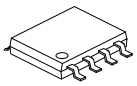
REAR WINDOW HEATING TIMER



DIP-8



SOP-8

■ DESCRIPTION

The bipolar integrated circuit UTC **UU6047B** is designed as a window heating timer. Due to time controlled functions, they reduce the current consumptions of high loads i.e., heating resistors.

An ON-relay can be switched off after a preset delay time. The relay time can be interrupted manually, whereas a retrigger function is not provided.

■ FEATURES

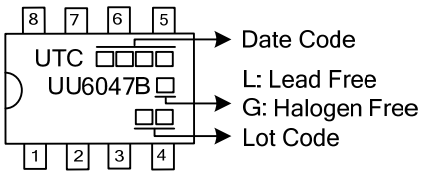
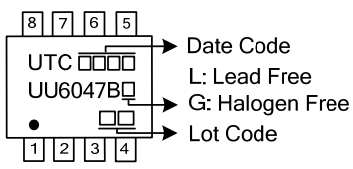
* Delay time range: 3.7s to 20h
* Relay driver with Z-diode
* RC oscillator determines switching characteristics
* Debounced input for toggle switch
* Two debounced inputs: ON and OFF
* Load-dump protection
* RF interference protected
* Inputs switched to ground

■ ORDERING INFORMATION

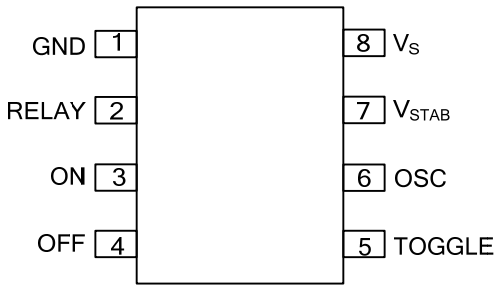
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UU6047BL-D08-T	UU6047BG-D08-T	DIP-8	Tube
UU6047BL-S08-R	UU6047BG-S08-R	SOP-8	Tape Reel

UU6047BG-D08-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube, R: Tape Reel (2) D08: DIP-8, S08: SOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

DIP-8	SOP-8
	

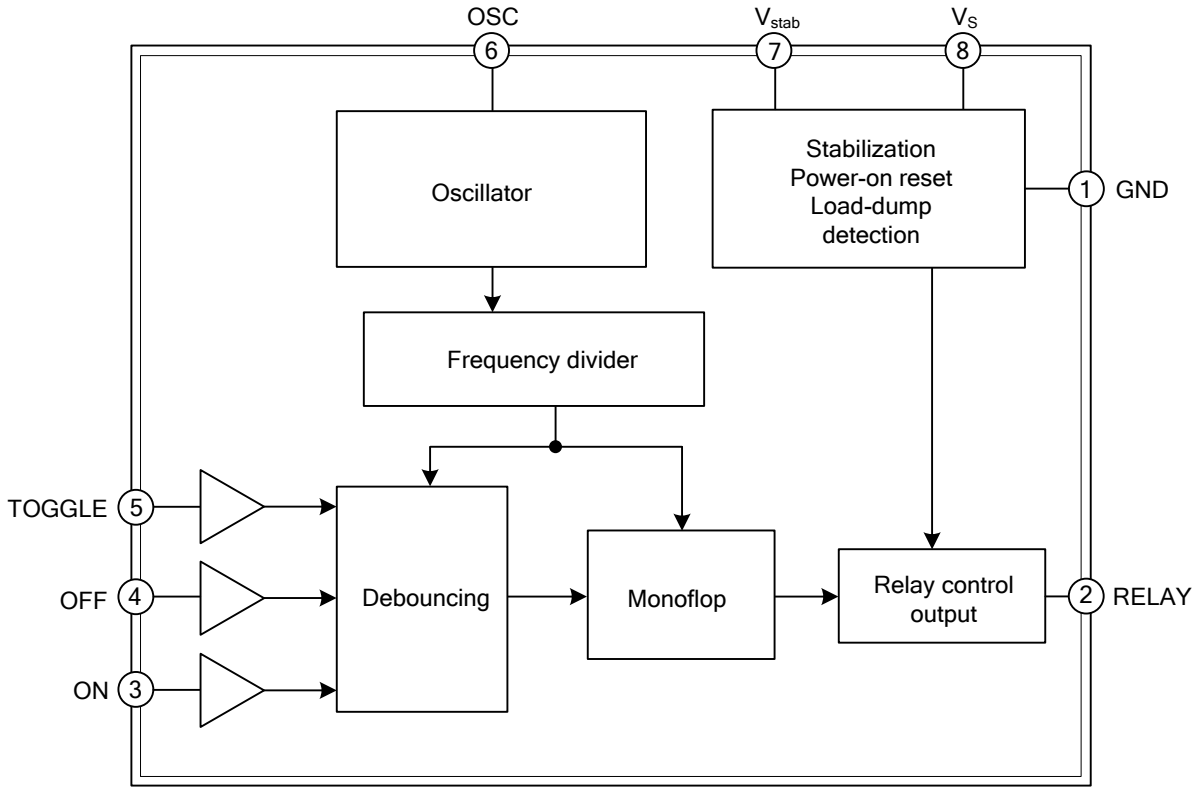
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	GND	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 min	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 DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	DIP-8	θ_{JA}	110	°C/W
	SOP-8		160	°C/W

■ ELECTRICAL CHARACTERISTICS V_{Batt}=13.5V, T_{AMB}=25°C, reference point ground, unless otherwise specified

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	V_{Batt}	R_1≥510Ω	6		16	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		5.0		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						
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	1.6	2.0	2.4	kΩ
Switching Voltage	V_{6L}	Lower	0.9	1.1	1.4	V
	V_{6H}	Upper	2.8	3.1	3.5	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-Up Resistance	$R_{3,4,5}$	$V_{3,4,5}$=0V		50		kΩ

■ TYPICAL APPLICATION CIRCUIT

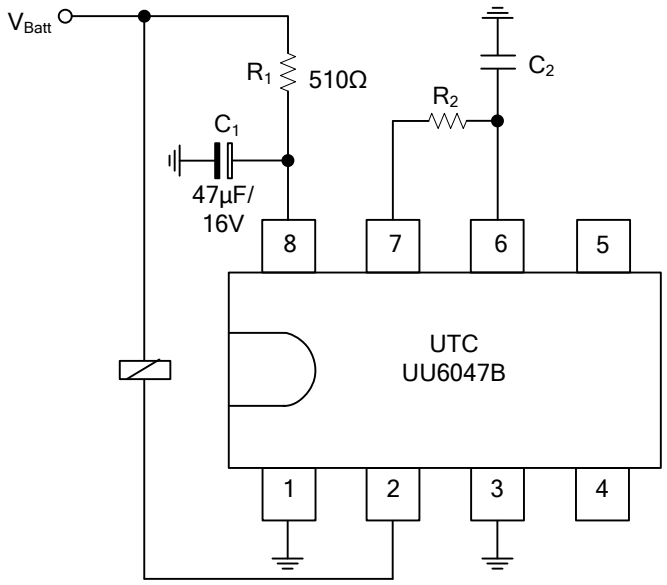


Figure 1. Generation of a monostable delay time, t_d, caused by applying the operating voltage V_{Batt}, not externally deactivatable.

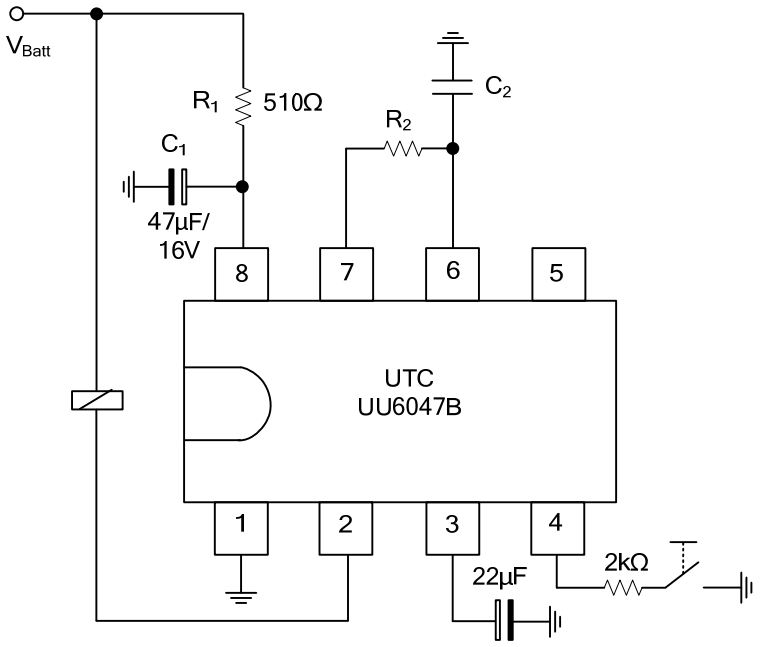


Figure 2. Generation of a monostable delay time, t_d, by applying the operating voltage V_{Batt}, deactivatable by the OFF push-button

■ TYPICAL APPLICATION CIRCUIT (Cont.)

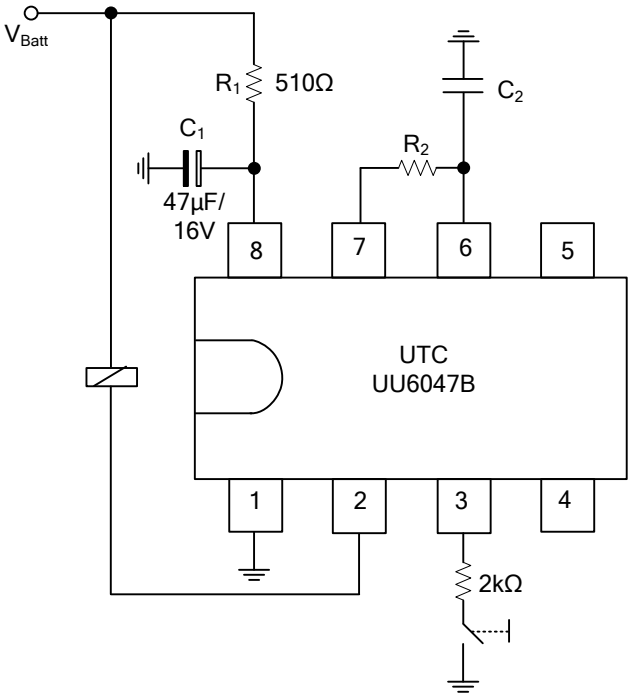


Figure 3. Monostable delay time, t_d, can be activated by the ON push-button, not externally deactivatable

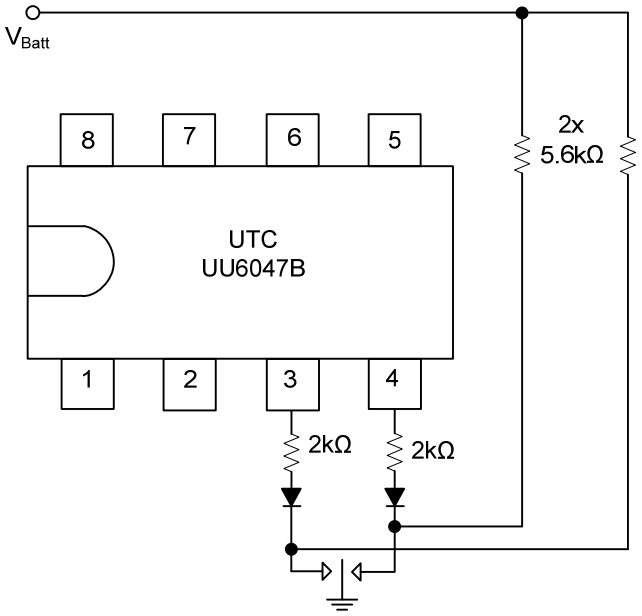


Figure 4. Increasing the contact current by parallel resistors