

**SANYO**

No.4613

**STK79315A****Vertical Deflection Processor + Output Amplifier for CRT Displays ( $I_O$  max = 2A)****Overview**

The STK79315A is a vertical deflection output IC that incorporates a vertical signal processor, output amplifier and related functions into a single package.

**Applications**

- Large screen, ultra-high definition CRT displays

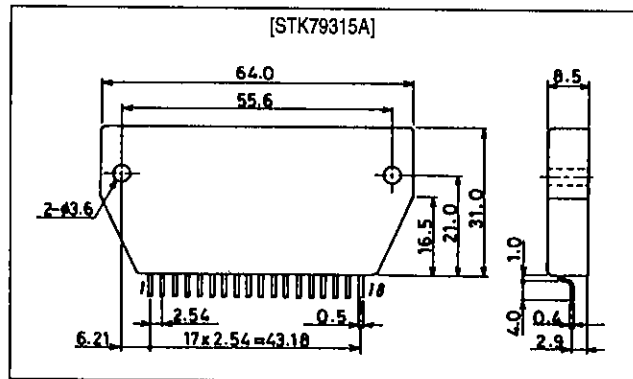
**Features**

- Vertical deflection basic functions (vertical oscillator, sawtooth waveform generator, output amplifier) built-in
- Vertical centering correction circuit built-in, variable over a wide range, DC controllable
- Pump-up circuit built-in for low power dissipation
- Supply-independent pump-up circuit to cover different trace times
- High-current, high withstand voltage output amplifier ( $I_{OP-P}$  max = 4A at  $V_{CC}$  max = 160V)
- Wide vertical pull-in range (> 120Hz), adjustment-free oscillator
- DC controllable vertical amplitude
- Excellent frequency characteristics for an S-curve correction range
- Good interlace characteristics
- Quiescent current adjustment for zero crossover distortion in the output amplifier
- Wide supply range for all loads

**Package Dimensions**

unit:mm

4144



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## Specifications

### Maximum Ratings at $T_a = 25^\circ\text{C}$

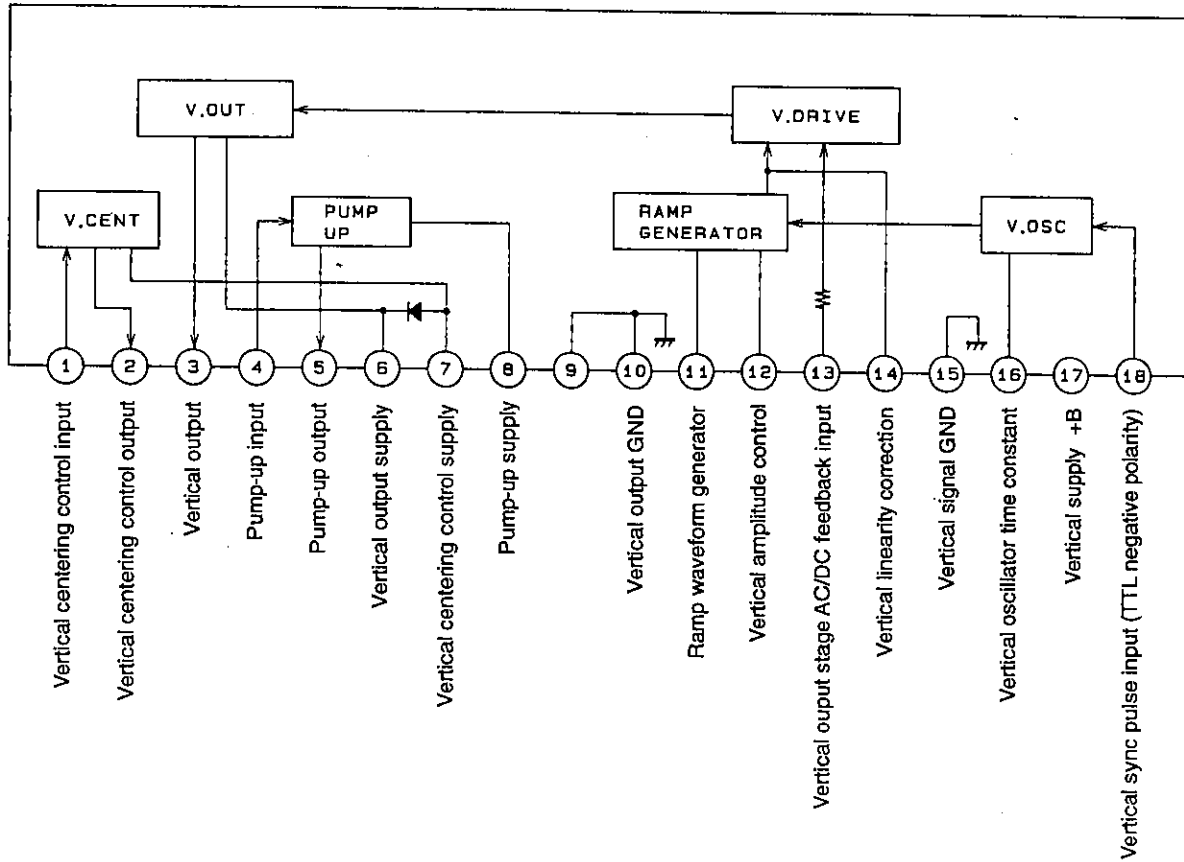
Parameter	Symbol	Conditions	Ratings	Unit
<b>Vertical output block</b>				
Supply voltage	$V_{CC6}$	Pin 6	160	V
	$V_{CC7,8}$	Pins 7 and 8	80	V
Deflection current	$I_{P-O}$	Pin 3	$\pm 2.0$	A
Output current	$I_O$	Pin 2	$\pm 0.7$	A
Thermal resistance	$\theta_{j-c1}$	Vertical output transistors 11 and 12	6.0	$^\circ\text{C/W}$
	$\theta_{j-c2}$	Vertical centering correction transistors 18 and 19	20	$^\circ\text{C/W}$
<b>Deflection signal processor block</b>				
Supply voltage	$V_{CC17}$	Pin 17	14	V
Junction temperature	$T_J$		150	$^\circ\text{C}$
Operating substrate temperature	$T_c$		105	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-30 to +125	$^\circ\text{C}$

### Operating Characteristics at $T_a = 25^\circ\text{C}$ , $V_{CC17} = 12\text{V}$

Parameter	Symbol	Conditions	min	typ	max	Unit
<b>Deflection processor block</b>						
Pin 17 current consumption	$I_{CC17}$		10	-	20	mA
Vertical frequency pull-in range	$f_{VP}$	$V_{sync} f = 160\text{Hz}$	120	-	-	Hz
Vertical free-running oscillator frequency	$f_{VOSC}$	$f_{VOSC} \text{ center} = 55\text{Hz}$	50	-	60	Hz
Vertical frequency adjustment voltage characteristic	$\Delta f_{VW}$	55Hz at $V_{CC17} = 12 \pm 1\text{V}$	-0.1	-	+0.1	Hz
Vertical oscillator start voltage	$V_{VOSC}$		-	-	4.0	V
Vertical frequency temperature characteristic	$f_{VT}$		-0.028	-	+0.028	Hz/ $^\circ\text{C}$
Vertical amplitude control pin voltage	V12		5.9	6.1	6.3	V
Ramp waveform generator current	I11		55	60	65	$\mu\text{A}$
Vertical AC/DC feedback pin voltage	V13		6.0	6.3	6.6	V
<b>Vertical output block</b>						
Idling current	$I_{CCO6}$	$V_6 = V_7 = 35\text{V}$	-	30	-	mA
Neutral voltage	$V_{N3}$	$V_6 = V_7 = 35\text{V}$	-	21	-	V
Deflection output saturation voltage (lower)	$V_{sat3-9}$	Between pins 3 and 9, $V_6 = V_7 = 35\text{V}$ , $I_3 = +1.3\text{A}$	-	-	2.0	V
Deflection output saturation voltage (upper)	$V_{sat6-3}$	Between pins 6 and 3, $V_6 = V_7 = 35\text{V}$ , $I_3 = -1.3\text{A}$	-	-	3.2	V
Pump-up charge saturation voltage (1)	$V_{sat5-9}$	Between pins 5 and 9, $V_8 = 35\text{V}$ , $I_5 = +30\text{mA}$	-	-	2.0	V
Pump-up charge saturation voltage (2)	$V_{sat8-5}$	Between pins 8 and 5, $V_8 = 35\text{V}$ , $I_5 = -1.3\text{A}$	-	-	3.0	V
Center correction saturation voltage (lower)	$V_{sat2-9}$	Between pins 2 and 9, $V_7 = 35\text{V}$ , $I = +0.7\text{A}$	-	-	2.0	V
Center correction saturation voltage (upper)	$V_{sat7-2}$	Between pins 7 and 2, $V_7 = 35\text{V}$ , $I = -0.7\text{A}$	-	-	2.0	V

Note. Supply is of constant-voltage type.

# Block Diagram



A01686



# Sample Application Circuit (2)

## Dual-Supply Vertical Output Stage

