

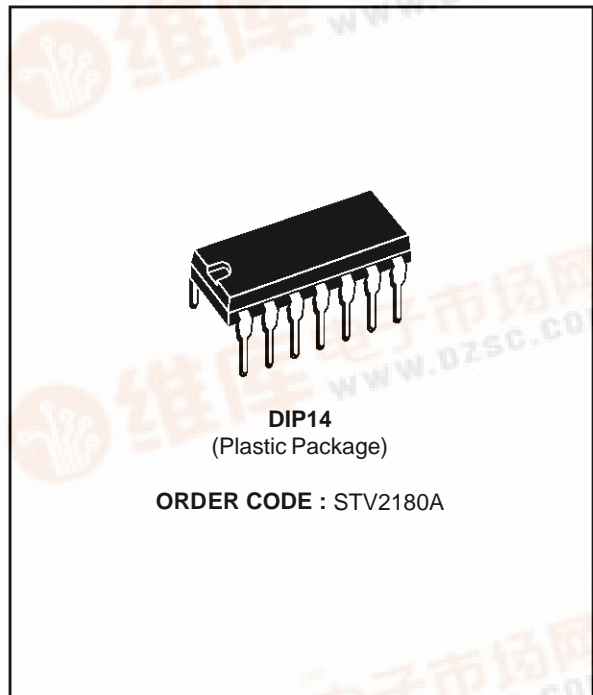


# STV2180A

## BASE BAND CHROMA DELAY LINE

### PRELIMINARY DATA

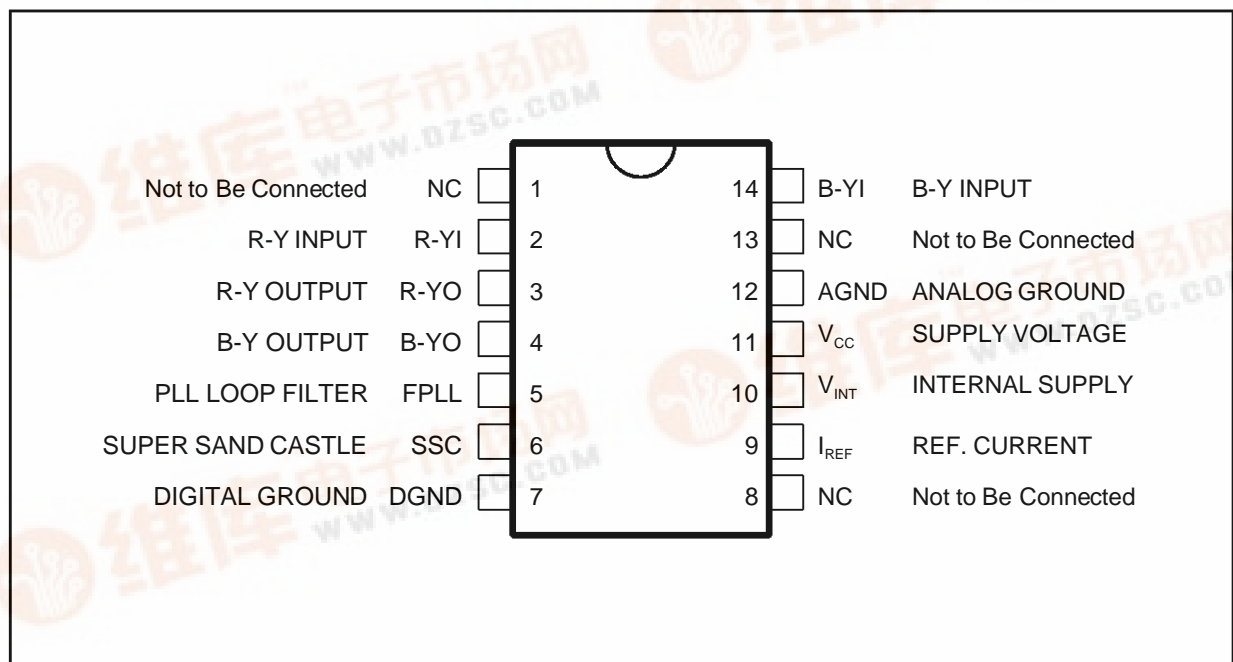
- DUAL SWITCHED CAPACITOR DELAY LINE
- 3MHz CLOCK DERIVED FROM 6MHz VCO LOCKED BY THE BURST GATE PULSE
- SAMPLE AND HOLD CIRCUITS AND LOW-PASS FILTERS TO SUPPRESS THE 3MHz CLOCK RESIDUAL
- CLAMPED B-Y AND R-Y INPUTS
- OUTPUT BUFFERS
- **ADJUSTMENT-FREE APPLICATION**
- DIP14 PACKAGE



### DESCRIPTION

The STV2180A is an integrated base band chroma delay line with one line delay, which has been designed to match chroma decoders with colour difference signal outputs (R-Y) and (B-Y).

### PIN CONNECTIONS

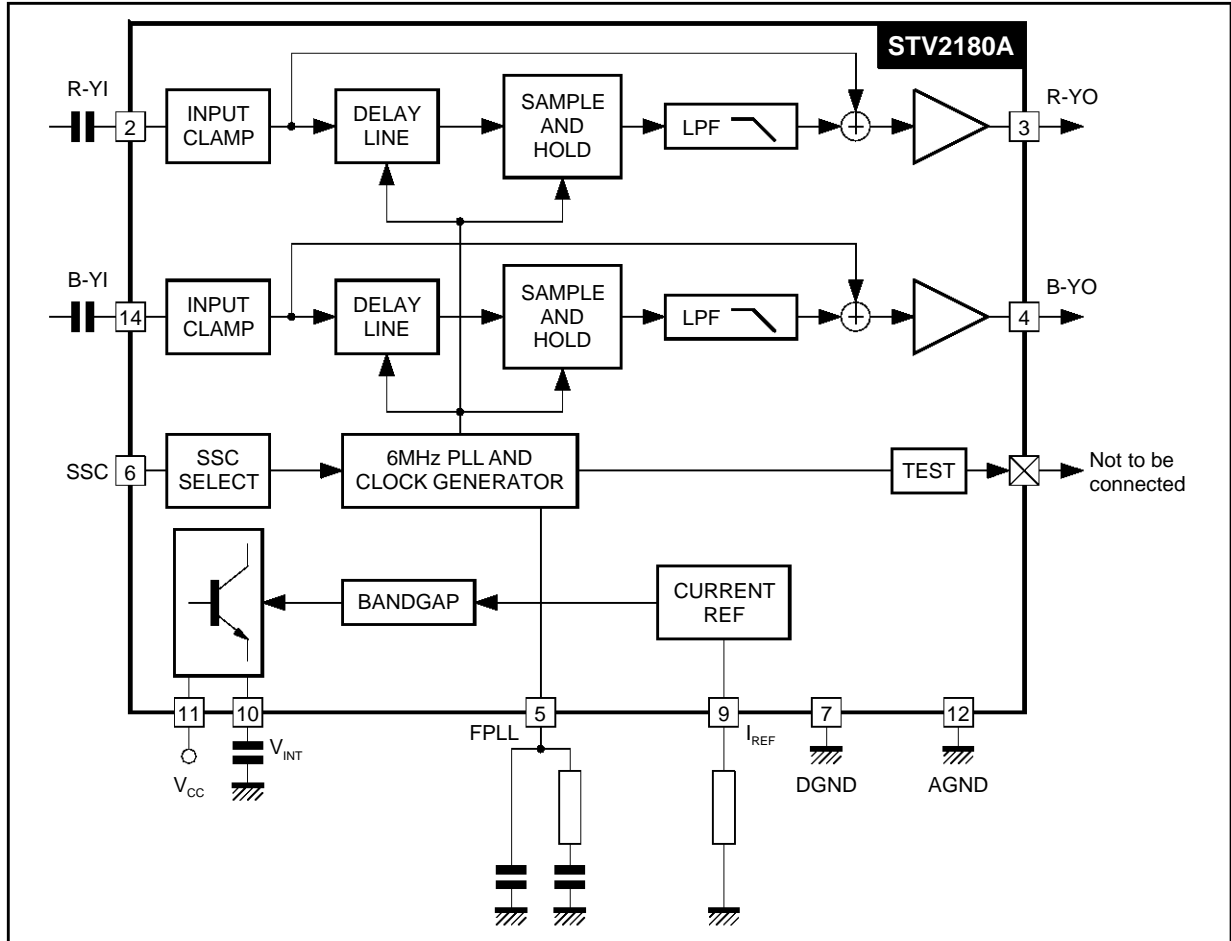


2180A-01.EPS



# STV2180A

## BLOCK DIAGRAM



2180A-02.EPS

## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CC}$	Supply Voltage (Pin 11)	11	V
$T_A$	Operating Ambient Temperature	0 to 70	°C
$T_{stg}$	Storage Temperature	-25 to +150	°C
$R_{th(j-a)}$	Junction-Ambiant Thermal Resistance $P_d = 1W$	90	°C/W

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**ELECTRICAL CHARACTERISTICS**

$T_{amb} = 25^{\circ}\text{C}$ ,  $V_{CC} = 9\text{V}$ ,  $R_9 = 4.02\text{k}\Omega$ , unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
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SUPPLY/ $V_{REF}$  (Pins 11 and 10)

$V_{CC}$	Supply Voltage		8.5	9	9.5	V
$I_{CC}$	Supply Current			15	25	mA
$P_d$	Power Consumption	$V_{CC} = 9\text{V}$		135	240	mW
$V_{int}$	Internal Voltage			7		V

## SAND CASTLE INPUT (Pin 6)

FSSC	Burst Gate Frequency	No input signal	14.5	15.625	16.5	kHz
$V_{TH}$	Threshold Voltage (Burst Gate)		3.2	3.5	3.8	V
$C_{in}$	Input Capacitance				12	pF

## COLOR DIFFERENCE INPUT SIGNALS (Pins 2 and 14)

R-Y IPN	R-Y Typical Input Signal PAL & NTSC	Peak-to-peak value		525		mV <sub>PP</sub>
R-Y IS	R-Y Typical Input Signal SECAM	Peak-to-peak value		1.05		V <sub>PP</sub>
B-Y IPN	B-Y Typical Input Signal PAL & NTSC	Peak-to-peak value		665		mV <sub>PP</sub>
B-Y IS	B-Y Typical Input Signal SECAM	Peak-to-peak value		1.33		V <sub>PP</sub>
$R_{in}$	Input Resistance		10			k $\Omega$
$C_{in}$	Input Capacitance				12	pF
$V_{Clamp}$	Clamping Voltage			2.7		V
$I_{Clamp}$	Clamping Current	$V_{in} = V_{Clamp} \pm 0.2\text{V}$		$\pm 50$		$\mu\text{A}$

## COLOR DIFFERENCE OUTPUT SIGNALS (Pins 3 and 4)

B-Y O	B-Y Output Signal	Peak-to-peak value			1.8	V <sub>PP</sub>
R-Y O	R-Y Output Signal	Peak-to-peak value			1.8	V <sub>PP</sub>
DG	Differential Gain	SECAM $V_n/V_{n-1} : V_{in} = 1\text{V}_{PP}$	-0.4	0	+0.4	dB
GPN	PAL-NTSC Gain	$V_{in} = 0.5\text{V}_{PP}$	5.8	6.3	6.8	dB
GS	SECAM Gain	$V_{in} = 1\text{V}_{PP}$	-0.5	0	+0.5	dB
$V_{Noise}$	RMS Noise Voltage	$R_i = 300\Omega$ $BW = 10\text{kHz to } 1\text{MHz}$		2		mV <sub>Rms</sub>
$R_{out}$	Output Resistance			200		$\Omega$
Delay	Delayed Signal Delay	Referred to non delayed output	63.93	64	64.07	$\mu\text{s}$
Non Delay	Non Delayed Signal Delay	Referred to input		100		ns
TR	Output Signal Transient Time	500ns transient input signal		650	1000	ns

## PLL FILTER LOOP (Pin 5)

$I_{Charg}$	Charging Current			100		$\mu\text{A}$
$V_{PLL}$	DC Voltage			3.5		V

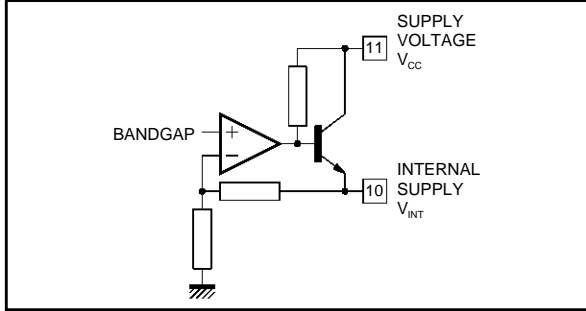
## CURRENT REFERENCE (Pin 9)

$V_{DC}$	DC Voltage	$R_9 = 4.02\text{k}\Omega$ to ground		1.15		V
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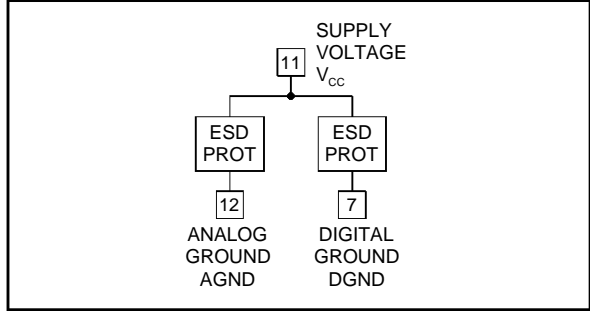
INPUT/OUTPUT PIN CONFIGURATION

Pins 10, 11 :  $V_{INT}$  and  $V_{CC}$



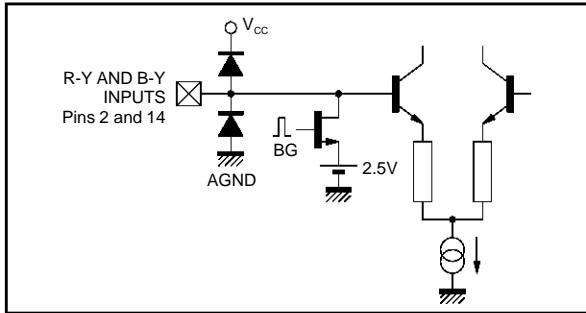
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Pins 7, 11, 12 :  $DGND$ ,  $V_{CC}$ ,  $AGND$



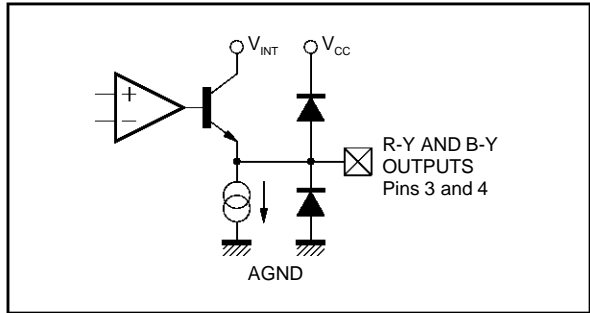
2180A-04.EPS

Pins 2, 14 : R-YI, B-YI



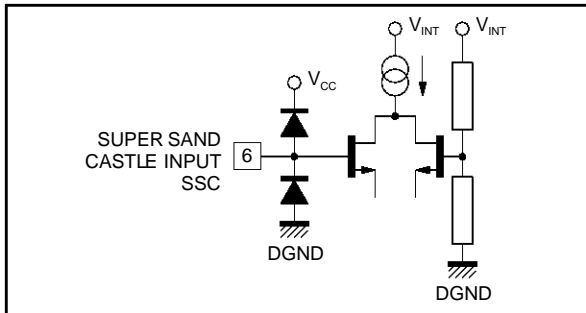
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Pins 3, 4 : R-YO, B-YO



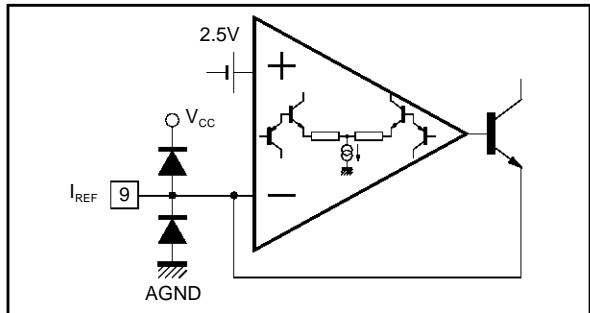
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Pin 6 : SSC



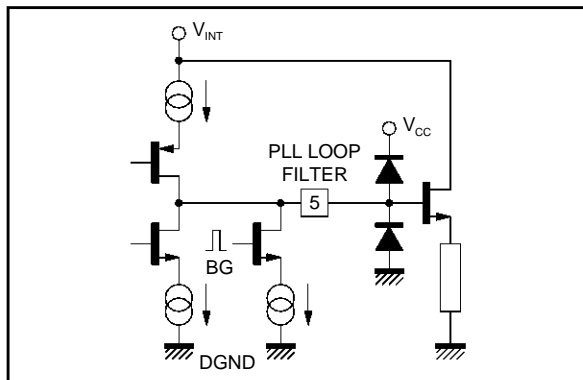
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Pin 9 :  $I_{REF}$



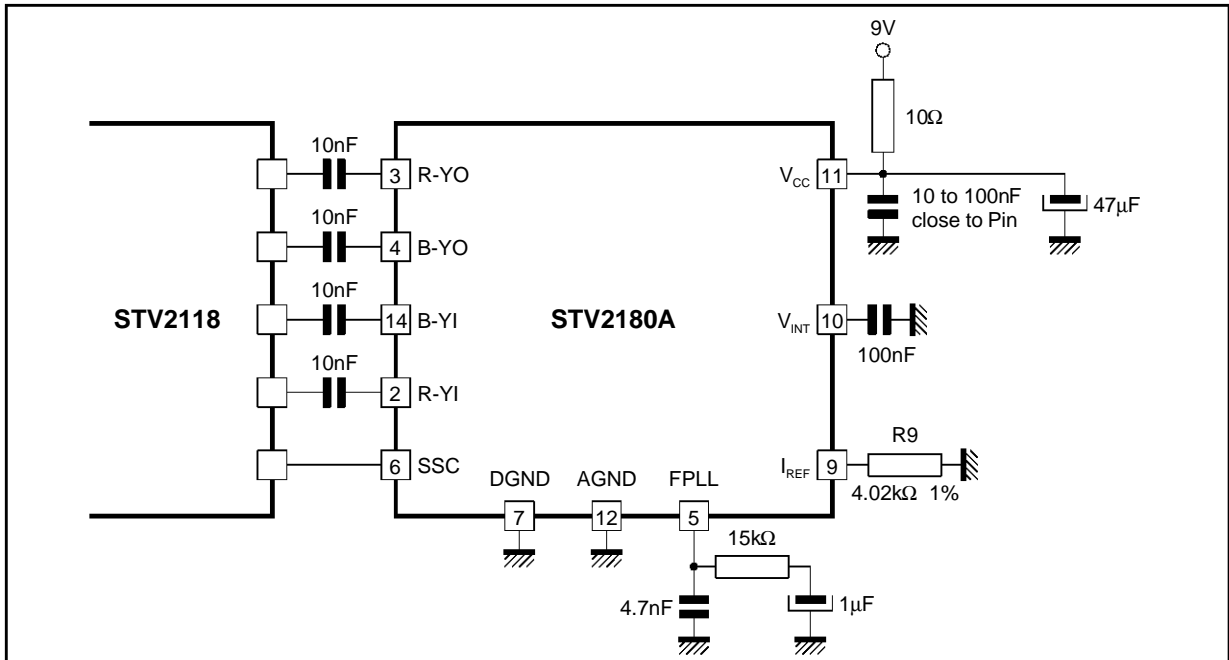
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Pin 5 : FPLL



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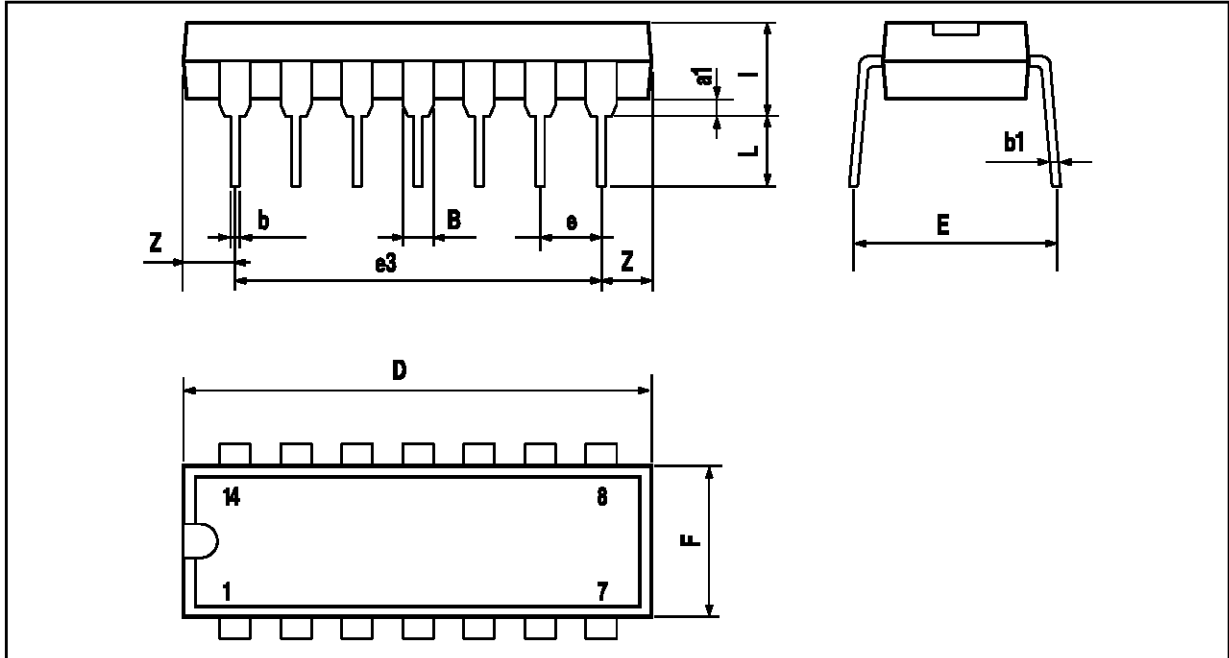
TYPICAL APPLICATION



# STV2180A

## PACKAGE MECHANICAL DATA

14 PINS - PLASTIC PACKAGE



PM-DIP14.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.51			0.020		
B	1.39		1.65	0.055		0.065
b		0.5			0.020	
b1		0.25			0.010	
D			20			0.787
E		8.5			0.335	
e		2.54			0.100	
e3		15.24			0.600	
F			7.1			0.280
l			5.1			0.201
L		3.3			0.130	
Z	1.27		2.54	0.050		0.100

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