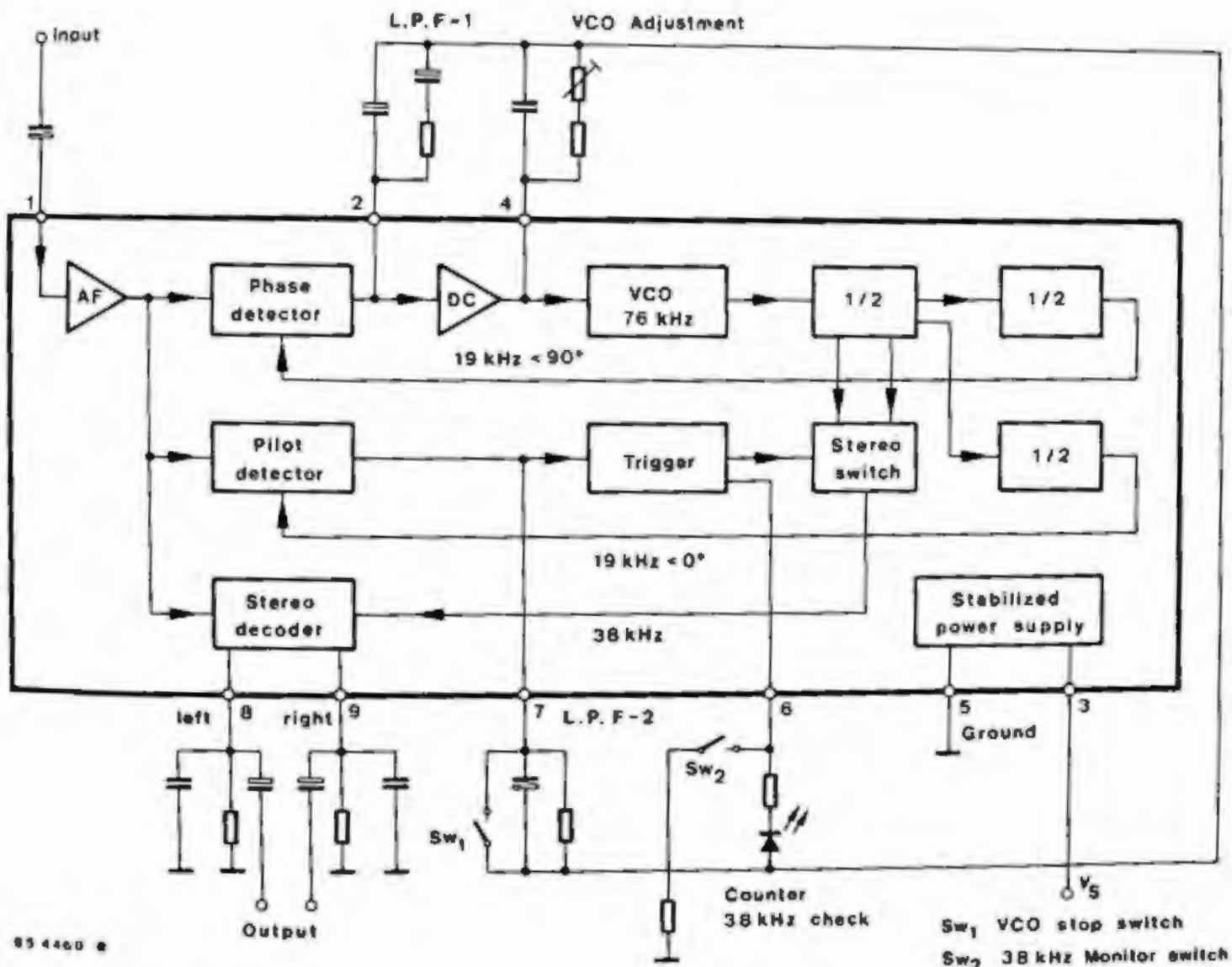


## Monolithic Integrated Circuit

**Application:** Phase Locked Loop (PLL) FM Stereo Multiplex for portable and car radios

### Features:

- Excellent pilot sensitivity  
 $V_{PION1} = 9 \text{ mV}_{\text{RMS}}$  (typ.)
- Operating supply voltage range  
 $V_S = 3.5 \dots 12 \text{ V}$
- Suitable for LED driving
- VCO stop capability  
The Voltage Controlled Oscillator (VCO) is stopped when the L.P.F.2 terminal is connected to the power supply line, and then the stereo indicator is turned off
- Easy adjustment  
The monitored free running frequency of VCO is 38 kHz at stereo lamp terminal
- Excellent channel separation through entire audio frequency range; 45 dB
- Low distortion 0.08% (typ.)



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Fig. 1 Block diagram and pin connections

# U 2343 B

## Absolute maximum ratings

Reference point Pin 5, unless otherwise specified

Supply voltage	Pin 3	$V_S$	12	V
Lamp voltage	Pin 6	$V_{Lamp}$	16	V
Lamp current	continuation Peak	$I_{Lamp}$	20	mA
		$I_{Lamp}$	40	mA
Power dissipation		$P_{Tot}$	500	mW
Ambient temperature		$T_{amb}$	75	°C
Storage temperature range		$T_{stg}$	-25...+150	°C

## Thermal resistance

	Min.	Typ.	Max.	
Junction ambient			125	K/W

## Electrical characteristics

$V_S = 8V$ ,  $T_{amb} = 25^\circ C$ , reference point Pin 5,  $f_{mod} = 1$  kHz, unless otherwise specified

Supply voltage range	Pin 3	$V_S$	3.5	12	V	
Supply current, with lamp off	Pin 6	$I_S$	11	18	mA	
Input resistance	Pin 1	$R_i$	33		k $\Omega$	
Stereo input voltage (maximal) L-R = 90%, P <sup>11</sup> = 10%, $f_{mod} = 1$ kHz	Pin 1	$v_i$	1.1		V <sub>RMS</sub>	
Channel separation $v_{L-R} = 180$ mV <sub>PUS</sub> , $P = 20$ mV <sub>RMS</sub>	Pin 8, 9	Ch. Sep.	36	45	dB	
Voltage gain $v_i = 200$ mV <sub>PUS</sub>	Pin 8, 9	$G_v$	-2	0.5	+2	dB
Channel balance $v_i = 200$ mV <sub>RMS</sub>	Pin 8, 9	Ch. B.	0	1.5	dB	
Lamp sensitivity, Pilot input	ON OFF	$v_p$ $v_b$	2	10	15	mV <sub>RMS</sub> mV <sub>RMS</sub>
Stereo lamp hysteresis to turn-on from turn-off			3			mV <sub>RMS</sub>
Capture range $v_s = 20$ mV <sub>RMS</sub>		C.R.	$\pm 3$			%

<sup>11</sup>P = Pilot input signal

# U 2343 B

	Min.	Typ.	Max.	
Carrier leak $v_p = 20$ mV <sub>RMS</sub>		19		kHz
$v_{L-R} = 180$ mV <sub>RMS</sub>		38		kHz
C.L.		34		dB
C.L.		42		dB
Signal to noise ratio $v_i = 200$ mV <sub>RMS</sub> , $R_G = 620 \Omega$		74		dB
Distortion Mono $V_i = 200$ mV <sub>RMS</sub>		0.08	0.3	%
Stereo $v_{L-R} = 180$ mV <sub>RMS</sub> $v_p = 20$ mV <sub>RMS</sub> , $f_{mod} = 1$ kHz		0.08		%
Output current $R_L = 3.3$ k $\Omega$ , $V_S = 3.5$ V		0.3	0.6	mA
$V_S = 8.0$ V		1.2	1.8	mA
$V_S = 12$ V		1.4	2.1	mA

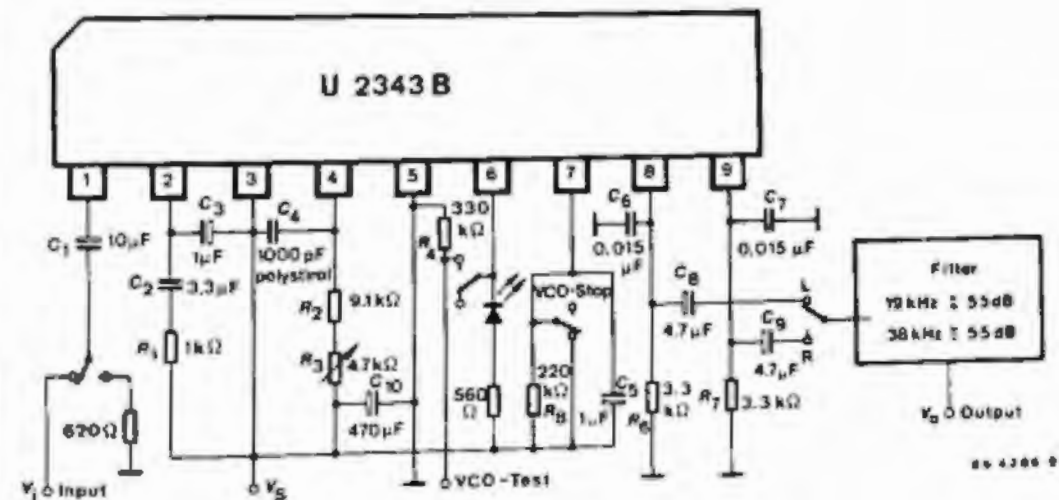
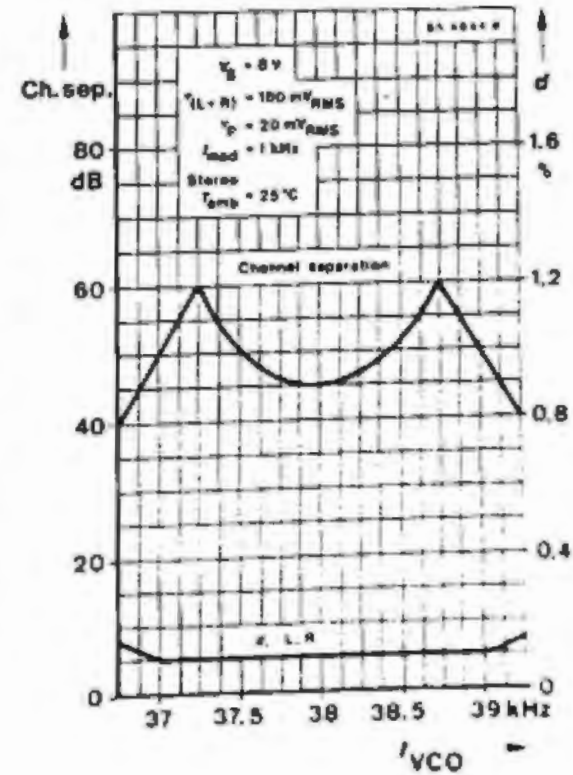
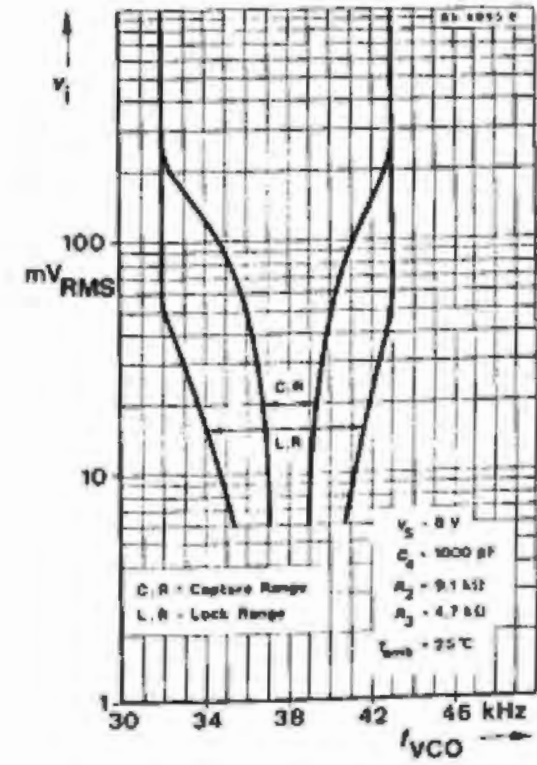
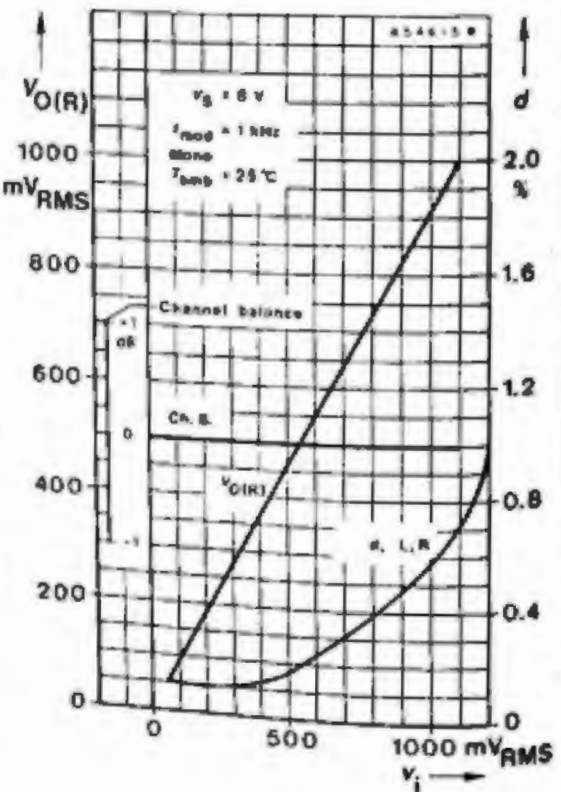
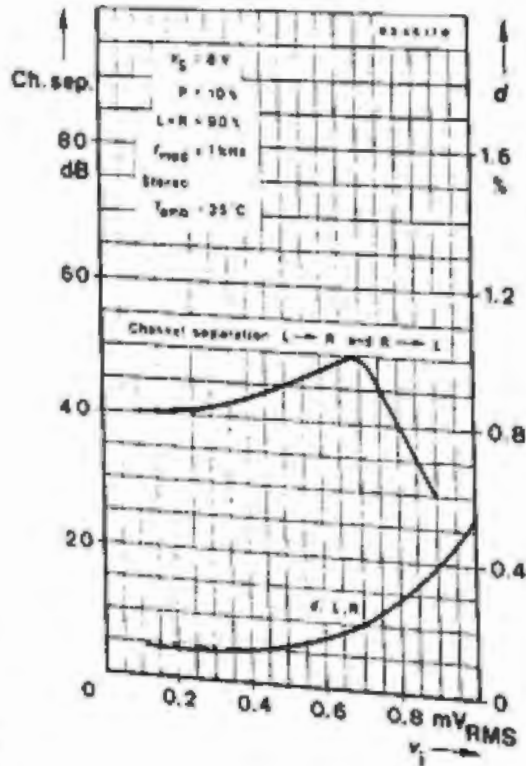
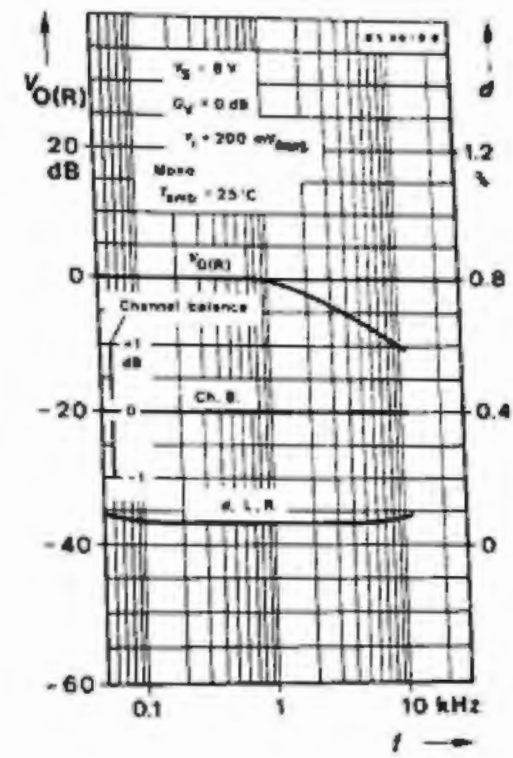
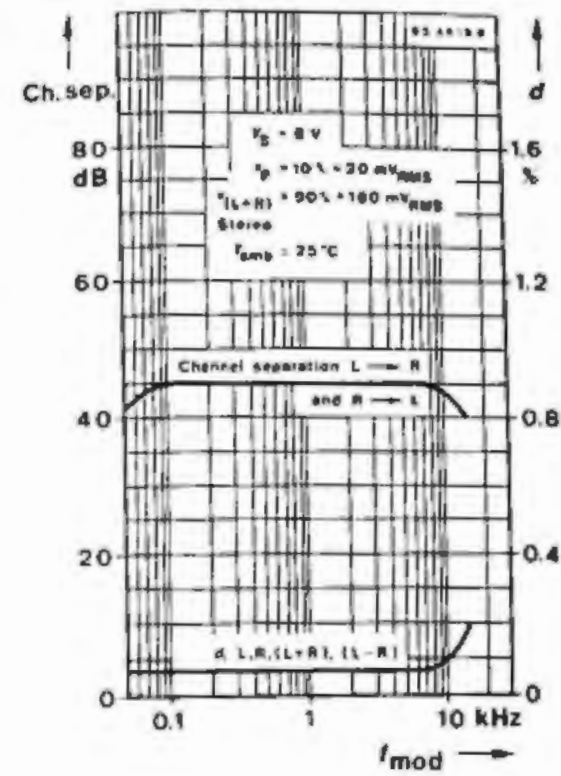
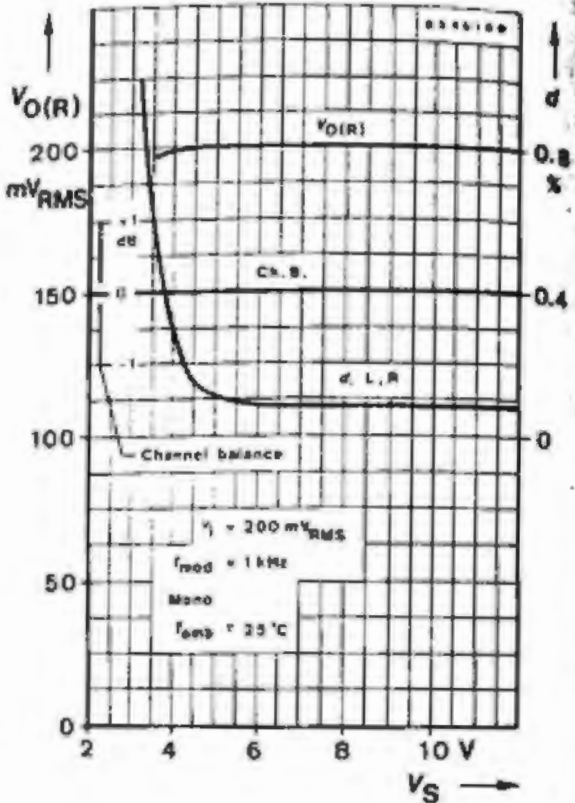
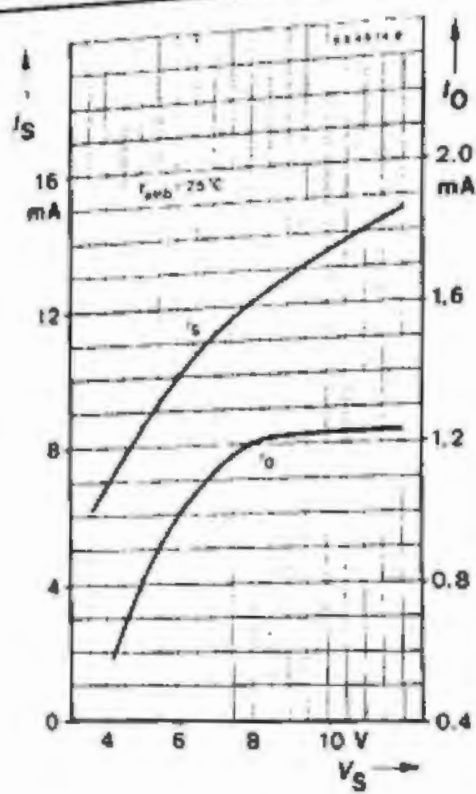
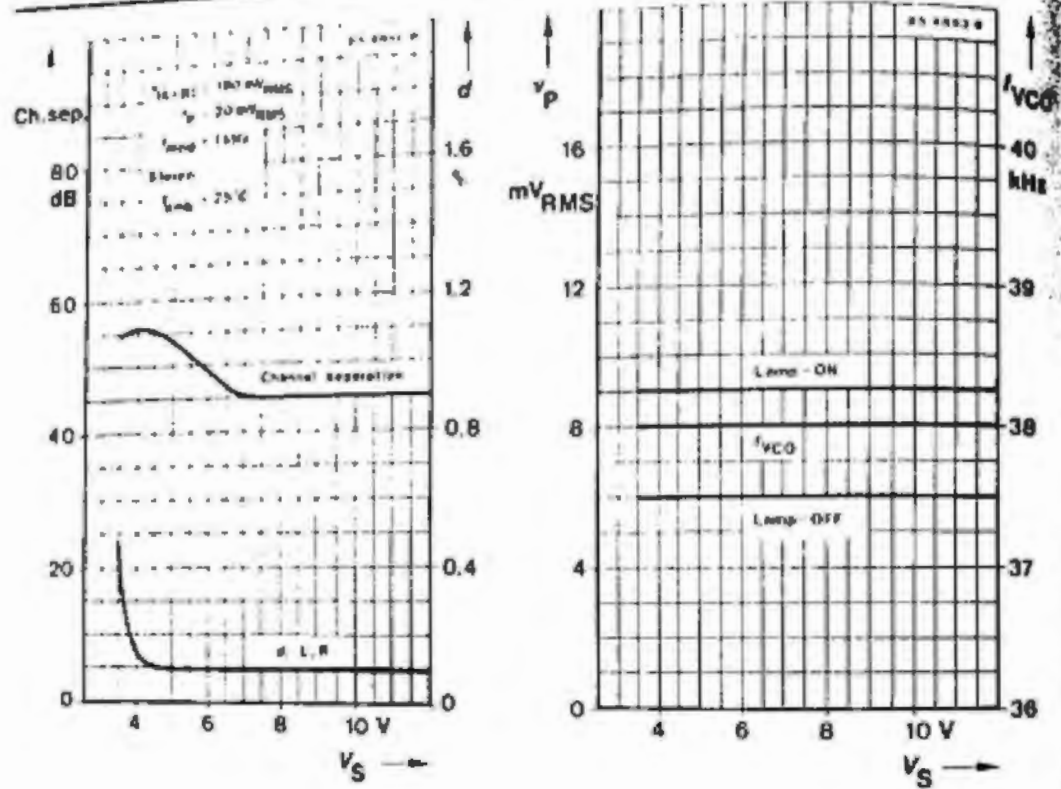


Fig. 2 Test circuit

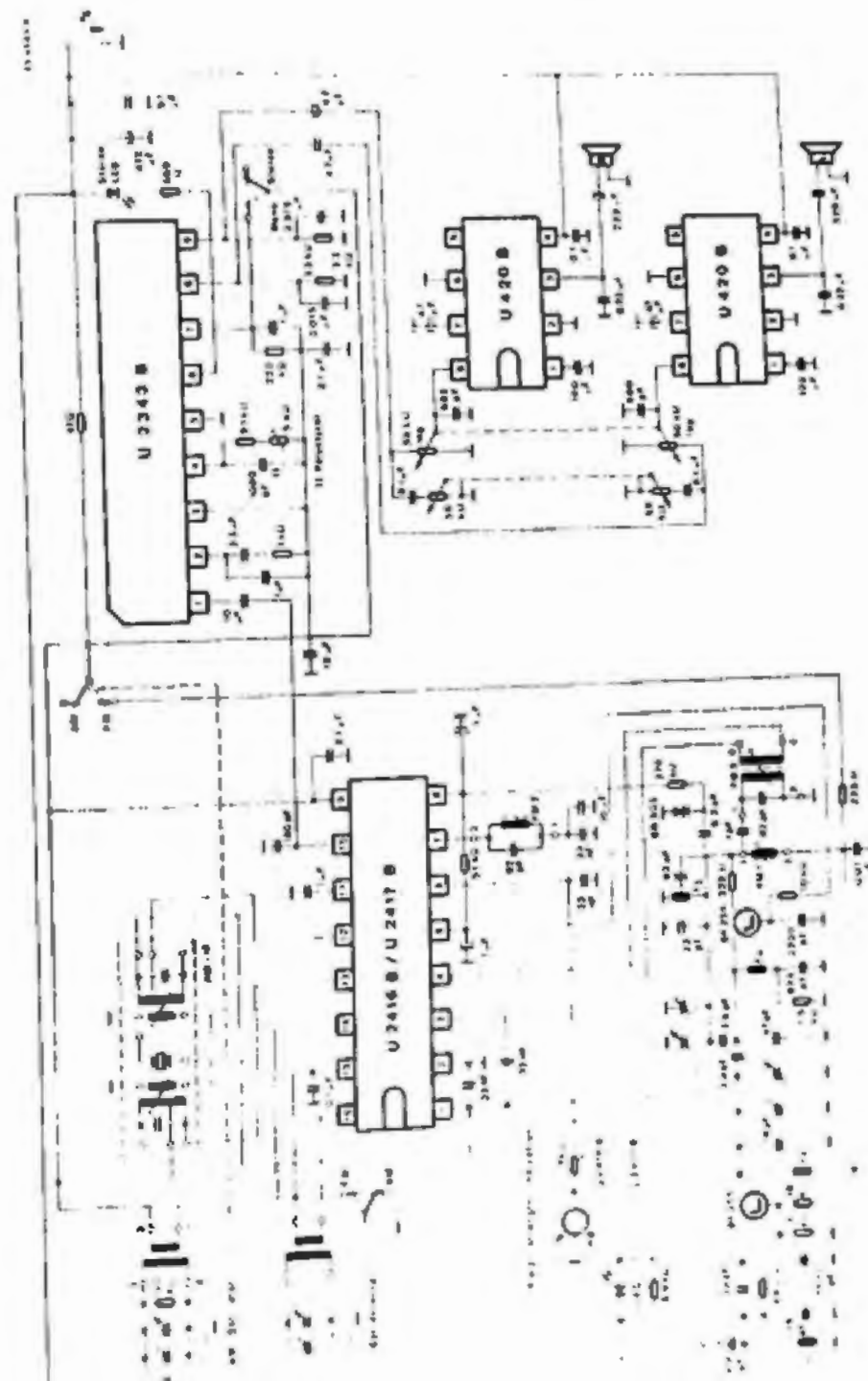


U 2343 B



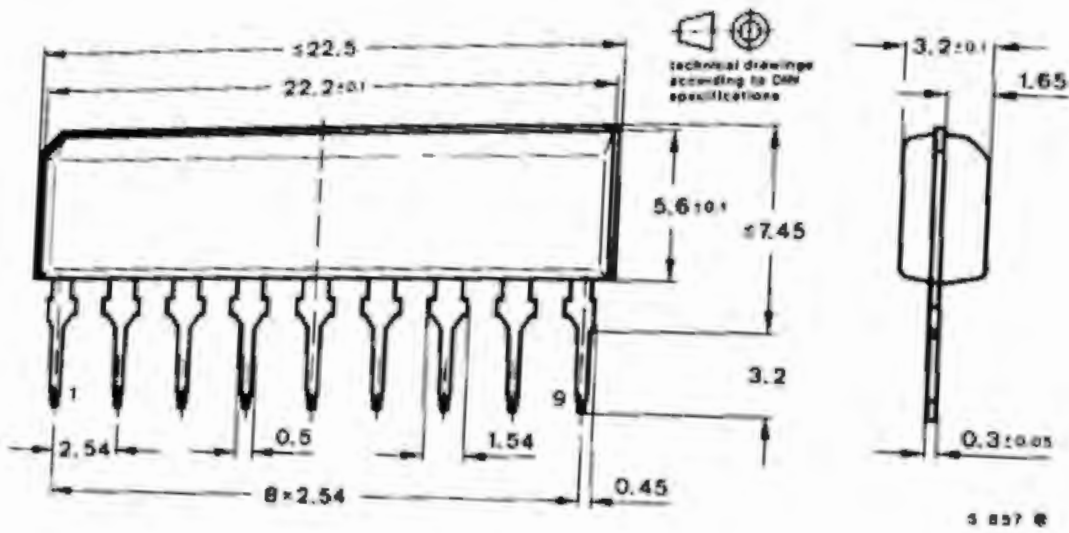
U 2343 B

Application



# U 2343 B

Dimensions in mm



Case  
SIP 9  
Weight max. 0.8g