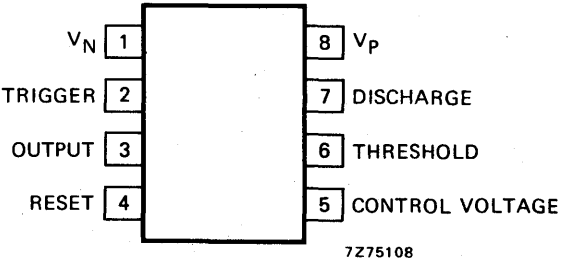
TIMER

The TDA0555D is a monolithic timer, equivalent to the NE555, however it is mounted in a miniature plastic package.
It is a highly stable controller capable of producing accurate time delays or oscillations. In the time delay mode of operation the timer is controlled by one external resistor and capacitor. For operation as an oscillator the frequency and the duty factor are both accurately controlled by two external resistors and one capacitor.
Additional terminals are provided for triggering or resetting. The circuit may be triggered and reset on the falling-edge of a waveform.

Features

- Timing from microseconds to hours
- Operates in both astable and monostable modes
- Adjustable duty factor
- Output can source or sink 200 mA
- Output and supply TTL compatible
- Temperature stability 0,005%/°C
- Normally-on and normally-off output
- Operating ambient temperature: −25 to +85 °C
- Miniature plastic encapsulation

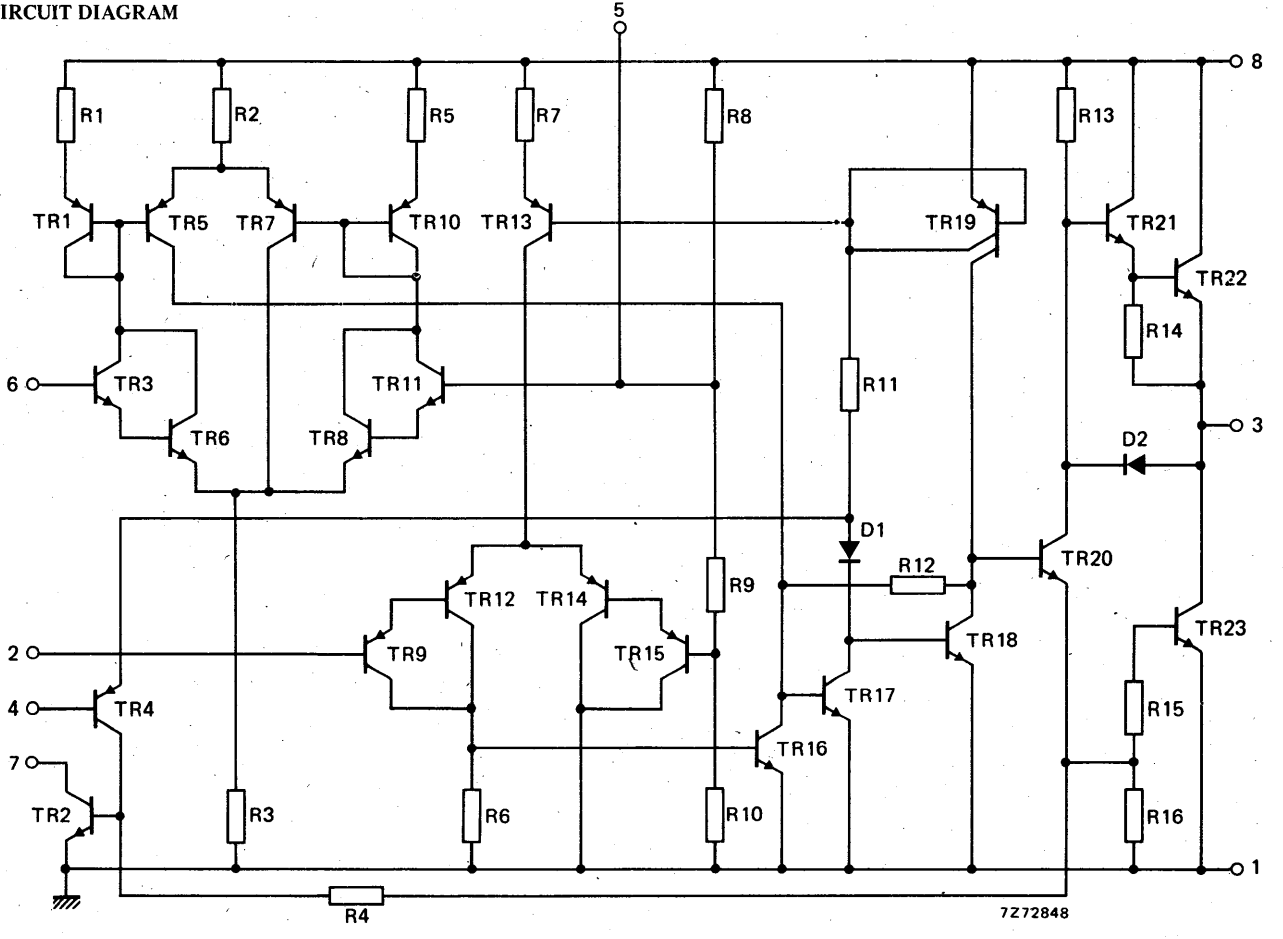
CONNECTION DIAGRAM



PACKAGE OUTLINE (see general section)

SO-8 (SOT-96A); plastic 8-lead flat pack.

CIRCUIT DIAGRAM



RATINGS Limiting values in accordance with the Absolute Maximum System (IEC 134)

Supply voltage	$V_P - V_N$	max.	18	V
Temperatures				
Operating ambient temperature	T_{amb}	−25 to	+85	°C
Storage temperature	T_{stg}	−65 to	+125	°C
Junction temperature	T_j	max.	125	°C
Power dissipation in free air; T_{amb} = 50 °C				
Mounted on a ceramic substrate of 4 cm^2	P_{tot}	max.	470	mW
derating factor for T_{amb} > 50 °C	$1/R_{th}$	=	6,3	mW/°C
Mounted on PC board of 4 cm^2	P_{tot}	max.	310	mW
derating factor for T_{amb} > 50 °C	$1/R_{th}$	=	4,2	mW/°C

CHARACTERISTICS at V_P = 5 to 15 V; V_N = 0 V; T_{amb} = 25 °C unless otherwise specified

Parameter	Conditions	Symbol	min.	typ.	max.	Unit
Supply voltage		V_P	4,5	–	16	V
Supply current [1])	V_P = 5 V; R_L = ∞	I_P	–	3	6	mA
	V_P = 15 V; R_L = ∞	I_P	–	10	15	mA
Timing error (monostable)	R_A = 2 to 100 kΩ					
initial accuracy	C = 0,1 μF		–	1	–	%
drift with temperature			–	50	–	ppm/°C
drift with supply voltage			–	0,1	–	%/V
Timing error (astable)	R_A; R_B = 2 to 100 kΩ					
initial accuracy	C = 0,1 μF		–	2,25	–	%
drift with temperature			–	150	–	ppm/°C
drift with supply voltage			–	0,3	–	%/V
Threshold voltage			–	2/3 V_P	–	V
Threshold current			–	100	250	nA
Trigger voltage	V_P = 15 V		–	5	–	V
	V_P = 5 V		–	1,67	–	V
Trigger current			–	2	–	μA
Reset voltage			0,4	0,7	1,0	V
Reset current			–	0,1	–	mA
Control voltage level	V_P = 15 V		9	10	11	V
	V_P = 5 V		2,6	3,33	4	V
Output voltage; LOW	V_P = 15 V; I_{sink} = 10 mA	V_{OL}	–	0,1	0,25	V
	V_P = 15 V; I_{sink} = 50 mA	V_{OL}	–	0,4	0,75	V
	V_P = 15 V; I_{sink} = 100 mA	V_{OL}	–	2,0	2,5	V
	V_P = 15 V; I_{sink} = 200 mA	V_{OL}	–	2,5	–	V
	V_P = 5 V; I_{sink} = 5 mA	V_{OL}	–	0,25	0,35	V
Output voltage; HIGH	V_P = 15 V; I_{source} = 200 mA	V_{OH}	–	12,5	–	V
	V_P = 15 V; I_{source} = 100 mA	V_{OH}	12,75	13,3	–	V
	V_P = 5 V; I_{source} = 100 mA	V_{OH}	2,75	3,3	–	V
Output rise time		t_r	–	100	–	ns
Output fall time		t_f	–	100	–	ns
Discharge leakage current			–	20	100	nA

[1]) Supply current when output HIGH : typ. 1 mA less.