

## Monolithic Integrated Circuit

### Application

Audio-Amplifier for portable radios, cassette recorders and general purposes.

### Features

- Large supply voltage range  $V_S = 3 \dots 16 \text{ V}$
- Low cross-over distortion
- Low harmonic distortion
- Adjustable voltage gain  $G_V = 34 \dots 54 \text{ dB}$
- Audio output power  $P_O = 1.5 \text{ W}$
- Connection possibility for an external capacitor to suppress hum voltage
- Bootstrap circuit

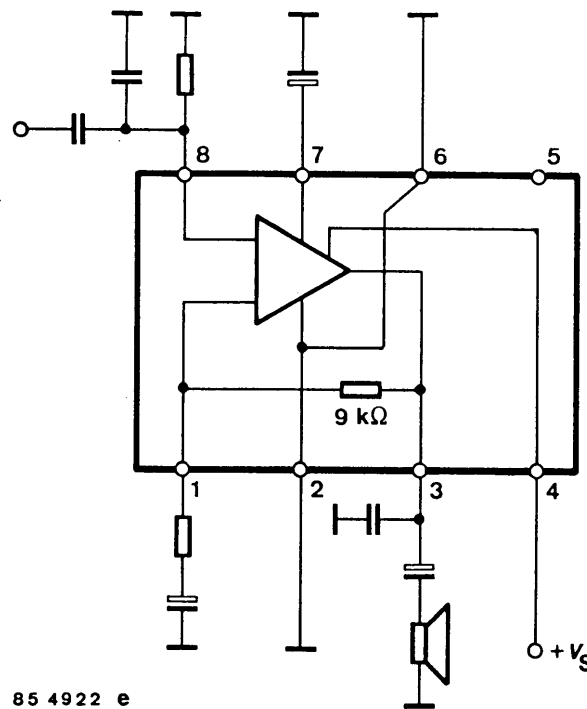


Figure 1 Block diagram and pin connections

### Absolute Maximum Ratings

Reference point Pin 2, Pin 6

Parameters	Symbol	Value	Unit
Supply voltage	Pin 4 $V_S$	16	V
Peak output current	Pin 3 $I_{OM}$	850	mA
Power dissipation	$T_{amb} = 50 \text{ }^\circ\text{C}$ $P_{tot}$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-25 ... +150	$^\circ\text{C}$

## Thermal Resistance

Parameters	Symbol	Maximum	Unit
Junction ambient	$R_{thJA}$	100	k/W

## Electrical Characteristics

$V_S = 9\text{ V}$ , reference point: Pin 2, Pin 6,  $G_v = 40\text{ dB}$ ,  $f = 1\text{ kHz}$ ,  $R_L = 8\ \Omega$ ,  $d = 10\%$ ,  $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified

Parameters	Test Conditions / Pin	Symbol	Min	Typ	Max	Unit
Supply voltage range	Pin 4	$V_S$	3		16	V
Quiescent output voltage	Pin 3	$V_{OB}$	3.9		4.7	V
Quiescent drain current						
$V_S = 3\text{ V}$	Figure 2 Pin 4	$I_{SB}$	2	3	6	mA
$V_S = 9\text{ V}$		$I_{SB}$	3.3	7.5	12	mA
$V_S = 16\text{ V}$		$I_{SB}$	3.3	7	10	mA
Output power		$P_o$	0.9	1		W
Supply voltage rejection ratio						
$V_{hum} = 0.35\text{ V}$ , $C_1 = 47\ \mu\text{F}$ , $f_{hum} = 100\text{ Hz}$		SVR		30		dB
Input resistance	Pin 8	$R_i$	800			k $\Omega$
Band width ( $-3\text{ dB}$ )	Figure 2	B		100 ... 28000		Hz
Distortion	Figure 2					
$P_o = 50\text{ mW}$		d		0.4	1	%
Voltage gain, closed loop						
$R_1 = 91\ \Omega$		$G_v$	37	40	43	dB
Output noise voltage						
$R_G = 0$ , $B = 22\text{ ... }22000\text{ Hz}$	Pin 3	$V_{no}$		250	600	$\mu\text{V}$

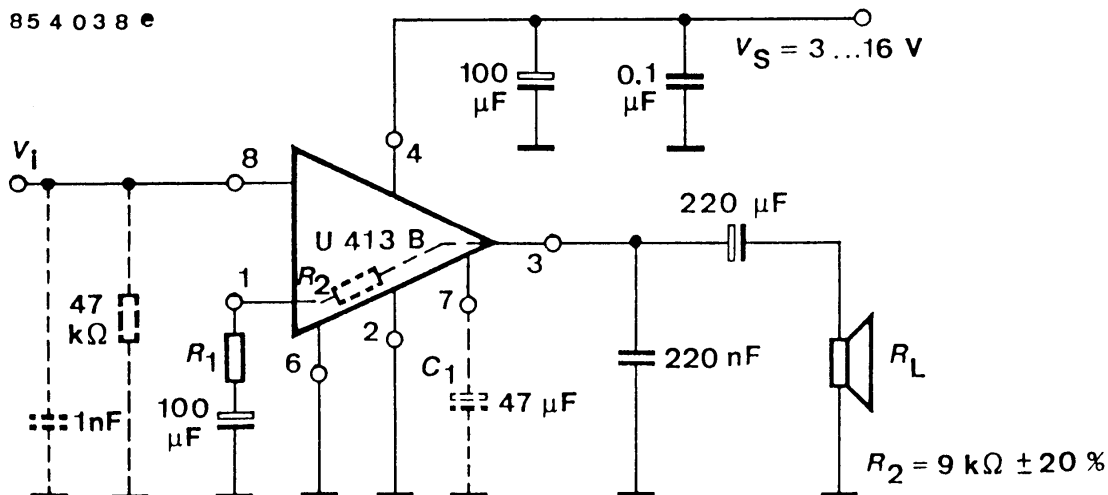
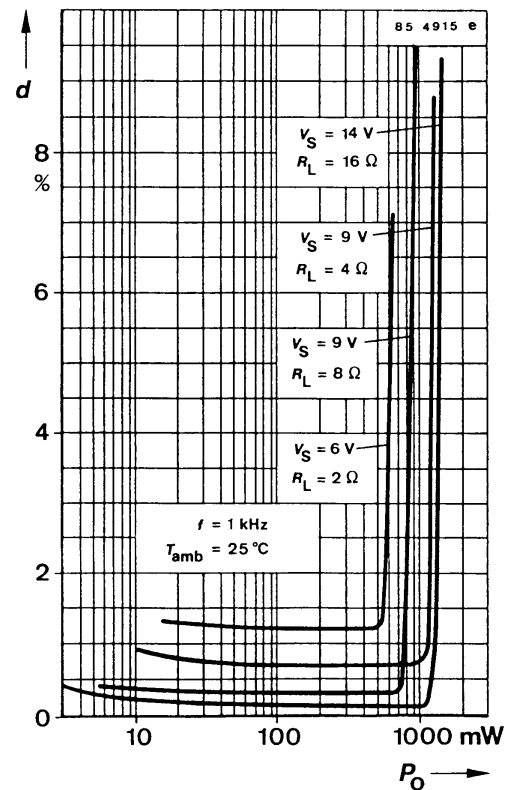
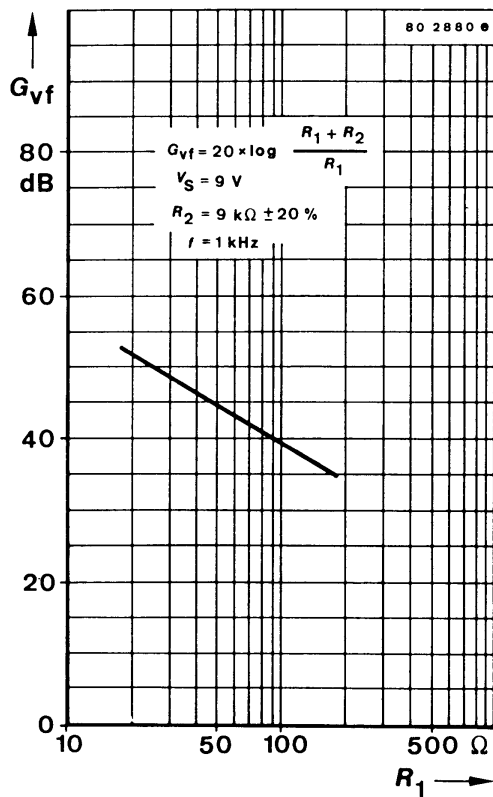
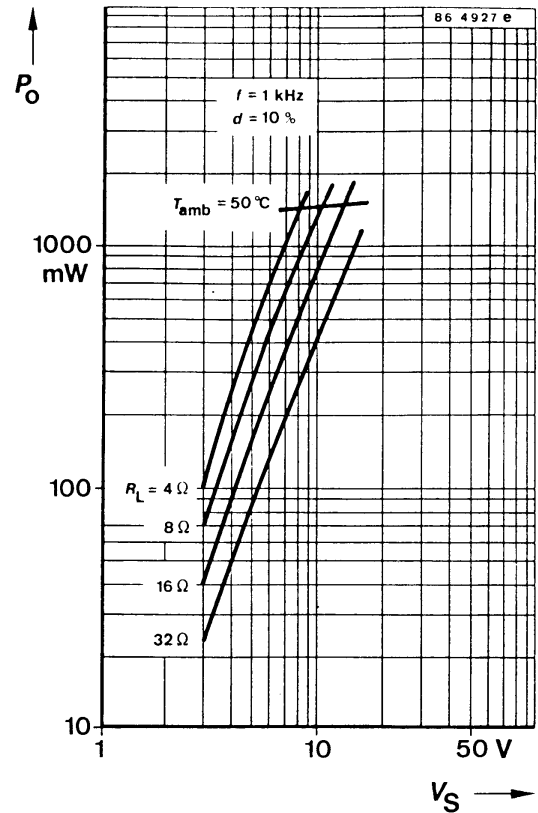
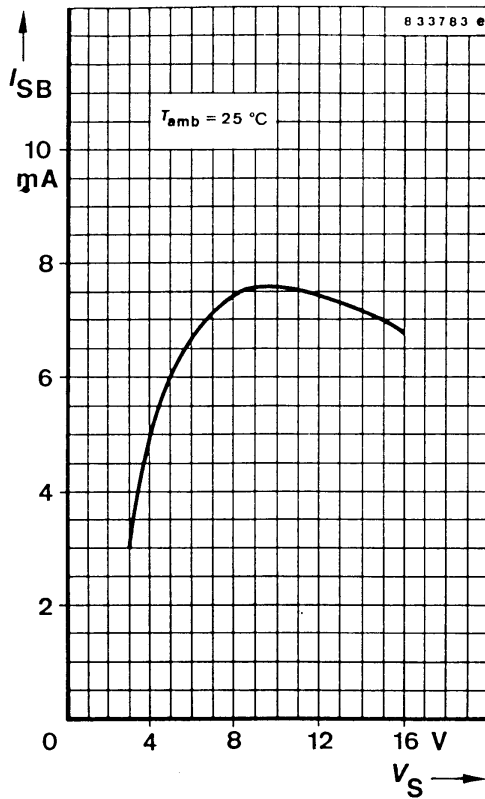


Figure 2 Test circuit for:  $P_o$ ,  $P_{tot}$ ,  $d$ ,  $V_{no}$ ,  $B$ ,  $G_v$  and application note

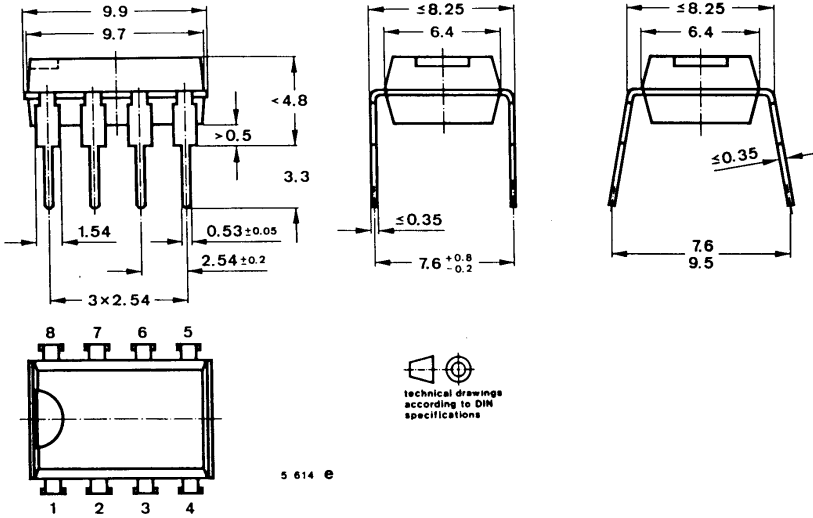


# U 413 B

# TEMIC

TELEFUNKEN Semiconductors

## Dimensions in mm



Case  
20 A 8 DIN 41866  
DIP 8

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It is the policy of **TEMIC TELEFUNKEN microelectronic GmbH** to

1. Meet all present and future national and international statutory requirements and
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

Of particular concern is the control or elimination of releases into the atmosphere of those substances which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) will soon severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

**TEMIC TELEFUNKEN microelectronic GmbH** semiconductor division has been able to use its policy of continuous improvements to eliminate the use of any ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA and
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

**TEMIC** can certify that our semiconductors are not manufactured with and do not contain ozone depleting substances.

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