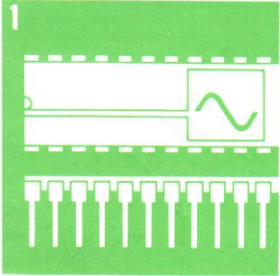
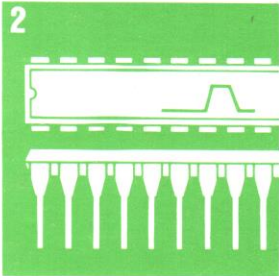
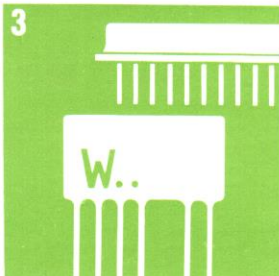
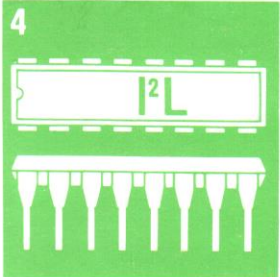
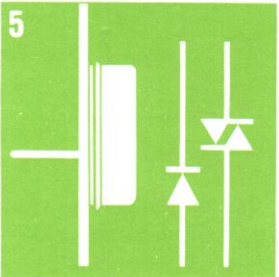
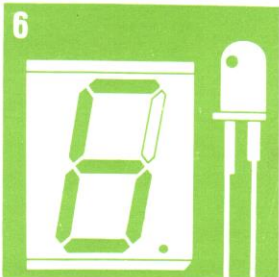
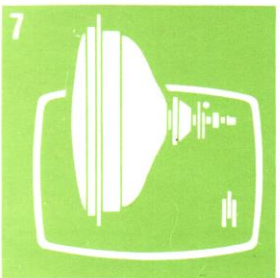
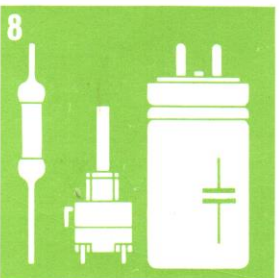
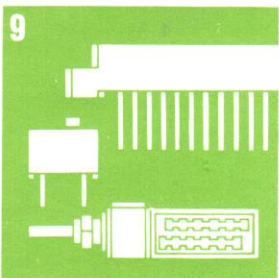
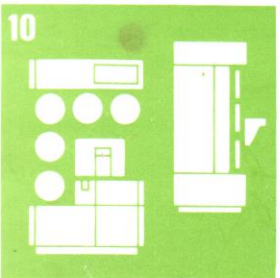
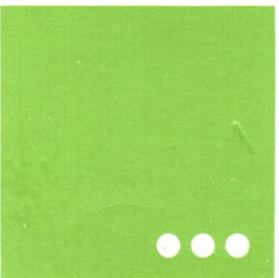



TESLA

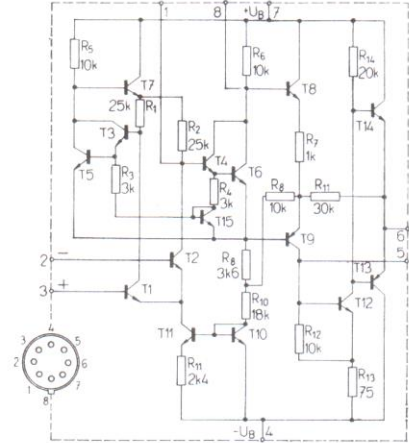
ELEKTRONICKÉ SOUČÁSTKY
KONCERN ROŽNOV

Integrated Circuits Integrierte Schaltkreise

1		2		3		Linear Integrated Circuits	1
						Digital Integrated Circuits	2
4		5		6		Hybrid Integrated Circuits	3
						Custom Integrated Circuits	4
7		8		9		Semiconductor Devices	5
						Optoelectronic Devices	6
						TV Picture Tubes	7
10						Passive Electronic Components	8
						Connectors	9
						Production Equipment	10

Maximum ratings:
 Grenzwerte:

Supply voltage Betriebsspannung	U_B	max	± 18	V
Differential input voltage Differential-Eingangsspannung	U_{ID}	max	± 5	V
Input voltage Eingangsspannung	U_I	max	± 10	V
Total power dissipation Gesamtverlustleistung MAA501, MAA502, MAA504	P	max	300	mW
	P	max	250	mW
Output short-circuit of short duration Ausgangskurzschlussdauer	t	max	5	s
Case temperature Gehäusetemperatur MAA501, MAA502, MAA504	ϑ_c	max	125	°C
	ϑ_c	max	70	°C
Operating temperature Betriebstemperatur MAA501, MAA502, MAA504	ϑ_a	max	-55 ... +125	°C
	ϑ_a	max	0 ... +70	°C
Dissipation drop Erniedrigung der Belastbarkeit	MAA501, MAA502 MAA504		5,5 mW/K 5,6 mW/K	$\vartheta_a = +95$ °C $\vartheta_a = +70$ °C



Outlines ● Abmessungen IO 4

Characteristic data: — Kenndaten:

	MAA501	MAA502	MAA504 MAA503	
Valid at — (unless otherwise noted) Gültig bei — (wenn nicht anders angegeben)	-55 °C $\leq \vartheta_a \leq +125$ °C ± 9 V $\leq U_B \leq \pm 15$ V		$U_B = \pm 15$ V $\vartheta_a = 25$ °C	
Input offset voltage Eingangsspannung-Unsymmetrie $R_s \leq 10$ k Ω $R_s \leq 10$ k Ω , ± 9 V $\leq U_B \leq \pm 15$ V	U_{IO}	< 6	< 3	mV
Average temperature coefficient of input offset voltage Mittl. Temperaturkoeffizient der Eingangsspannungs-Unsymmetrie $R_s \leq 10$ k Ω $R_s = 50$ Ω $R_s = 50$ Ω , $\vartheta_a = +25$... +125 °C $R_s = 50$ Ω , $\vartheta_a = -55$... +25 °C $R_s = 10$ k Ω , $\vartheta_a = +25$... +125 °C $R_s = 10$ k Ω , $\vartheta_a = -55$... +25 °C	αU_{IO}	6 3 — — — —	— — 1,8 < 10 1,8 < 10 2 < 15 4,8 < 25	μ V/K μ V/K μ V/K μ V/K μ V/K μ V/K
Large-signal voltage gain Leerlauf-Spannungsverstärkung $U_B = \pm 15$ V, $R_L \geq 2$ k Ω , $U_I = \pm 10$ V	A_{uL}	25 000 ... 70 000	25 000 ... 70 000	45 000 > 15 000
Output voltage swing Ausgangs-Spitzenspannung $U_B = \pm 15$ V, $R_L \geq 10$ k Ω $U_B = \pm 15$ V, $R_L \geq 2$ k Ω	$U_{OPP max}$ $U_{OPP max}$	± 14 > ± 12 ± 13 > ± 10	± 14 > ± 12 ± 13 > ± 10	V V
Input voltage range Eingangs-Spannungsbereich $U_B = \pm 15$ V	U_I	± 10 > ± 8	> ± 8	± 10 > ± 8 V
Common mode rejection ratio Gleichtaktunterdrückung $R_s \leq 10$ k Ω	CMR	90 > 70	110 > 80	90 > 65 dB
Supply voltage rejection ratio Empfindlichkeit an Betriebsspannungsänderung $R_s \leq 10$ k Ω	SVR	25 < 150	40 < 100	25 < 200 μ V/V
Input offset current Eingangsstrom-Unsymmetrie $\vartheta_a = +125$ °C $\vartheta_a = -55$ °C	I_{IO} I_{IO} I_{IO}	— 20 < 200 100 < 500	— 3,5 < 50 40 < 250	100 < 500 nA — nA — nA
Output resistance Ausgangswiderstand	R_O	—	—	150 Ω

Characteristic data: – Kenndaten:	MAA501	MAA502	MAA504 MAA503		
Valid at – (unless otherwise noted) Gültig bei – (wenn nicht anders angegeben)	$-55\text{ °C} \leq \vartheta_a \leq +125\text{ °C}$ $\pm 9\text{ V} \leq U_B \leq \pm 15\text{ V}$		$U_B = \pm 15\text{ V}$ $\vartheta_a = 25\text{ °C}$		
Average temperature coefficient of input offset current Mittl. Temperaturkoeffizient der Eingangsstrom- Unsymmetrie	α_{I10} α_{I10}	— —	— —	nA/K nA/K	
Input bias current Eingang-Null-Strom	I_{IB} I_{IB}	— 0,5 < 1,5	— 0,3 < 0,6	— —	μA μA
Input resistance Eingangswiderstand	R_I R_I	100 > 40 —	— 170 > 85	— —	k Ω k Ω
Supply current Betriebsstrom	I I	— —	2,1 < 3 2,7 < 4,5	— —	mA mA
Power consumption Leistungsverbrauch	P P P	— — —	— 63 < 90 81 < 135	— — —	mW mW mW

MAA501, MAA502, MAA504

Bottom view
Ansicht von unten

Base connection diagram

1. Input frequency compensation
2. Inverting input
3. Non-inverting input
4. $-U_B$
5. Output frequency compensation
6. Output
7. $+U_B$
8. Input frequency compensation

MAA503

Top view
Ansicht von oben

Sockelschaltung

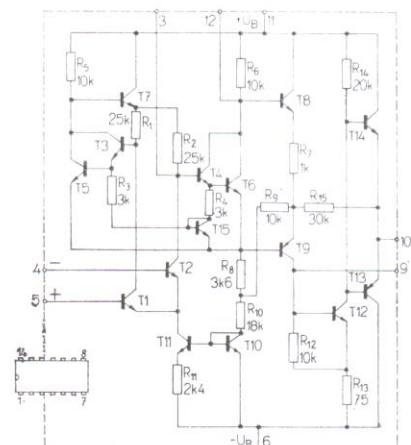
- | | |
|------------------------------|----|
| Eingangsfrequenzkompensation | 3 |
| Invertierend Eingang | 4 |
| Nicht invertierend Eingang | 5 |
| $-U_B$ | 6 |
| Ausgangsfrequenzkompensation | 9 |
| Ausgang | 10 |
| $+U_B$ | 11 |
| Eingangsfrequenzkompensation | 12 |

MAA503

OPERATIONAL AMPLIFIER IN PLASTIC-DIL-CASE OPERATIONSVERSTÄRKER IN PLASTIK-DIL-GEHÄUSE

Maximum ratings: – Grenzwerte:

Supply voltage Betriebsspannung	U_B	max	± 18	V
Differential input voltage Differential-Eingangsspannung	U_{ID}	max	± 5	V
Input voltage Eingangsspannung	U_I	max	± 10	V
Total power dissipation Gesamtverlustleistung	P	max	250	mW
Output short-circuit of short duration Ausgangskurzschlussdauer	t	max	5	s
Case temperature Gehäusetemperatur	ϑ_c	max	+70	°C
Operating temperature Betriebstemperatur	ϑ_a	max	0 ... +70	°C
Storage temperature Lagerungstemperatur	ϑ_{stg}	max	-65 ... +150	°C
Dissipation drop Erniedrigung der Belastbarkeit			5,6 ($\vartheta_a = +70\text{ °C}$)	mW/K



Outlines ● Abmessungen IO 13

Characteristic data: see MAA504

Kenndaten: siehe MAA504