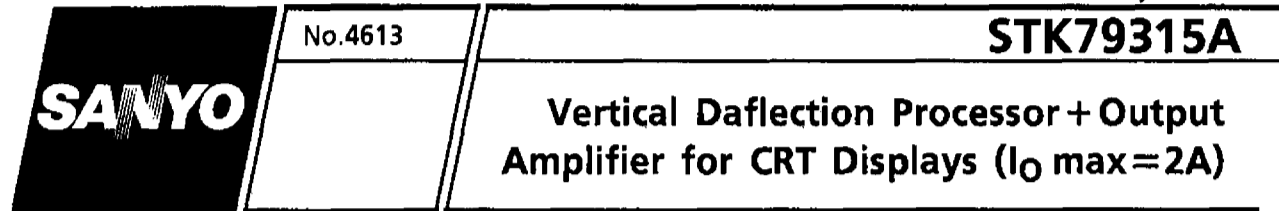


Ordering number : EN 4613

Thick Film Hybrid IC



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

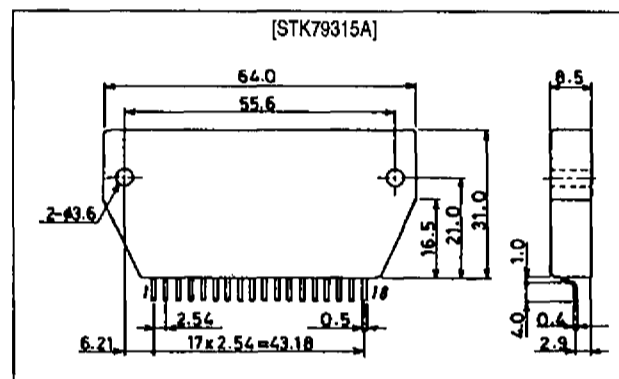
Features

- 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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21995TH (ID) No. 4613-1/6

STK79315A

Specifications

Maximum Ratings at Ta = 25°C

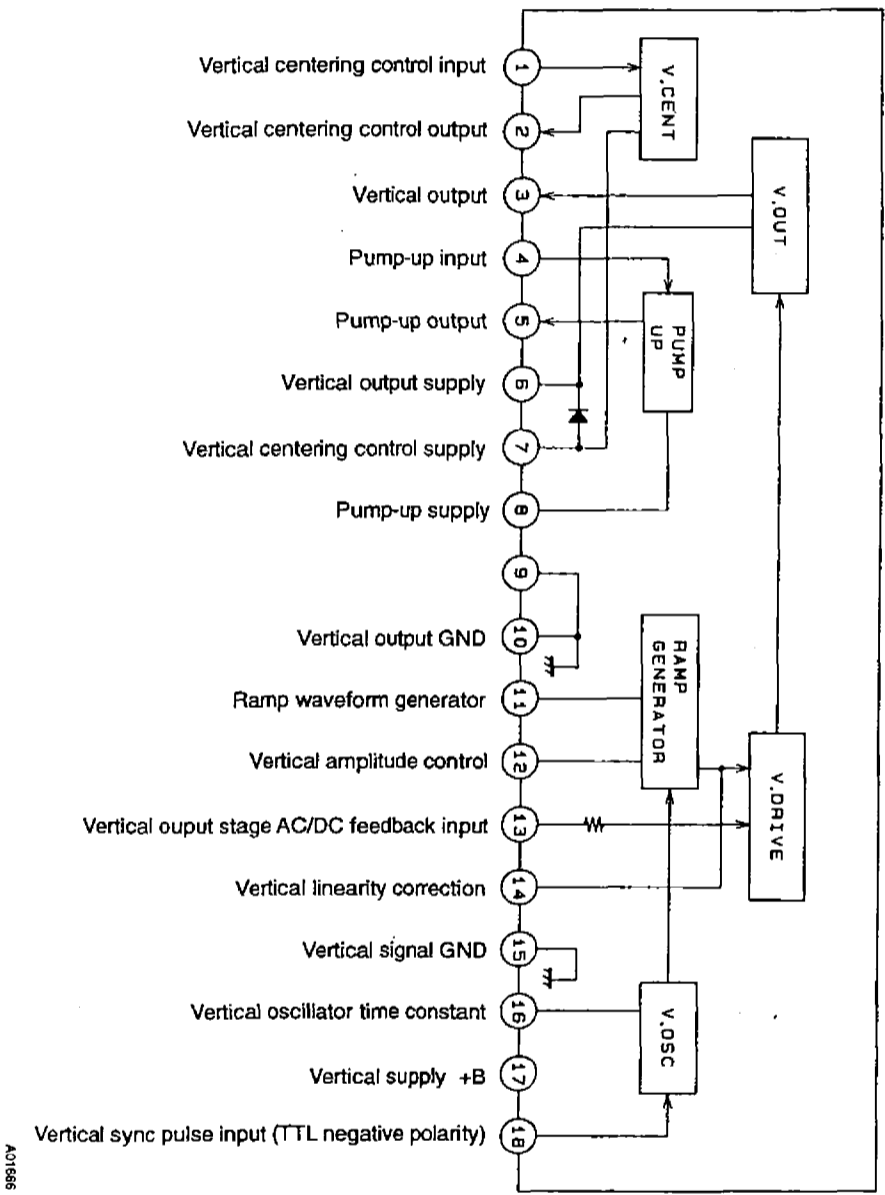
| Parameter | Symbol | Conditions | Ratings | Unit |
|--|--------------------|---|-------------|------|
| Vertical output block | | | | |
| Supply voltage | V _{CC6} | Pin 6 | 160 | V |
| | V _{CC7,8} | Pins 7 and 8 | 80 | V |
| Deflection current | I _{P.O} | Pin 3 | ±2.0 | A |
| Output current | I _O | Pin 2 | ±0.7 | A |
| Thermal resistance | θ _{j-c1} | Vertical output transistors 11 and 12 | 6.0 | °C/W |
| | θ _{j-c2} | Vertical centering correction transistors 18 and 19 | 20 | °C/W |
| Deflection signal processor block | | | | |
| Supply voltage | V _{CC17} | Pin 17 | 14 | V |
| Junction temperature | T _J | | 150 | °C |
| Operating substrate temperature | T _c | | 105 | °C |
| Storage temperature | T _{stg} | | -30 to +125 | °C |

Operating Characteristics at Ta = 25°C, V_{CC17} = 12V

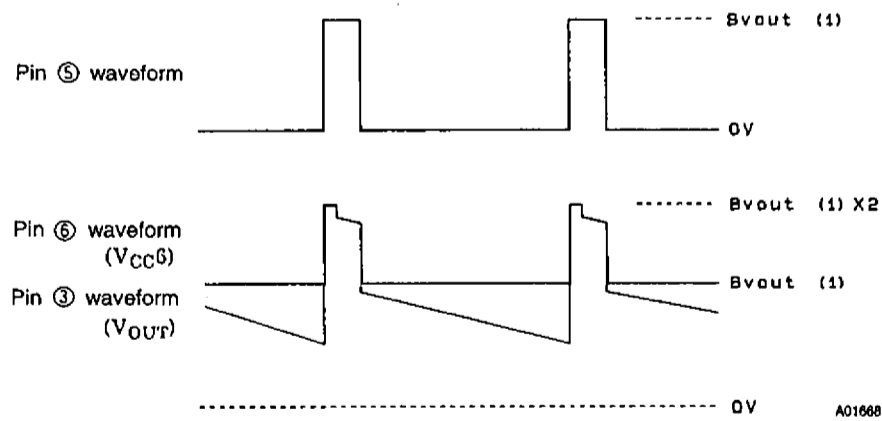
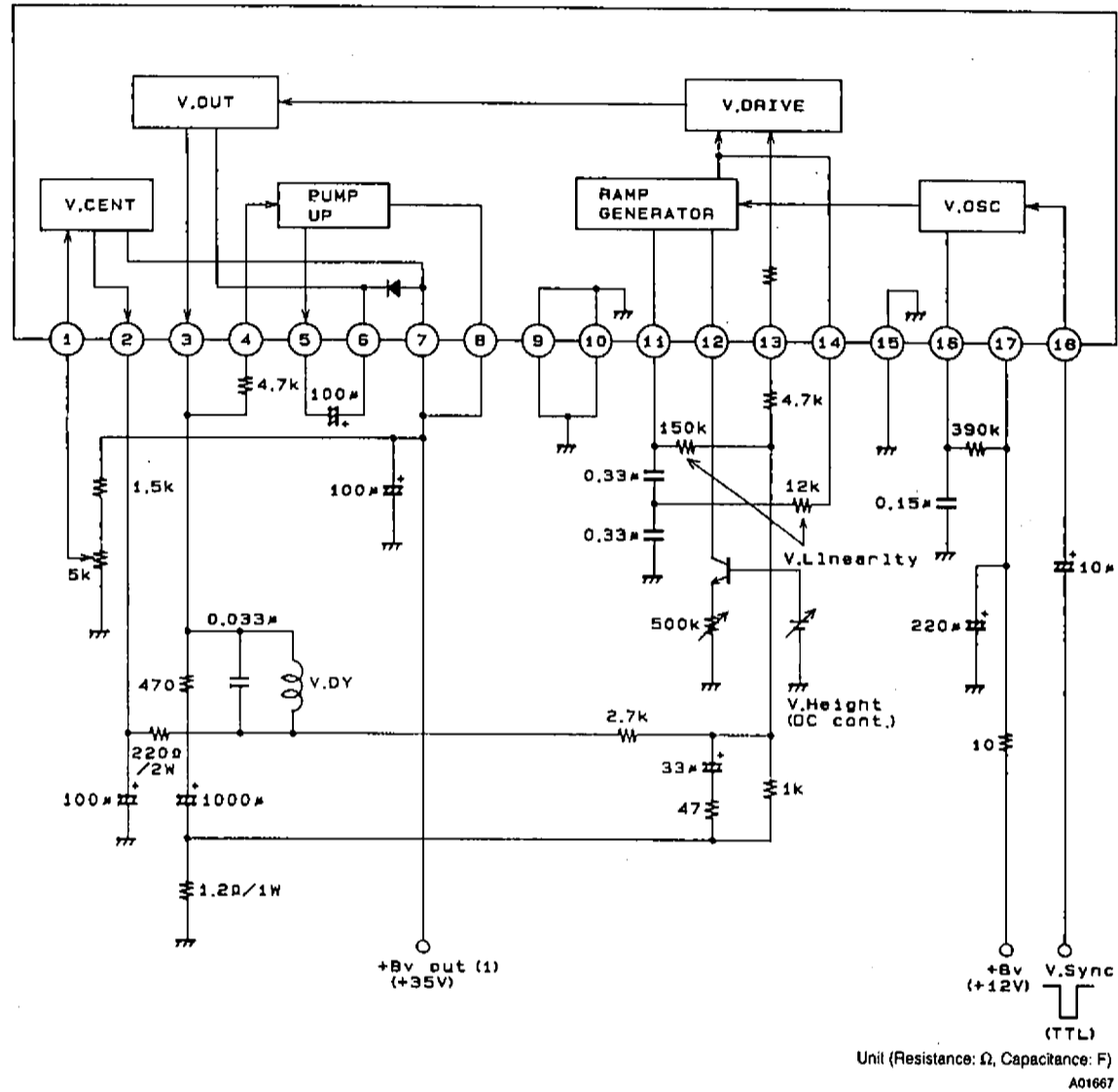
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|--|---------------------|---|--------|-----|--------|-------|
| Deflection processor block | | | | | | |
| Pin 17 current consumption | I _{CC17} | | 10 | - | 20 | mA |
| Vertical frequency pull-in range | f _{VP} | V. sync f = 160Hz | 120 | - | - | Hz |
| Vertical free-running oscillator frequency | f _{VOSC} | f _{VOSC} center = 55Hz | 50 | - | 60 | Hz |
| Vertical frequency adjustment voltage characteristic | Δf _{VV} | 55Hz at V _{CC17} = 12 ± 1V | -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/°C |
| Vertical amplitude control pin voltage | V12 | | 5.9 | 6.1 | 6.3 | V |
| Ramp waveform generator current | I11 | | 55 | 60 | 65 | μA |
| Vertical AC/DC feedback pin voltage | V13 | | 6.0 | 6.3 | 6.6 | V |
| Vertical output block | | | | | | |
| Idling current | I _{CCO6} | V6 = V7 = 35V | - | 30 | - | mA |
| Neutral voltage | V _{N3} | V6 = V7 = 35V | - | 21 | - | V |
| Deflection output saturation voltage (lower) | V _{sat3-9} | Between pins 3 and 9, V6 = V7 = 35V, I3 = +1.3A | - | - | 2.0 | V |
| Deflection output saturation voltage (upper) | V _{sat6-3} | Between pins 6 and 3, V6 = V7 = 35V, I3 = -1.3A | - | - | 3.2 | V |
| Pump-up charge saturation voltage (1) | V _{sat5-9} | Between pins 5 and 9, V8 = 35V, I5 = +30mA | - | - | 2.0 | V |
| Pump-up charge saturation voltage (2) | V _{sat8-5} | Between pins 8 and 5, V8 = 35V, I5 = -1.3A | - | - | 3.0 | V |
| Center correction saturation voltage (lower) | V _{sat2-9} | Between pins 2 and 9, V7 = 35V, I1 = +0.7A | - | - | 2.0 | V |
| Center correction saturation voltage (upper) | V _{sat7-2} | Between pins 7 and 2, V7 = 35V, I1 = -0.7A | - | - | 2.0 | V |

Note. Supply is of constant-voltage type.

Block Diagram



Sample Application Circuit (1)
Single-Supply Vertical Output Stage



Sample Application Circuit (3)
Dual-Supply Switching Vertical Output Stage

