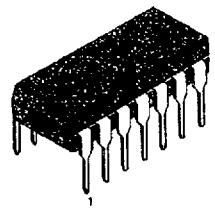
DUAL TIMER

The KA556/1 series dual monolithic timing circuits are a highly stable controller capable of producing accurate time delays or oscillation.

The KA556 is a dual KA555. Timing is provided an external resistor and capacitor for each timing function.

The two timers operate independently of each other, sharing only V_{CC} and ground.
The circuits may be triggered and reset on falling waveforms. The output structures may sink or source 200mA.

14 DIP



FEATURES

- Replaces Two KA555 Timers
- Operates in Both Astable And Monostable Modes
- High Output Current
- TTL Compatible
- Timing From Microsecond To Hours
- Adjustable Duty Cycle
- Temperature Stability Of 0.005% Per ℃

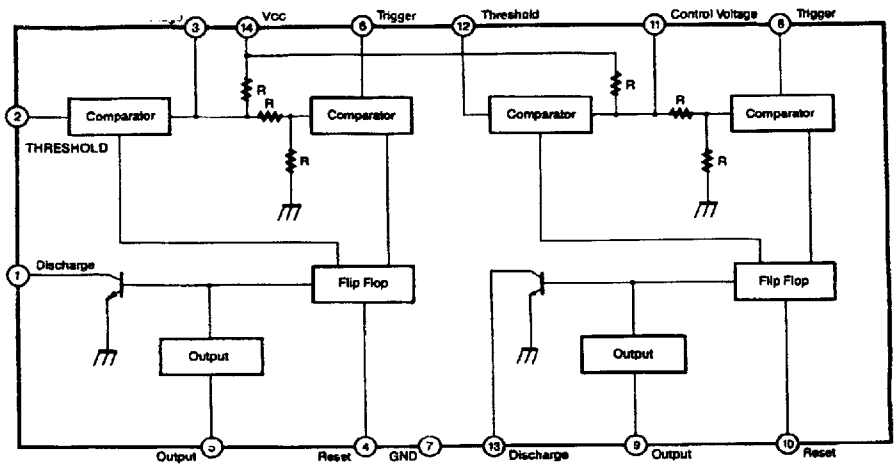
ORDERING INFORMATION

Device	Package	Operating Temperature
KA556	14 DIP	0 ~ + 70℃
KA556I	14 DIP	-40 ~ + 85℃

APPLICATIONS

- Precision Timing
- Pulse Shaping
- Pulse Width Modulation
- Frequency Division
- Traffic Light Control
- Sequential Timing
- Pulse Generator
- Time Delay Generator
- Touch Tone Encoder
- Tone Burst Generator

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (T_A = 25℃)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Lead Temperature (soldering 10sec)	T_{LEAD}	300	℃
Power Dissipation	P_D	600	mW
Operating Temperature Range KA556 KA556I	T_{OPR}	0 ~ + 70 - 40 ~ + 85	℃ ℃
Storage Temperature Range	T_{STG}	- 65 ~ + 150	℃

ELECTRICAL CHARACTERISTICS

(T_A = 25℃, V_{CC} = 5 ~ 15V, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{CC}		4.5		16	V
* 1 Supply Current (two timers) (low state)	I_{CC}	V_{CC} = 5V, R_L = ∞		5	12	mA
		V_{CC} = 15V, R_L = ∞		16	30	mA
* 2 Timing Error (monostable)		R_A = 2KΩ to 100KΩ				
Initial Accuracy	ACCUR	C = 0.1μF		0.75		%
Drift with Temperature	$\Delta t/\Delta T$	T = 1.1RC		50		ppm/℃
Drift with Supply Voltage	$\Delta t/\Delta V_{CC}$			0.1		%/V
Control Voltage	V_C	V_{CC} = 15V	9.0	10.0	11.0	V
		V_{CC} = 5V	2.6	3.33	4.0	V
Threshold Voltage	V_{TH}	V_{CC} = 15V	8.8	10.0	11.2	V
		V_{CC} = 5V	2.4	3.33	4.2	V
* 3 Threshold Voltage	I_{TH}			30	250	nA
Trigger Voltage	V_{TR}	V_{CC} = 15V	4.5	5.0	5.6	V
		V_{CC} = 5V	1.1	1.6	2.2	V
Trigger Current	I_{TR}	V_{TH} = 0V		0.01	2.0	μA
* 5 Reset Voltage	V_{RST}		0.4	0.6	1.0	V
Reset Current	I_{RST}			0.03	0.6	mA
Low Output Voltage	V_{OL}	V_{CC} = 15V				
		I_{SINK} = 10mA		0.1	0.25	V
		I_{SINK} = 50mA		0.4	0.75	V
		I_{SINK} = 100mA		2.0	3.2	V
		I_{SINK} = 200mA		2.5		V
		V_{CC} = 5V				
		I_{SINK} = 8mA		0.25	0.35	V
		I_{SINK} = 5mA		0.15	0.25	V

ELECTRICAL CHARACTERISTICS

(T_A = 25℃, V_{CC} = 5 ~ 15V, unless otherwise specified)

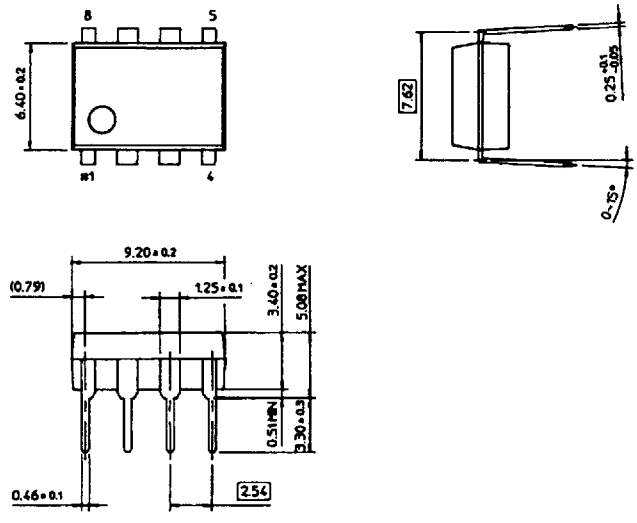
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
High Output Voltage	V_{OH}	V_{CC} = 15V I_{SOURCE} = 200mA I_{SOURCE} = 100mA	 12.75	 12.5 13.3		 V V
		V_{CC} = 5V I_{SOURCE} = 100mA	2.75	3.3		V
Rise Time of Output	t_R			100	300	nsec
Fall Time of Output	t_F			100	300	nsec
Discharge Leakage Currnet	I_{LKG}			10	100	nA
* 4 Matching Characteristics Initial Accuracy Drift with Temperature Dfirt with Supply Voltage	 ACCUR $\Delta t/\Delta T$ $\Delta t/\Delta V_{CC}$			 1.0 10 0.2	 2.0 0.5	 % ppm/℃ %/V
* 2 Timing Error (astable) Initial Accuracy Drift with Temperature Dfift with Supply Voltage	 ACCUR $\Delta t/\Delta T$	R_A,R_B = 1KΩ to 100KΩ C = 0.1μF V_{CC} = 15V		 2.25 150 0.3		 % ppm/℃ %/V

Notes:

* 1. Supply current when output is high is typically 1.0mA less at V_{CC} = 5V
* 2. Tested at V_{CC} = 5V and V_{CC} = 15V
* 3. This will determine the maximum value of $R_A + R_B$ for 15V operation.
  The maximum total R = 20MΩ, and for 5V operation the maximum total R = 6.6MΩ.
* 4. Matching characteristics refer to the difference between performance characteristics of each timer section in the monostable mode.
* 5. As reset voltage lowers, timing is inhibited and then the output goes low.

Dimensions in Milimeters

8-DIP-300



14-DIP-300