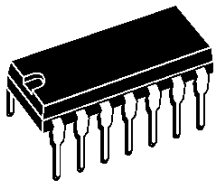
SGS-THOMSON MICROELECTRONICS

STV2180

BASE BAND CHROMA DELAY LINE

- 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



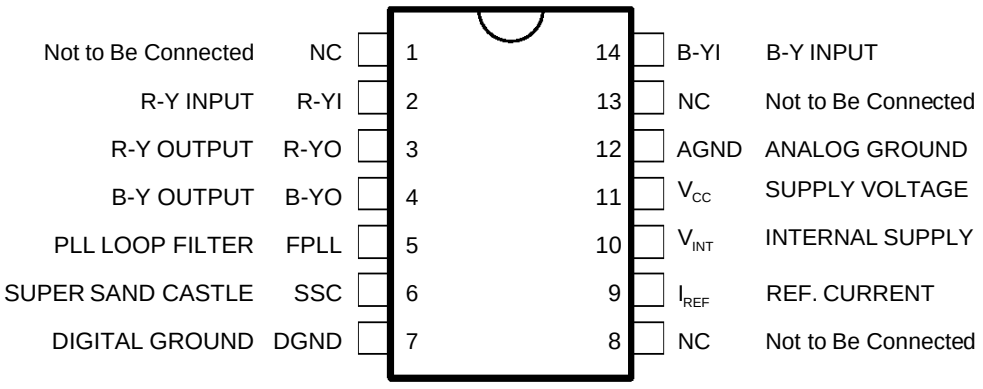
DIP14
(Plastic Package)

ORDER CODE : STV2180

DESCRIPTION

The STV2180 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



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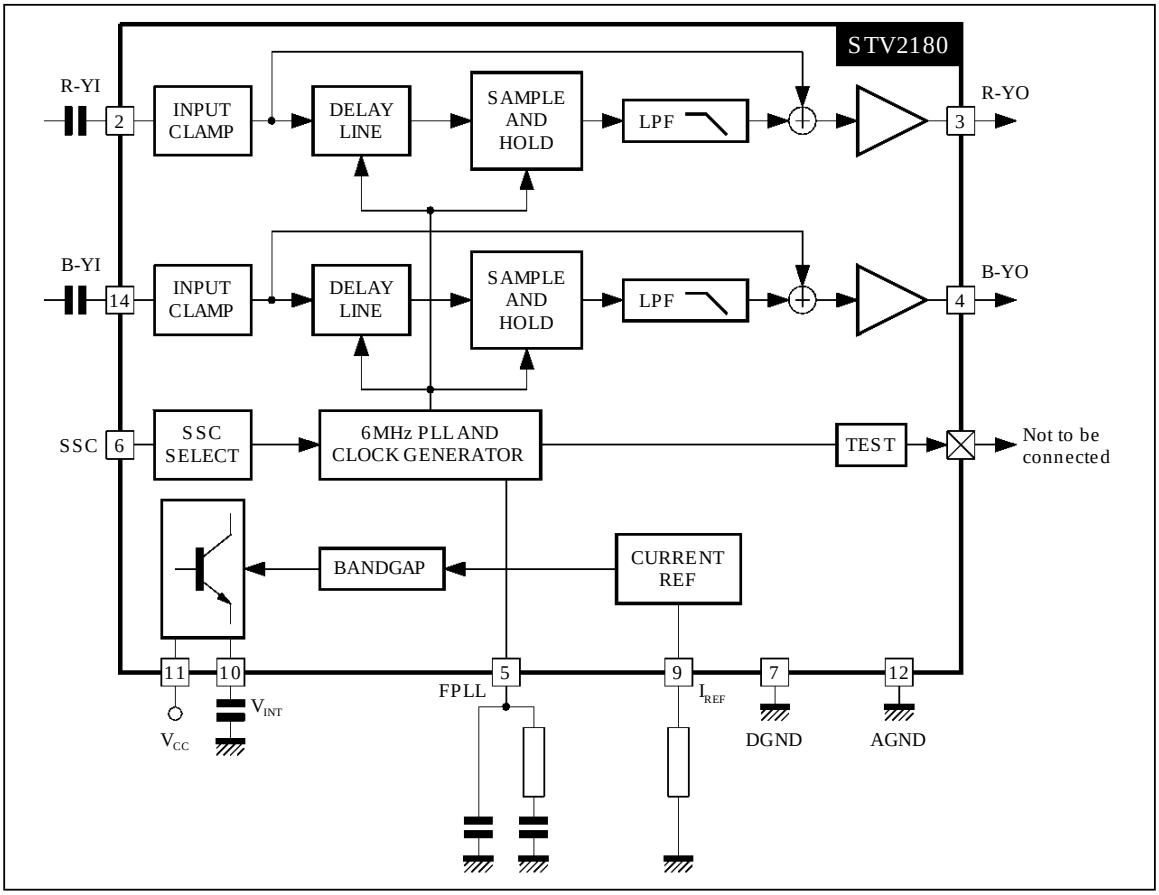
BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage (Pin 11)	11	V
T_A	Operating Ambiant 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°C, V_{CC} = 9V, R9 = 4.02kΩ, unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
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} = 9V		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_{PP}
R-Y IS	R-Y Typical Input Signal SECAM	Peak-to-peak value		1.05		V_{PP}
B-Y IPN	B-Y Typical Input Signal PAL & NTSC	Peak-to-peak value		665		mV_{PP}
B-Y IS	B-Y Typical Input Signal SECAM	Peak-to-peak value		1.33		V_{PP}
R_{in}	Input Resistance		10			kΩ
C_{in}	Input Capacitance				12	pF
V_{Clamp}	Clamping Voltage			2.7		V
I_{Clamp}	Clamping Current	V_{in} = V_{Clamp} ±0.2V		±50		µA
COLOR DIFFERENCE OUTPUT SIGNALS (Pins 3 and 4)						
B-Y O	B-Y Output Signal	Peak-to-peak value			1.8	V_{PP}
R-Y O	R-Y Output Signal	Peak-to-peak value			1.8	V_{PP}
DG	Differential Gain	SECAM V_n/V_{n-1} : V_{in} = $1V_{PP}$	-0.4	0	+0.4	dB
GPN	PAL-NTSC Gain	V_{in} = $0.5V_{PP}$	5.8	6.3	6.8	dB
GS	SECAM Gain	V_{in} = $1V_{PP}$	-0.2	0.3	+0.8	dB
V_{Noise}	RMS Noise Voltage	Ri = 300Ω BW = 10kHz to 1MHz		2		mV_{Rms}
R_{out}	Output Resistance			200		Ω
Delay	Delayed Signal Delay	Referred to non delayed output	63.93	64	64.07	µs
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		µA
V_{PLL}	DC Voltage			3.5		V
CURRENT REFERENCE (Pin 9)						
V_{DC}	DC Voltage	R9 = 4.02kΩ to ground		1.15		V

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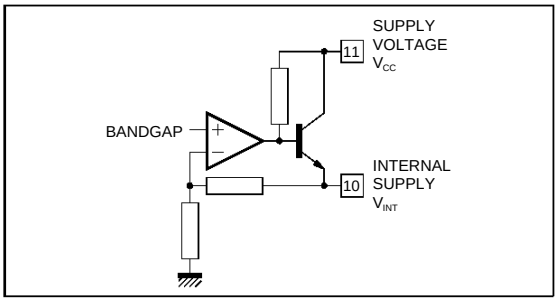
INPUT/OUTPUT PIN CONFIGURATION

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



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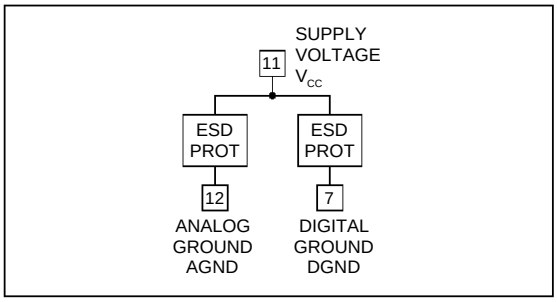
Pins 7, 11, 12 : DGND, V_{CC}, AGND



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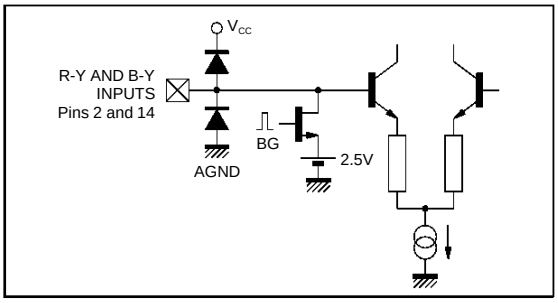
Pins 2, 14 : R-YI, B-YI



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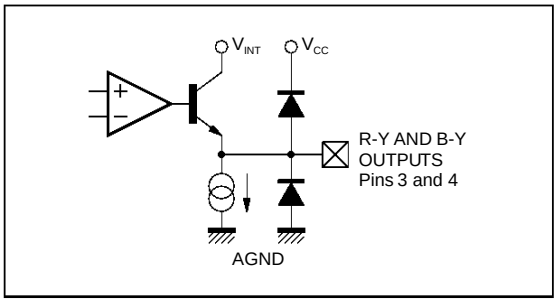
Pins 3, 4 : R-YO, B-YO



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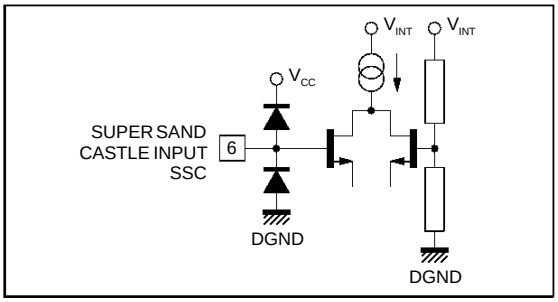
Pin 6 : SSC



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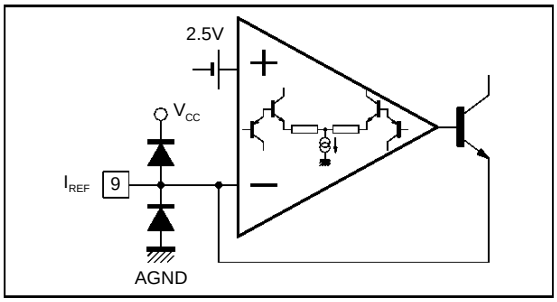
Pin 9 : I_{REF}



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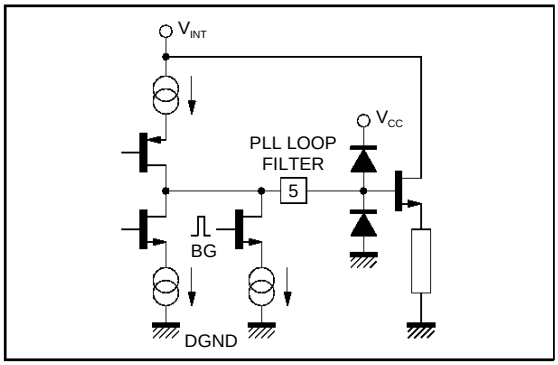
Pin 5 : FPLL



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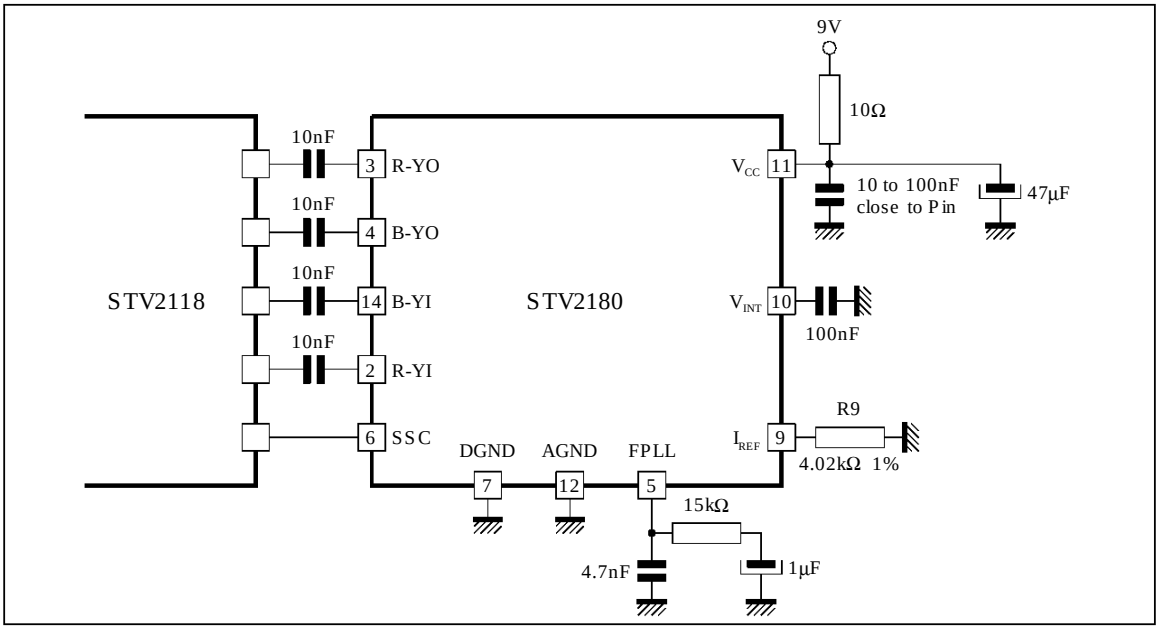
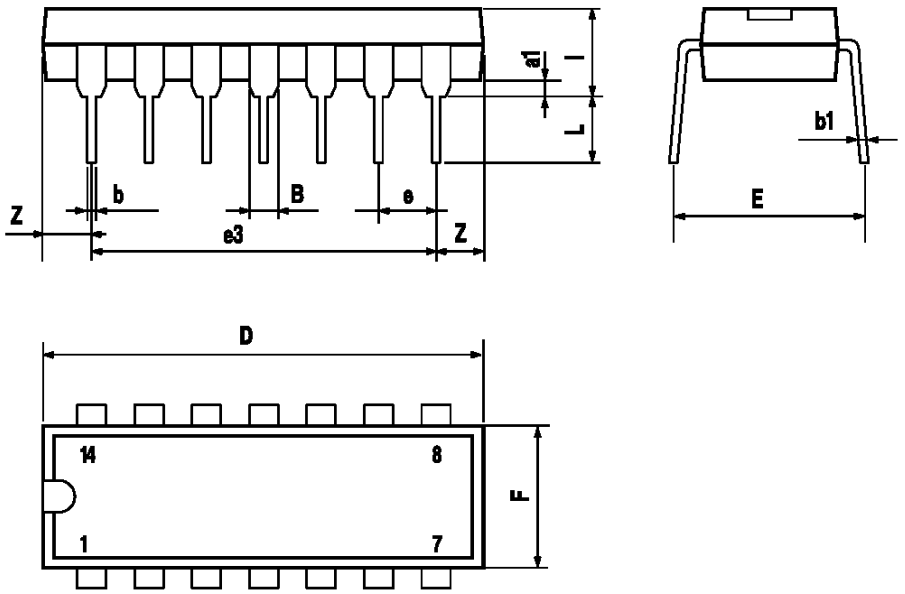
TYPICAL APPLICATION



PACKAGE MECHANICAL DATA

14 PINS - PLASTIC PACKAGE



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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
I			5.1			0.201
L		3.3			0.130	
Z	1.27		2.54	0.050		0.100

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