



## UU6043B

## LINEAR INTEGRATED CIRCUIT

### FLASHER IC WITH 18mΩ SHUNT

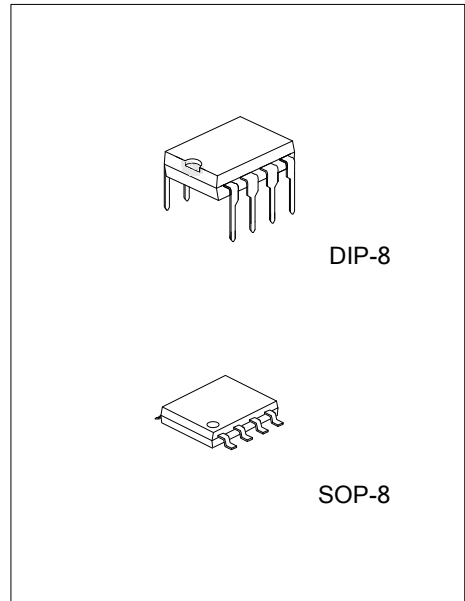
#### DESCRIPTION

The UTC **UU6043B** is a miconductor integrated circuit designed for relay-controlled automotive flashers where a high level EMC is required.

Lamp outage is indicated by frequency doubling during hazard warning as well as direction mode.

#### FEATURES

- \* Temperature and supply voltage compensated frequency
- \* Warning indication of lamp failure by means of frequency doubling
- \* Relay driver output with high current carrying capacity and low saturation output
- \* Minimum lamp load for flasher operation:  $\geq 1$  W
- \* Very low susceptibility to EMI



#### ORDERING INFORMATION

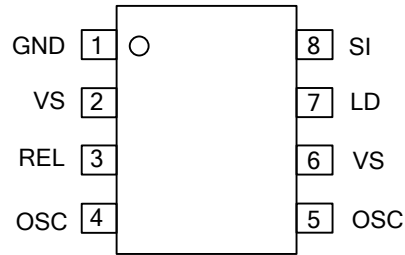
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UU6043BL-D08-T	UU6043BG-D08-T	DIP-8	Tube
UU6043BL-S08-R	UU6043BG-S08-R	SOP-8	Tape Reel

<p>UU6043BG-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
<p>8 7 6 5 → Date Code</p> <p>UTC □□□□</p> <p>UU6043B □</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>UU6043B □</p> <p>● □ □ → L: Lead Free</p> <p>□ □ → G: Halogen Free</p> <p>□ □ → Lot Code</p> <p>1 2 3 4</p>

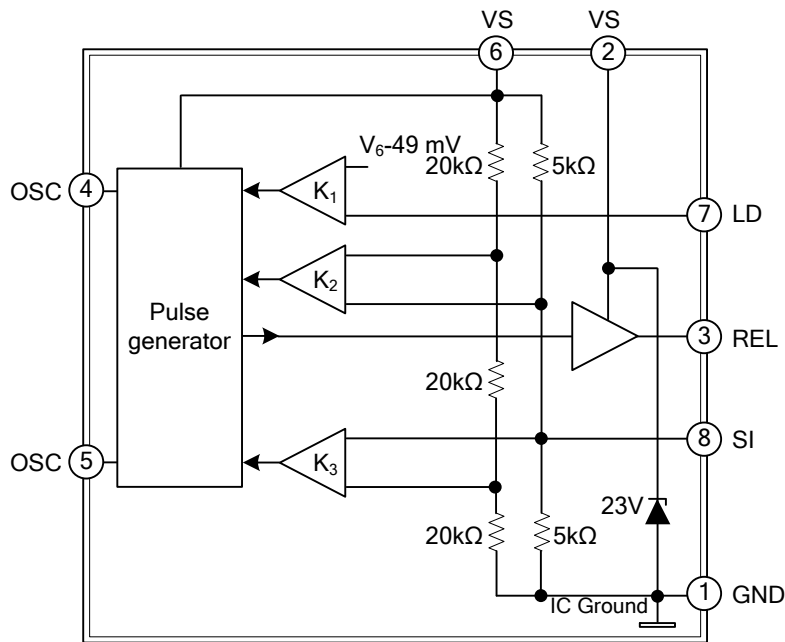
## ■ PIN CONFIGURATION



## ■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	GND	IC ground
2	VS	Supply voltage
3	REL	Relay driver
4	OSC	C <sub>1</sub> Oscillator
5	OSC	R <sub>1</sub> Oscillator
6	VS	Supply voltage, Sense
7	LD	Lamp outage detection
8	SI	Start input (49a)

## ■ BLOCK DIAGRAM



## ■ ABSOLUTE MAXIMUM RATING

Reference point Pin 1

PARAMETER		SYMBOL	RATINGS	UNIT	
Supply Voltage		Pin 2 and 6	$V_S$	16.5	V
Surge Forward Current	$t_p = 0.1 \text{ ms}$	Pin 2 and 6	$I_{FSM}$	1.5	A
	$t_p = 300 \text{ ms}$	Pin 2 and 6		1.0	A
	$t_p = 300 \text{ ms}$	Pin 8		50	mA
Output Current		Pin 3	$I_O$	0.3	A
Power Dissipation	$T_A = 95^\circ\text{C}$		$P_D$	340	mW
	$T_A = 60^\circ\text{C}$			560	mW
Ambient Temperature Range			$T_A$	-40~+95	$^\circ\text{C}$
Junction Temperature Range			$T_J$	150	$^\circ\text{C}$
Storage Temperature Range			$T_{STG}$	-55~+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.

## ■ THERMAL DATA

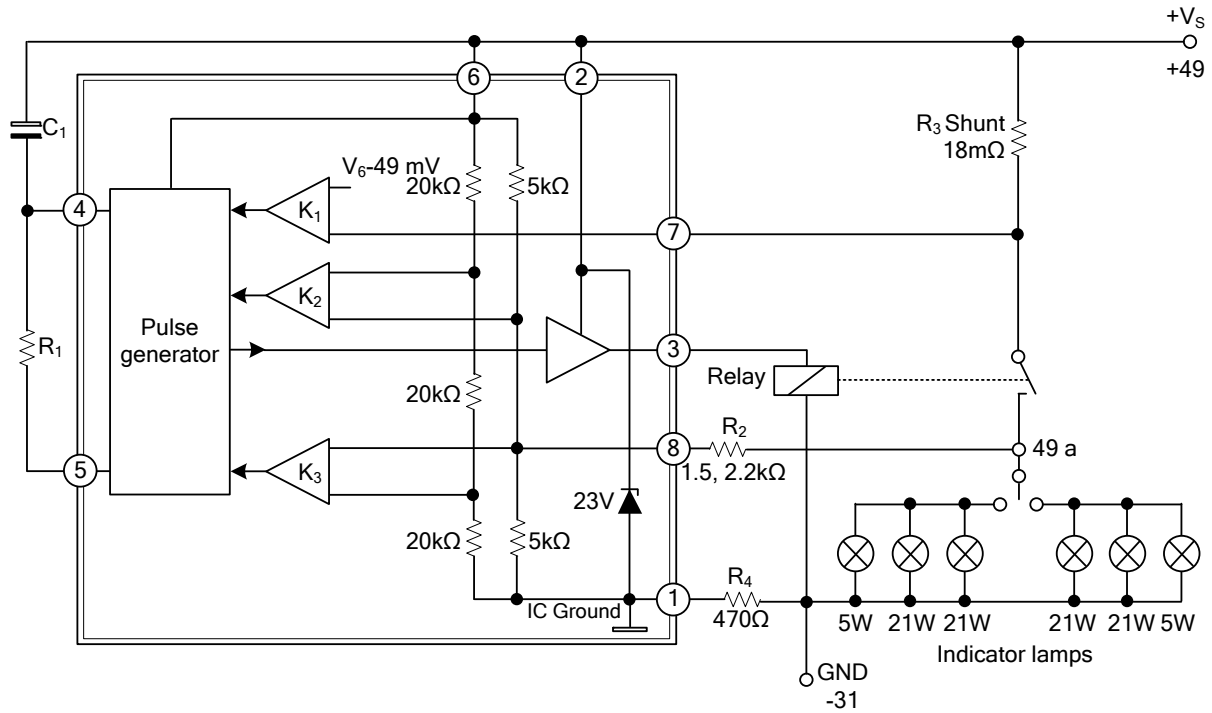
PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient (Note)	DIP-8	$\theta_{JA}$	110	$^\circ\text{C/W}$
	SOP-8		160	

## ■ ELECTRICAL CHARACTERISTICS

Typical values under normal operation in application circuit (see Figure 1),  $V_S (+49, \text{Pin 2 and 6}) = 12\text{V}$ . Reference point ground (-31),  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

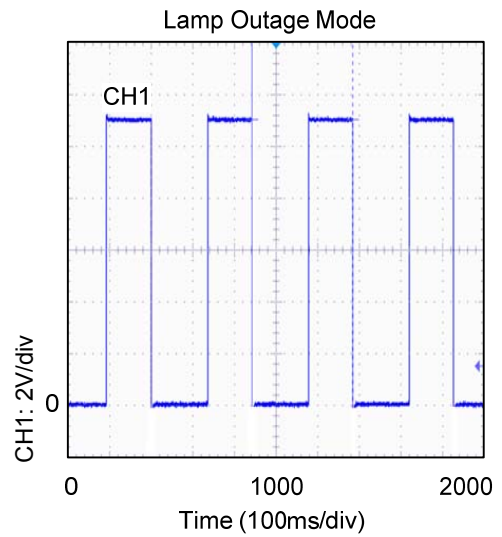
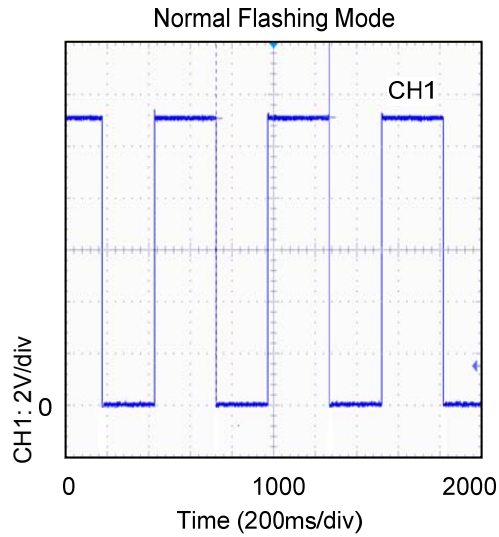
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage Range	$V_S$	Pin 2 and 6	9		15	V
Supply Current	$I_S$	Dark phase, Pin 2 and 6		4.5	8	mA
		Bright phase, Pin 2 and 6		7.0	11	mA
Relay Control Output:	$V_O$	Pin 3			1.0	V
Saturation Voltage Reverse Current	$I_O$	$I_O = 150\text{mA}, V_S = 9\text{V}$			0.1	mA
Start Delay (Delay Time)	$t_{on}$	First bright phase			10	ms
Frequency Tolerance	$\Delta f_1$	Normal flashing	-5		+5	%
Bright Period	$\Delta f_1$	Basic frequency $f_1$		60		%
	$\Delta f_2$	Control frequency $f_2$		46		%
Frequency Increase	$f_2$	Lamp outage		$1.8 \times f_1$		Hz
Control Signal Threshold	$V_{RS}$	$V_S = 15\text{V}, \text{Pin 7}$	50	53	57	mV
		$V_S = 9\text{V}, \text{Pin 7}$	43	45	47	mV
		$V_S = 12\text{V}, \text{Pin 7}$	47	49	51	mV
Leakage Resistance	$R_P$	49A to GND		4	5	k $\Omega$
Lamp Load	$P_L$		1			W

■ TYPICAL APPLICATION CIRCUIT



## ■ TYPICAL CHARACTERISTICS

$V_{CC}=12V$ ,  $C_1=47\mu F$ ,  $R_1=6.8K$ ,  $T_A=25^\circ C$



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