

KA556 Dual Timer

Features

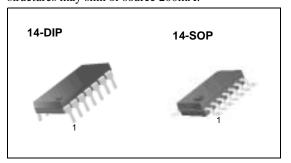
- Replaces Two KA555 Timers
- Operates in Both Astable And Monostable Modes
- High Output Current
- TTL Compatible
- Timing From Microsecond To Hours
- Adjustable Duty Cycle
- Temperature Stability Of 0.005% Per °C

Applications

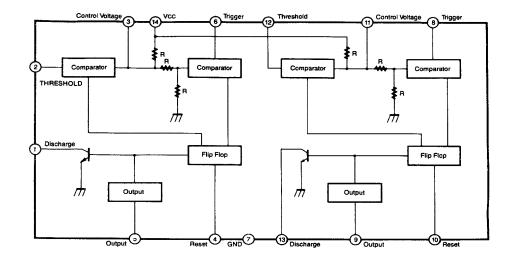
- · Precision Timing
- · Pulse Shaping
- Pulse Width Modulation
- Frequency Division
- · Traffic Light Control
- · Sequential Timing
- Pulse Generator
- Time Delay Generator
- Touch Tone Encoder
- · Tone Burst Generator

Description

The KA556 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.



Internal Block Diagram



Absolute Maximum Ratings ($T_A = 25$ °C)

Parameter	Symbol	Value	Unit
Supply Voltage	Vcc	16	V
Lead Temperature (soldering 10sec)	TLEAD	300	°C
Power Dissipation	PD	600	mW
Operating Temperature Range KA556	T _{OPR}	0 ~ + 70	°C
Storage Temperature Range	T _{STG}	- 65 ~ + 150	°C

Electrical Characteristics

(TA = 25° C, VCC = $5 \sim 15$ V, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Supply Voltage	Vcc	-	4.5	-	16	V
Supply Current *1(two timers) (low state)	Icc	VCC = 5V, R _L = ∞ VCC = 15V, R _L = ∞	-	5 16	12 30	mA mA
Timing Error *2(monostable) Initial Accuracy Drift with Temperature Drift with Supply Voltage	ACCUR Δt/ΔT Δt/ΔVCC	ΔT $C = 0.1 \mu F$		0.75 50 0.1	-	% ppm/°C %/V
Control Voltage	Vc	Vcc = 15V	9.0	10.0	11.0	V
		Vcc = 5V	2.6	3.33	4.0	V
Threshold Voltage	VTH	VCC = 15V	8.8	10.0	11.2	V
		VCC = 5V	2.4	3.33	4.2	V
Threshold Current*3	ITH	-	-	30	250	nA
Trigger Voltage	VTR	Vcc = 15V	4.5	5.0	5.6	V
		VCC = 5V	1.1	1.6	2.2	V
Trigger Current	ltr	VTR = 0V	-	0.01	2.0	μΑ
Reset Voltage*5	VRST	-	0.4	0.6	1.0	V
Reset Current	IRST	-	-	0.03	0.6	mA
Low Output Voltage	VoL	VCC = 15V ISINK = 10mA ISINK = 50mA ISINK = 100mA ISINK = 200mA VCC = 5V ISINK = 8mA ISINK = 5mA	-	0.1 0.4 2.0 2.5 0.25 0.15	0.25 0.75 3.2 0.35 0.25	V
High Output Voltage	Voн	VCC = 15V ISOURCE = 200mA ISOURCE = 100mA VCC = 5V	12.75	12.5 13.3	-	V
		ISOURCE = 100mA	2.75	3.3	-	٧
Rise Time of Output	tR	-	-	100	300	ns
Fall Time of Output	tF	-	-	100	300	ns
Discharge Leakage Current	ILKG	-	-	10	100	nA
Matching Characteristics*4 Initial Accuracy Drift with Temperature Drfit with Supply Voltage	ACCUR Δt/ΔT Δt/ΔVCC	-	-	1.0 10 0.2	2.0 0.5	% ppm/°C %/V
Timing Error (astable)*2 Initial Accuracy Drift with Temperature Drift with Supply Voltage	ACCUR Δt/ΔT Δt/ΔVcc	V_{CC} = 15V RA,RB = 1KΩ to 100KΩ C = 0.1μF	-	2.25 150 0.3	-	% ppm/°C %/V

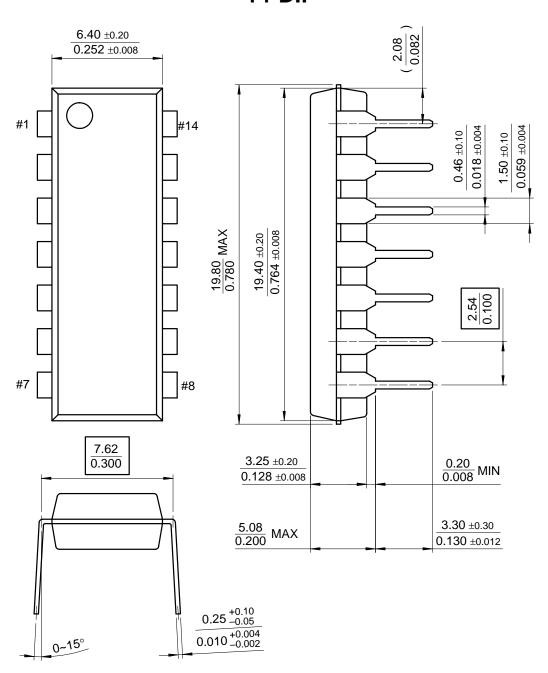
Notes:

- *1. Supply current when output is high is typically 1.0mA less at VCC = 5V
- *2. Tested at VCC = 5V and VCC = 15V
- *3. This will determine the maximum value of RA + RB for 15V operation. The maximum total R = $20M\Omega$, and for 5V operation the maximum total R = $6.6M\Omega$.
- *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.

Mechanical Dimensions

Package

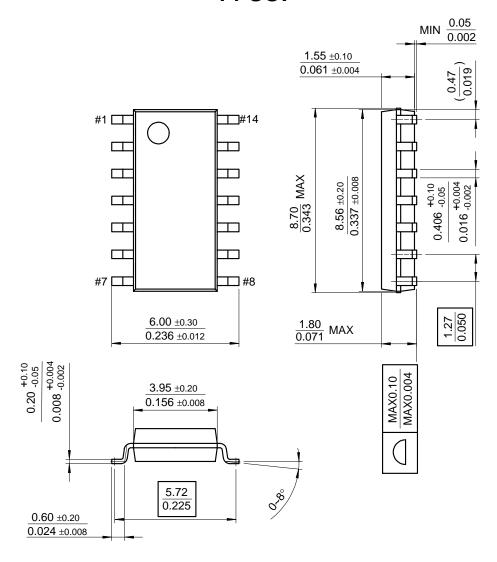
14-DIP



Mechanical Dimensions (Continued)

Package

14-SOP



Ordering Information

Product Number	Package	Operating Temperature		
KA556	14-DIP			
KA556D	14-SOP	0 ~ + 70°C		
KA556I	14-DIP	0~+70 C		
KA556ID	14-SOP			

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