

COLOUR DEMODULATOR COMBINATION

The TDA2520 is an integrated synchronous demodulator combination for colour television receivers incorporating the following functions :

- 8.8 MHz oscillator followed by a divider giving two 4.4 MHz signals used as reference signals
- keyed burst phase detector for optimum noise behaviour
- a stage to obtain chrominance signal control (a. c. c.) and an a. c. c. reference level
- a colour killer and identification signal detector
- two synchronous demodulators for the (B-Y) and (R-Y) signals
- temperature compensated emitter follower outputs
- PAL switch
- PAL flip-flop
- integrated capacitors in the symmetrical demodulators reduce unwanted carrier-signals at the outputs.

QUICK REFERENCE DATA

Supply voltage	V_{12-16}	typ.	12	V
Supply current	I_{12}	typ.	40	mA
Colour difference output signals peak-to-peak values				
	-(R-Y)	$V_{3-16(p-p)}$	>	2,4 V
	-(G-Y)	$V_{2-16(p-p)}$	>	1,35 V
	-(B-Y)	$V_{1-16(p-p)}$	>	3 V
Impedance of colour difference signal outputs		typ.	250	Ω

PACKAGE OUTLINES

TDA2520 : 16-lead DIL ; plastic (SOT-38).

TDA2520Q : 16-lead QIL ; plastic (SOT-58).



RATINGS Limiting values in accordance with the Absolute Maximum System (IEC 134)

Voltage

Supply voltage V_{12-16} max. 14 V

Power dissipation

Total power dissipation P_{tot} max. 600 mW

Temperatures

Storage temperature T_{stg} -20 to +125 °C

Operating ambient temperature T_{amb} -20 to +60 °C

CHARACTERISTICS at $V_{12-16} = 12$ V; $T_{amb} = 25$ °C

Demodulator part

Ratio of demodulated signals

	$B - Y/R - Y:$	$\frac{V_{1-16}}{V_{3-16}}$	typ.	1, 78
	$G - Y/R - Y:$	$\frac{V_{2-16}}{V_{3-16}}$	typ.	0, 85 1)
	$G - Y/R - Y:$	$\frac{V_{2-16}}{V_{3-16}}$	typ.	0, 17 2)

Colour difference output signals ³⁾

peak-to-peak values	-(R - Y)	$V_{3-16(p-p)}$	>	2, 4 V
	-(G - Y)	$V_{2-16(p-p)}$	>	1, 35 V
	-(B - Y)	$V_{1-16(p-p)}$	>	3 V

Impedance of colour difference signal outputs

	$ Z_{3-16} $	typ.	250 Ω
	$ Z_{2-16} $	typ.	250 Ω
	$ Z_{1-16} $	typ.	250 Ω

H/2 ripple at R-Y output (peak-to-peak value) < 10 mV

Blanking and keying pulse

burst keying: active for	V_{15-16}	>	7, 5 V
inactive for	V_{15-16}	<	6, 5 V
blanking: active for	V_{15-16}	>	2 V
inactive for	V_{15-16}	<	1 V

¹⁾ The demodulators are driven by a chrominance signal of equal amplitude for the (R - Y) and the (B - Y) components. The phase of the (R - Y) chrominance signal equals the phase of the (R - Y) reference signal.

The same holds for the (B - Y) signals.

²⁾ As under note 1, but the phase of the (R - Y) reference signal reversed.

³⁾ The d. c. level of the colour difference outputs can be adjusted from 6 to 10 V at pin 4.

TDA2520 TDA2520Q

CHARACTERISTICS (continued)

Reference part

Colour burst (peak-to-peak value)	$V_{7-16(p-p)}$	typ.	0,5 V
Phase difference between reference and burst signals for ± 400 Hz deviation of crystal frequency		<	$\pm 5^\circ$
Overall holding range with typical crystal	Δf	typ.	± 500 Hz
A.C.C. reference output voltage	V_{13-16}	typ.	7 V
A.C.C. voltage at 0,5 V peak-to-peak burst at correct phase with zero burst	V_{14-16} V_{14-16}	typ. typ.	5,5 V 7,0 V
Oscillator input resistance	R_{11-16}	typ.	270 Ω
Oscillator input capacitance	C_{11-16}	see note	
Oscillator output resistance	R_{10-16}	typ.	200 Ω

Note : to be established.