

AN5534

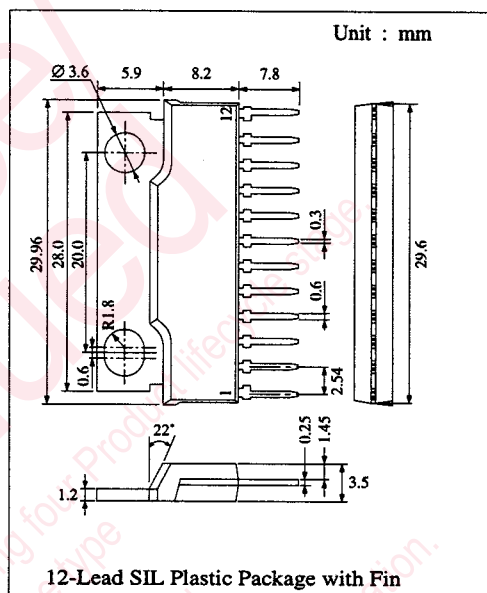
IC for TV/Display Vertical Deflection Output

Description

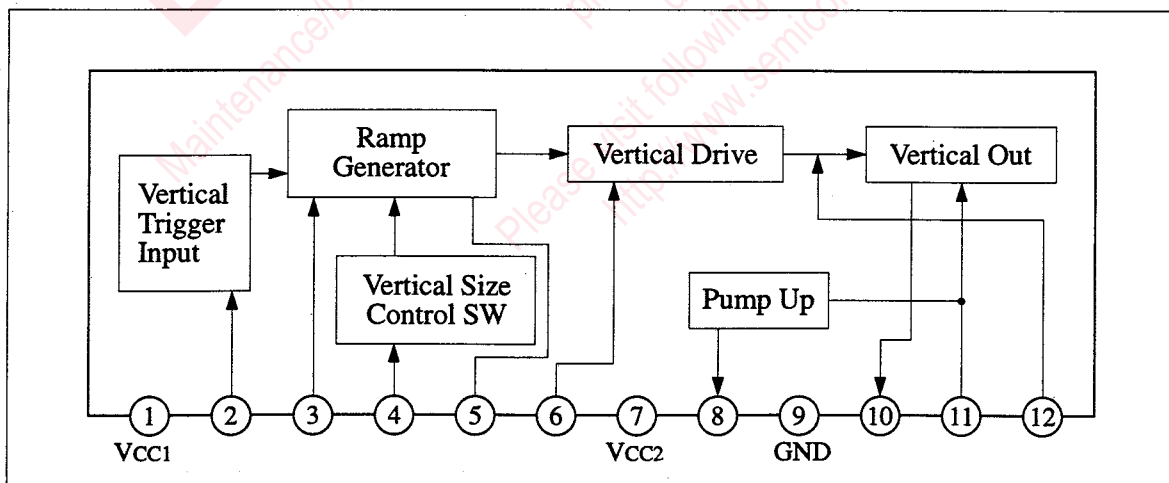
The AN5534 is an integrated circuit designed for vertical deflection output, such as TV and display. This IC contains the sawtooth wave generator so that it can perform AC/DC feedback loop independently.

Features

- Stable sawtooth wave generator free from change in input pulse width built-in
- 50Hz/60Hz switching circuit built-in
- Minimum flyback line period of sawtooth wave signal : 100μsec
- Ramp generator, drive circuit, and pump up circuit built-in
- Stable interlacing and vertical jitter characteristics



Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{CC1}	15	V
	V _{CC2}	30	V
Supply Current	I _{CC1}	20	mA
Power Dissipation	P _D	27	W
Operating Ambient Temperature	Topr	-20 ~ +70	°C
Storage Temperature	Tstg	-55 ~ +150	°C

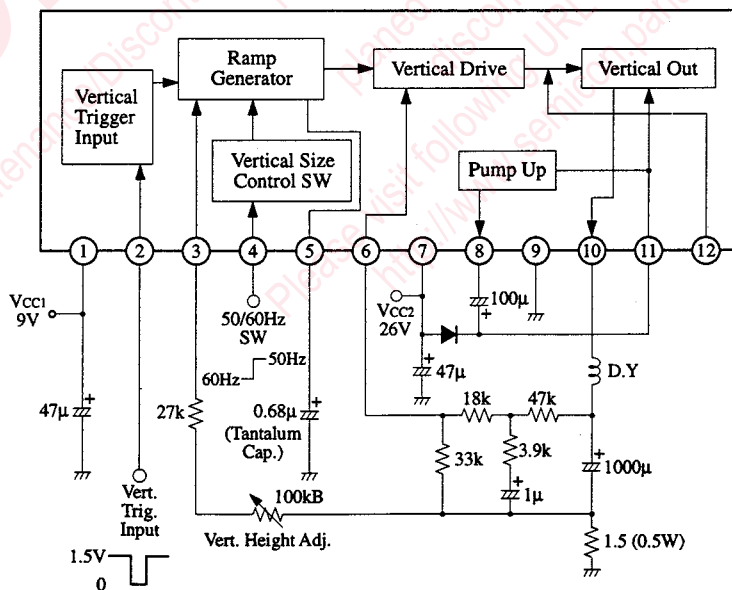
■ Recommended Operating Range (Ta=25°C)

Item	Symbol	Range
Operating Supply Voltage Range	V _{CC1}	7V ~ 15V
	V _{CC2}	10V ~ 30V


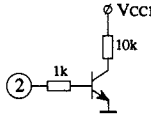

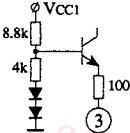
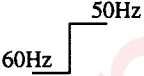
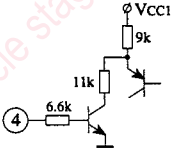
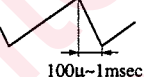
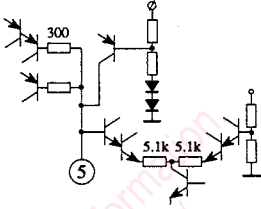

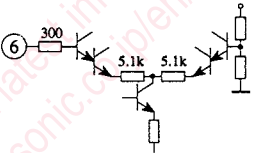
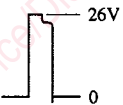
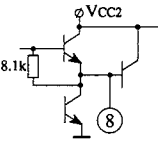

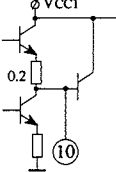
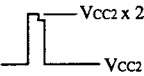
■ Electrical Characteristics (Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Load Short Circuit	R.Short	V _{CC2} = 26V	Should not be destroyed			
Deflection Current	I _{HP-P}	I ₁₀ when V _{CC2} =26V and e ₀ =2.5Vpp	1.8	2	2.2	App
Vertical Amp. Distortion Rate	T.H.D _H	Distortion rate of Pin 10 when V _{CC2} =26V and e ₀ =2.2Vpp		2	5	%
Input Threshold Voltage	V ₂		0.5	0.7	1	V
Sawtooth Wave Generation Start Voltage	V ₅		3.6	4.5	5.4	V
Midpoint Voltage	V _{MID}		11.5	12.8	14.1	V
Idling Current	I ₁₁		21	36	51	mA
Output Saturation Voltage (Up)	V ₁₁₋₁₀	V ₅ = 0V		3	4	V
Output Saturation Voltage (Down)	V ₁₀₋₉	V ₅ = 8V		1.5	2.5	V
Pump up Charge Saturation Voltage	V ₈₋₉	V ₅ = 0V		0.2	0.5	V
Pump up Discharge Saturation Voltage	V ₇₋₈	V ₅ = 0V		4.3	5.5	V

■ Application Circuit



Pin Descriptions

Pin No.	Pin Name	Typical Waveform	Description	I/O Impedance	Equivalent Circuit
1	Supply Voltage 1		$V_{CC1} = 9V$		
2	Vertical Pulse Input		Input the negative polarity pulse of a vertical synchronizing signal	∞ $1k\Omega$ (when saturated)	
3	Vertical Amplitude Control		Adjust the amplitude of a sawtooth signal by the external variable resistance	Low impedance	
4	50Hz/60Hz Switching		Pin for switching 50Hz and 60Hz	$6.6k\Omega$ (when saturated)	
5	Sawtooth wave Generation		Generate a sawtooth wave by discharging the external capacitor	∞ (when charged) 500Ω (when discharged)	
6	AC/DC Feedback Input		Input a waveform feedback from Pin 10	∞	
7	Supply Voltage 2		$V_{CC2} = 26V$		
8	Pulse Amplification		Pulse for amplifying pulse	Low impedance	
9	GND		GND		
10	Vertical Output		Output sawtooth wave current driving the deflection yoke	Low impedance	
11	Vertical Output Power Supply		Input a power waveform necessary for vertical deflection current		

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