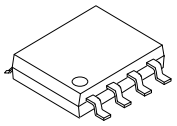
UU4793 **Preliminary** ***LINEAR INTEGRATED CIRCUIT***

OVERLOAD MONITORING WITH RESISTIVE LOAD, V_T = 44.5 mV



SOP-8

■ DESCRIPTION

The UTC **UU4793** is a bipolar integrated circuit designed for monitoring over loading or short circuit in automotive or industrial applications. The threshold V_T is 44.5 mV and $V_{4,6}=V_S-V_T$. V_T is not dependent of the power supply voltage V_S. If the voltage developed across shunt resistor R_{SH} exceeds V_T, IC turns on the output, or else turns off the output.

The output is turned off when input switch Pin 8 is open or there is a lack of power supply voltage. The output breakdown voltage is decided by the Z-diodes Z_3 and Z_5 which have a typical value of V_Z = 22 V.

A not used of the comparator input have to be connected to Pin 7.

■ FEATURES

* Two common reference comparators
* Tight threshold tolerance
* Constant threshold
* Output with NPN
* 8 kV - ESD protection
* Protection of reverse polarity
* Load-dump protection

■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UU4793L-S08-R	UU4793G-S08-R	SOP-8	Tape Reel

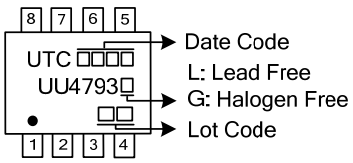
UU4793G-S08-R

(1)Packing Type — (1) R: Tape Reel

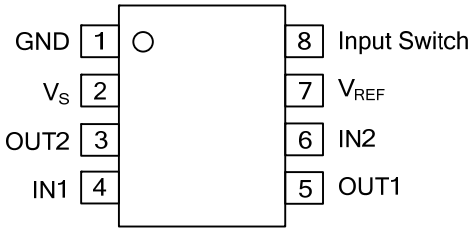
(2)Package Type — (2) S08: SOP-8

(3)Green Package — (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



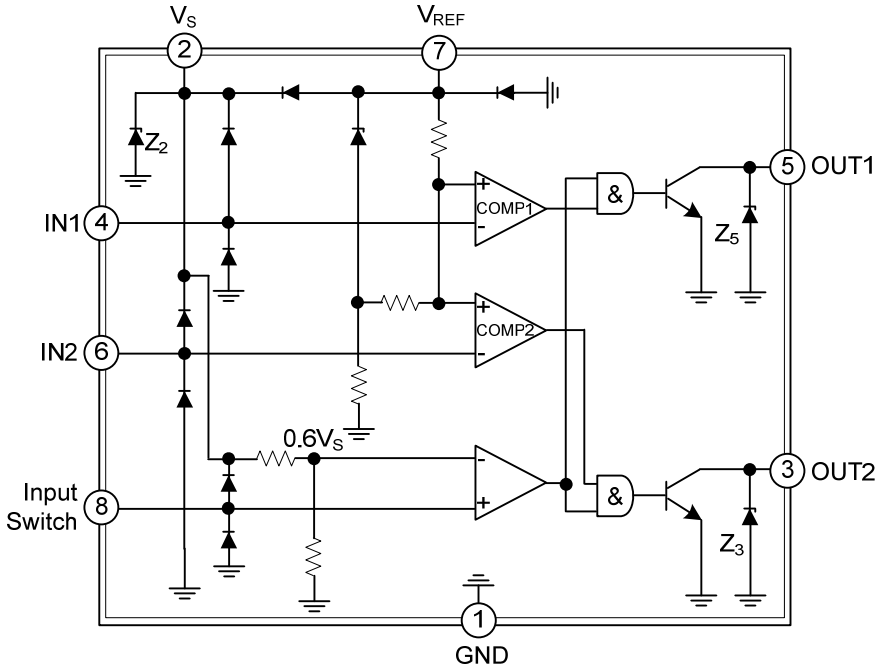
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	GND	Ground
2	V_S	Power supply voltage
3	OUT2	Comparator 2 output
4	IN1	Comparator 1 input
5	OUT1	Comparator 1 output
6	IN2	Comparator 2 input
7	V_{REF}	Reference voltage
8	Input Switch	Input switch pin

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage	Pin 2, 7	V_S	16.5	V
Current Consumption (t =2ms, measured at Pin 1 (GND))	Pin 1	I_1	1.5	A
Output Current	Pin 3, 5	$I_{3,5}$	20	mA
Input Voltage (reference point Pin 7)	Pin 4, 6	$-V_{4,6}$	6	V
Power Dissipation	T_A= 95°C	P_D	360	mW
	T_A= 60 °C		560	
Ambient Temperature		T_A	-40 ~ +95	°C
Junction Temperature		T_J	150	°C
Storage Temperature		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	θ_{JA}	160	K/W

■ ELECTRICAL CHARACTERISTICS (V_S = 9~15 V, T_A = -40~+95 °C, fig. 1, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	PIN	MIN	TYP	MAX	UNIT
Supply Voltage	V_S		2, 7	9		15	V
Internal Z-Diode Z_2	V_Z		2	20			V
Current Consumption	I_1	V_S=12V measured at Pin 1 (GND)	1		4.5	6	mA
Output Saturation Voltage	V_{SAT}	V_S= 9V, $I_{3,5}$=10mA, T_A= 25°C	3, 5			0.5	V
Output Z-Diodes Z_3, Z_5	V_Z		3, 5	21			V
Control Signal Threshold	$-V_T$	$I_{3,5}$= 1mA, T_A= 25°C	4, 6	43	44.5	46	mV
Temperature Coefficient of Control Signal Threshold	T_C				15		µV/K
Threshold Voltage	V_8	Switch identification	8		0.6 V_S		V
Input Currents	I_I		4, 6		100		nA
			8		5		µA
Delay Time	$t_{D(ON)}$	Switch-on High to low	3, 5		6		µs
	$t_{D(OFF)}$	Switch-off Low to high			30		µs

■ TYPICAL APPLICATION CIRCUIT

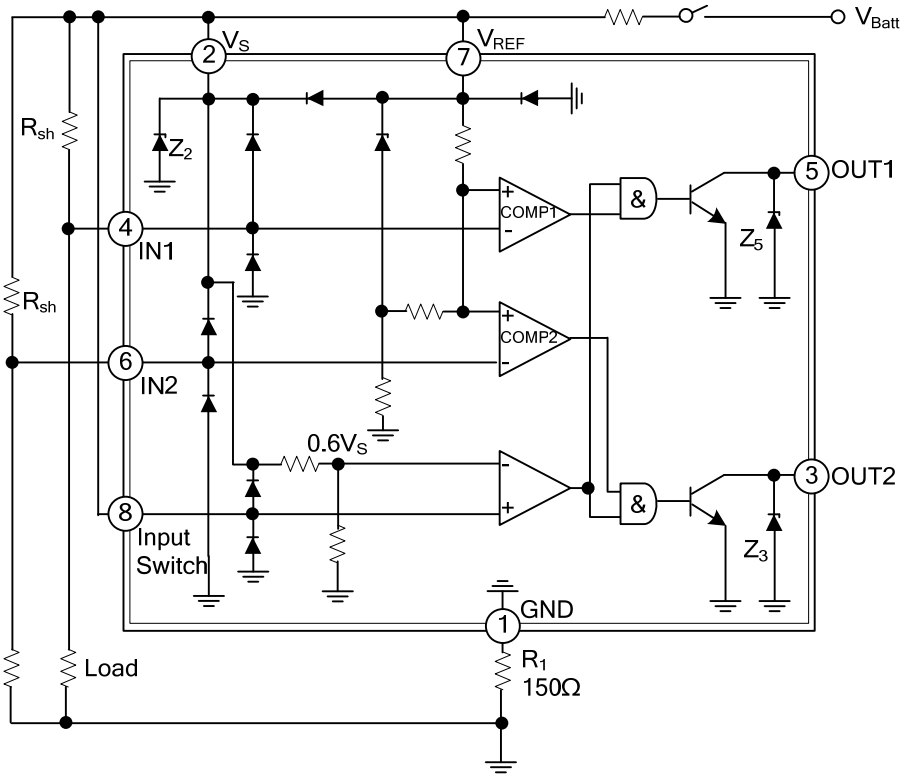


Fig. 1 Schematic and Application circuit

■ TIMING DIAGRAM

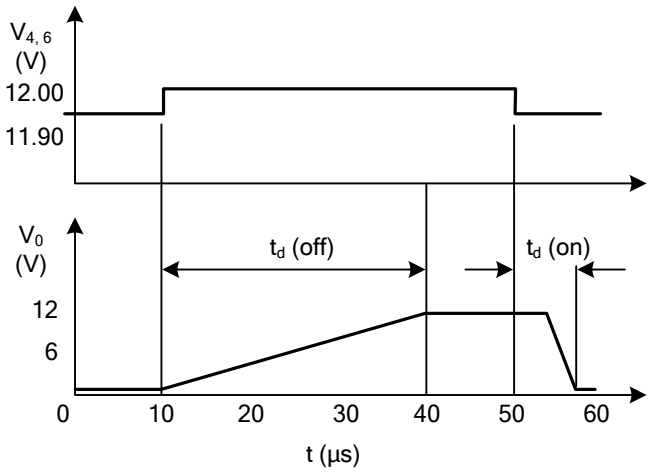


Fig. 2 Timing Diagram