

# AN5534

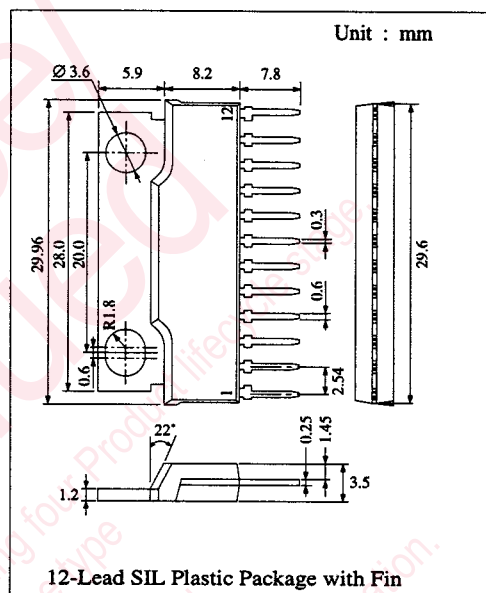
## IC for TV/Display Vertical Deflection Output

### ■ Description

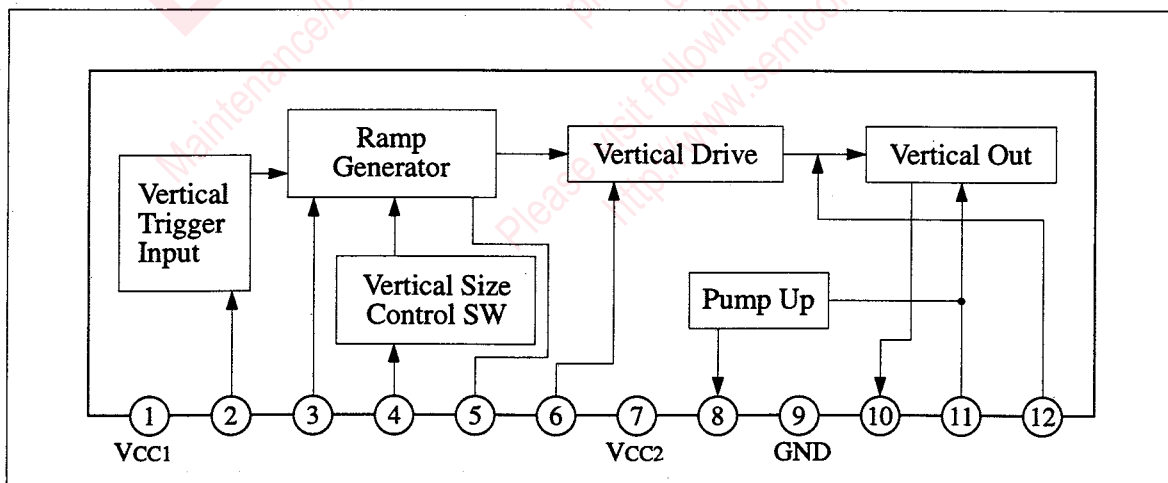
The AN5534 is an integrated circuit designed for vertical deflection output, such as TV and display. This IC contains the sawtooth wave generator so that it can perform AC/DC feedback loop independently.

### ■ 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	VCC1	15	V
	VCC2	30	V
Supply Current	ICC1	20	mA
Power Dissipation	PD	27	W
Operating Ambient Temperature	Topr	-20 ~ +70	°C
Storage Temperature	Tstg	-55 ~ +150	°C

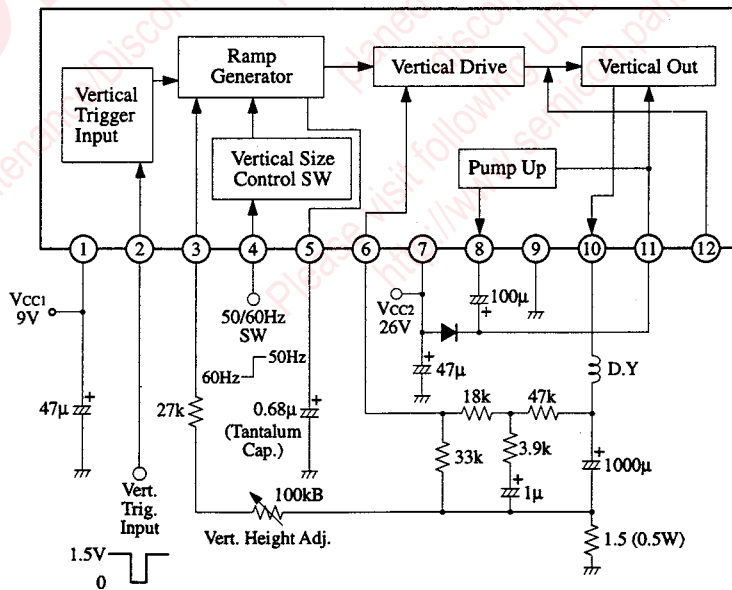
■ Recommended Operating Range (Ta=25°C)

Item	Symbol	Range
Operating Supply Voltage Range	VCC1	7V ~ 15V
	VCC2	10V ~ 30V


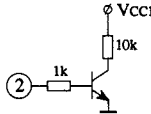

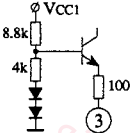
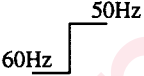
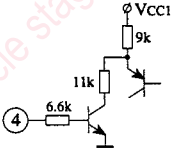
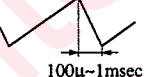
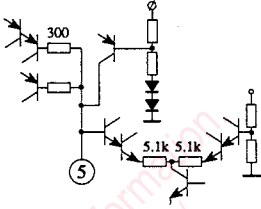

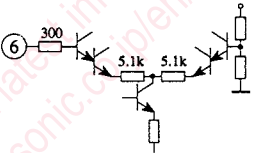
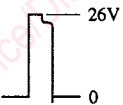
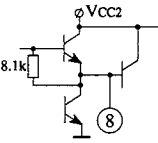

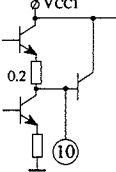
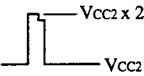
■ Electrical Characteristics (Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Load Short Circuit	R.Short	VCC2 = 26V	Should not be destroyed			
Deflection Current	IHP-P	I10 when VCC2=26V and eo=2.5Vpp	1.8	2	2.2	App
Vertical Amp. Distortion Rate	T.H.DH	Distortion rate of Pin 10 when VCC2=26V and eo=2.2Vpp		2	5	%
Input Threshold Voltage	V2		0.5	0.7	1	V
Sawtooth Wave Generation Start Voltage	V5		3.6	4.5	5.4	V
Midpoint Voltage	V <sub>MID</sub>		11.5	12.8	14.1	V
Idling Current	I11		21	36	51	mA
Output Saturation Voltage (Up)	V <sub>11-10</sub>	V5 = 0V		3	4	V
Output Saturation Voltage (Down)	V <sub>10-9</sub>	V5 = 8V		1.5	2.5	V
Pump up Charge Saturation Voltage	V <sub>8-9</sub>	V5 = 0V		0.2	0.5	V
Pump up Discharge Saturation Voltage	V <sub>7-8</sub>	V5 = 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	$\infty$ $1k\Omega$ (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	$\infty$ (when charged) $500\Omega$ (when discharged)	
6	AC/DC Feedback Input		Input a waveform feedback from Pin 10	$\infty$	
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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