

## COLOUR DEMODULATOR COMBINATION

The TDA2522 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.c.c. detector and amplifier
- a colour killer
- two synchronous demodulators for the (B-Y) and (R-Y) signals
- temperature compensated emitter follower outputs
- PAL switch and PAL flip-flop with internal identification
- integrated capacitors in the symmetrical demodulators reduce unwanted carrier signals at the outputs

QUICK REFERENCE DATA				
Supply voltage		$V_{11-4}$	typ.	12 V
Supply current		$I_{11}$	typ.	40 mA
Colour difference output signals peak-to-peak values; for the following input signals	-(R-Y)	$V_{3-4(p-p)}$	>	2,4 V
	-(G-Y)	$V_{2-4(p-p)}$	>	1,35 V
	-(B-Y)	$V_{1-4(p-p)}$	>	3 V
Chrominance input signal (including burst) peak-to-peak value	R-Y	$V_{6-4(p-p)}$		500 mV
	B-Y	$V_{5-4(p-p)}$		350 mV
Impedance of colour difference signal outputs			typ.	250 $\Omega$



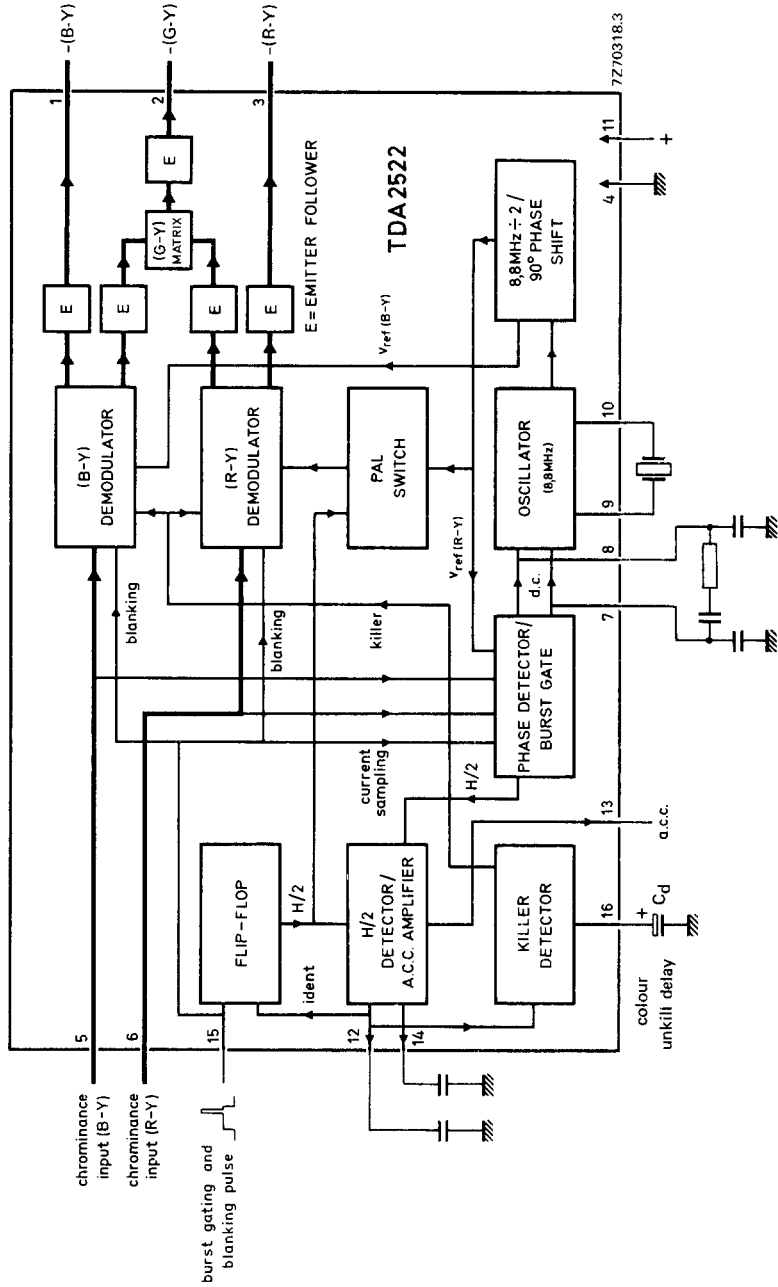
### PACKAGE OUTLINES

TDA2522 : 16-lead DIL ; plastic (SOT-38).  
TDA2522Q: 16-lead QIL ; plastic (SOT-58).

**TDA2522  
TDA2522Q**



**BLOCK DIAGRAM**



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

Supply voltage	$V_{11-4}$	max.	14	V
Total power dissipation	$P_{tot}$	max.	600	mW
Storage temperature	$T_{stg}$		-20 to +125	°C
Operating ambient temperature	$T_{amb}$		-20 to +60	°C

**CHARACTERISTICS** at  $V_{11-4} = 12$  V;  $T_{amb} = 25$  °C

**Demodulator part**

Ratio of demodulated signals				
	B - Y/R - Y:	$\frac{V_{1-4}}{V_{3-4}}$	typ.	1,78
	G - Y/R - Y:	$\frac{V_{2-4}}{V_{3-4}}$	typ.	0,85 1)
	G - Y/R - Y:	$\frac{V_{2-4}}{V_{3-4}}$	typ.	0,17 2)

Colour difference output signals

peak-to-peak values; for the following input signals	-(R - Y)	$V_{3-4(p-p)}$	>	2,4	V
	-(G - Y)	$V_{2-4(p-p)}$	>	1,35	V
	-(B - Y)	$V_{1-4(p-p)}$	>	3	V

Chrominance input signal (including burst) peak-to-peak value: note 3

R - Y	$V_{6-4(p-p)}$	500	mV
B - Y	$V_{5-4(p-p)}$	350	mV

Impedance of colour difference signal outputs

$ Z_{3-4} $	typ.	250	Ω
$ Z_{2-4} $	typ.	250	Ω
$ Z_{1-4} $	typ.	250	Ω

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

Blanking and keying pulse

burst keying: active for	$V_{15-4}$	>	7,5	V
	$V_{15-4}$	<	6,5	V
inactive for	$V_{15-4}$	>	2	V
	$V_{15-4}$	<	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) Colour bar with 75% saturation.

**CHARACTERISTICS** (continued)

**Reference part**

Phase difference between reference and burst signals for $\pm 400$ Hz deviation of crystal frequency		<	$\pm 5^\circ$	
Overall holding range with typical crystal	$\Delta f$	typ.	$\pm 500$	Hz
Burst signal input at keying pulse width of $4 \mu s$ (peak-to-peak value)	$V_{5-6(p-p)}$	typ.	0,25	V <sup>1)</sup>
Oscillator input resistance	$R_{10-4}$	typ.	270	$\Omega$
Oscillator input capacitance	$C_{10-4}$	typ.	note 2	pF
Oscillator output resistance	$R_{9-4}$	typ.	200	$\Omega$
A. C. C. reference voltage	$V_{12-4}$	typ.	7	V
A. C. C. voltage at 0,25 V peak-to-peak burst at correct phase :	$V_{14-4}$	typ.	5,5	V
with zero burst :	$V_{14-4}$	typ.	7,0	V
A. C. C. amplifier output voltage range at $\pm I_{13} < 200 \mu A$	$V_{13-4}$		0,5 to 5	V
<b>Colour killer</b>				
Via pin 14				
Colour off	$V_{14-4}$	>	6	V
Colour on	$V_{14-4}$	<	5,6	V
Alternatively via pin 16				
Colour off	$V_{16-4}$	>	7	V
Colour on	$V_{16-4}$	<	5	V
Colour unkill delay	$t_d$	typ.	20	ms/ $\mu F$ <sup>3)</sup>



1) The amplitude of the burst is kept constant by a. c. c. action, but depends linearly on the keying pulse width.

2) To be established.

3) The delay depends on the value of  $C_d$ .