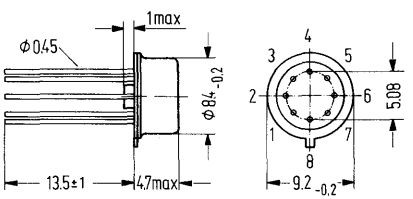
The integrated circuits TAA 521, TAA 521 A and TAA 522 are integrated operational amplifiers for demanding applications. These are exceptionally well suited for industrial applications such as servo-systems, analog computers, measuring equipment etc. The frequency response can be adjusted by external circuits.

- High-resistance symmetrical input
- Low-resistance single-ended output
- Excellent temperature stability
- High common mode rejection

Type	Ordering codes
TAA 521	Q67000-A3
TAA 521 A	Q67000-A164
TAA 522	Q67000-A84

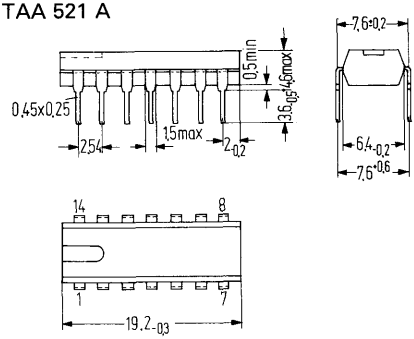
Package outlines

TAA 521, TAA 522



Package similar to 5 G 8 DIN 41873
(similar T0–99)
Weight approx. 1.1 g
Pin 4 is electrically connected to case

TAA 521 A



Plastic plug-in package (14 pins)
20 A 14 DIN 41866 (T0–116)
Weight approx. 1.1 g

Dimensions in mm

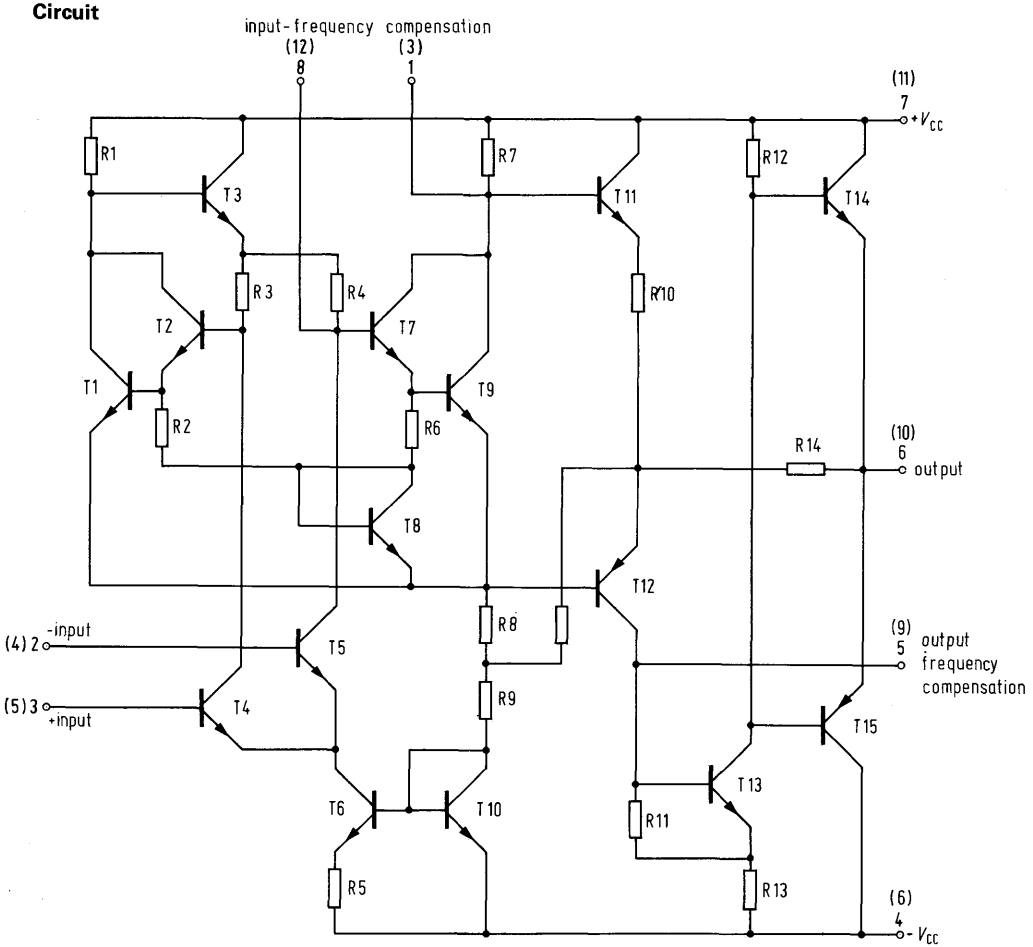
Maximum ratings

		TAA 521 TAA 521 A	TAA 522	
Supply voltages	V_{CC}	± 18	± 18	V
Differential input voltage	V_{ID}	± 5	± 5	V
Input voltage	V_i	± 10	± 10	V
Output short circuit duration		5	5	s
Storage temperature	T_S	−55 to +150	−65 to +150	°C
Junction temperature	T_j	150	150	°C
Thermal resistance:				
System-ambient air	R_{thSamb}	190/120	190	K/W
System-Case	$R_{thScase}$	80/–	80	K/W

Range of operation

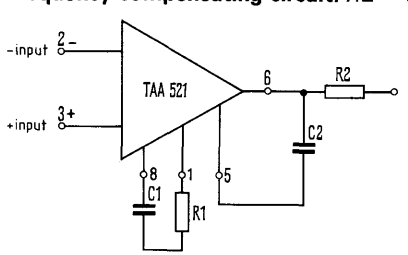
Supply voltage	V_{CC}	10 to 18	10 to 18	V
Ambient temperature in operation	T_{amb}	0 to +70	−55 to +125	°C

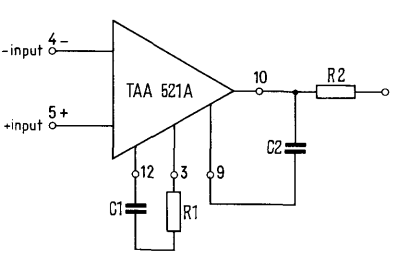
Circuit



Numbers in brackets refer to TAA 521A

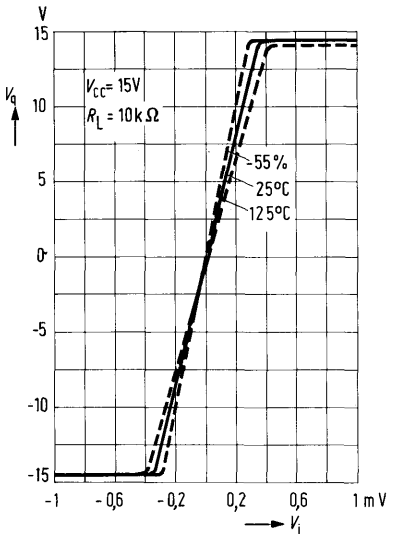
Frequency compensating circuit: $R2 = 50\ \Omega$ for capacitive loads



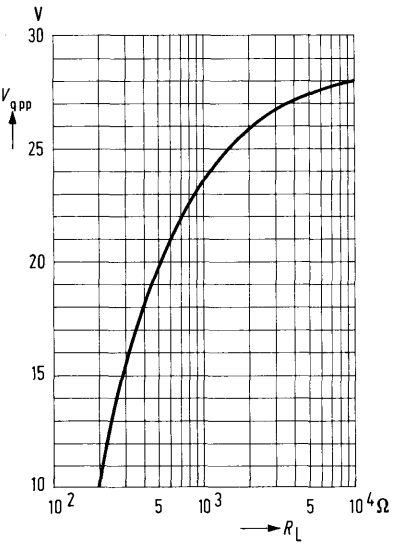


Operating characteristics $V_{CC} = \pm 15$ V, $T_{amb} = 25$ °C unless stated otherwise		TAA 521 TAA 521 A			TAA 522			
		min	typ	max	min	typ	max	
Power consumption (no load, no signal)	P_{tot}		80	200		80	165	mW
Input offset voltage ($R_G < 10$ kΩ)	V_{io}	−7.5	±2	7.5	−5	±1	5	mV
(T_{amb} = 0 to 70 °C)	V_{io}	−10		10	−6		6	mV
Input offset current	I_{io}	−500	±100	500	−200	±50	200	nA
(T_{amb} = 0 to 70 °C)	I_{io}	−750		750				nA
(T_{amb} = −55 to +125 °C)	I_{io}				−200	±20	200	nA
Input current	I_i		.3	1.5		.2	.5	μA
(T_{amb} = 0 to 70 °C)	I_i			2.0				μA
(T_{amb} = −55 to +125 °C)	I_i					500	1500	nA
Input impedance	Z_i	50	250		150	400		kΩ
(T_{amb} = −55 to +125 °C)	Z_i				40	100		kΩ
Output voltage ($R_L > 10$ kΩ)	V_{qpp}	12	±14	−12				V
($R_L > 10$ kΩ, T_{amb} = −55 to +125 °C)	V_{qpp}				12	±14	−12	V
($R_L > 2$ kΩ)	V_{qpp}	10	±13	−10				V
($R_L > 2$ kΩ, T_{amb} = −55 to +125 °C)	V_{qpp}				10	±13	−10	V
Output impedance	Z_q		150				150	Ω
Voltage gain ($V_{qpp} = \pm 10$ V, $R_L = 2$ kΩ)	G_V	83.6	93					dB
($V_{qpp} = \pm 10$ V, $R_L = 2$ kΩ, T_{amb} = 0 to 70 °C)	G_V	81.5						dB
($V_{qpp} = \pm 10$ V, $R_L > 2$ kΩ, T_{amb} = −55 to +125 °C)	G_V				88	93		dB
Common mode rejection ration ($R_G < 10$ kΩ)	$CMRR$	65	90		70	90		dB
Average temperature coefficient of input offset voltage ($R_G < 10$ kΩ, T_{amb} = 0 to 70 °C)	α_{Vio}		10					μV/K
($R_G = 50$ Ω, T_{amb} = −55 to +125 °C)	α_{Vio}					3		μV/K
($R_G < 10$ kΩ, T_{amb} = −55 to +125 °C)	α_{Vio}					6		μV/K
Input common mode range	V_{iCM}	±8	±10		±8	±10		V
Sensitivity to supply voltage variations	$\frac{\Delta V_{io}}{\Delta V_{CC}}$		25	200		25	200	μV/V
Rise time of V_q	$\frac{dV_q}{d_{tr}}$		.3			.3		V/μs

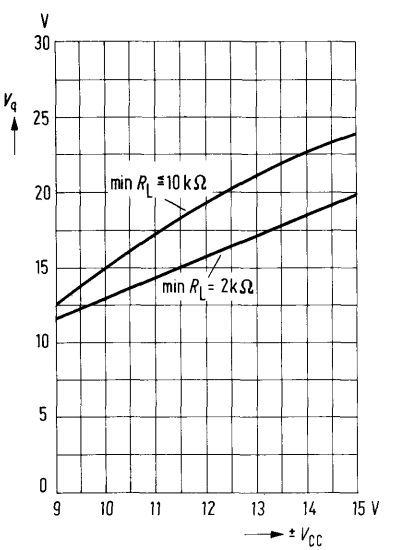
Transfer characteristic $V_q = f(V_I)$



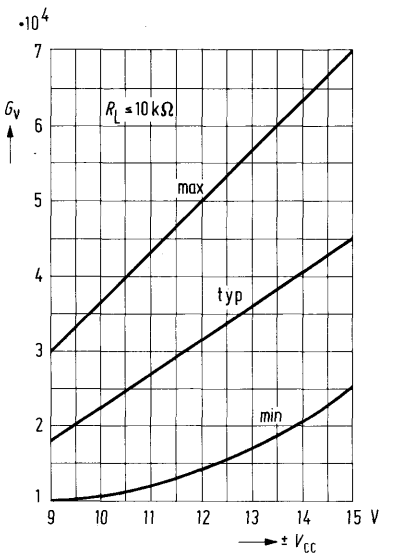
Output voltage $V_{qpp} = f(R_L)$



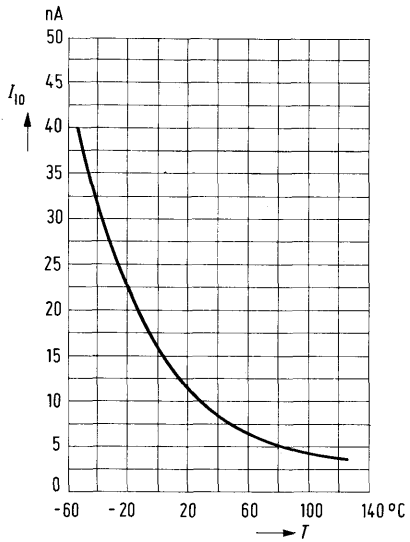
PP-output voltage $V_q = f(V_{CC})$



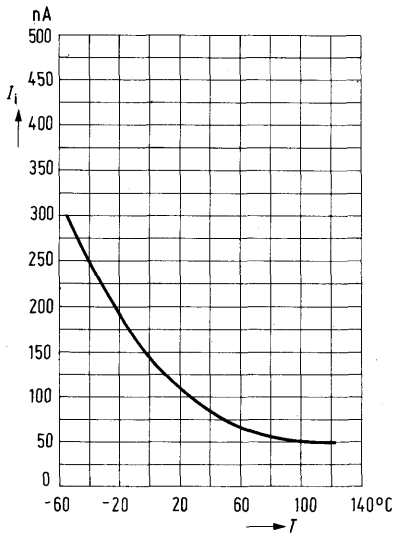
Open loop voltage gain $G_v = f(V_{CC})$



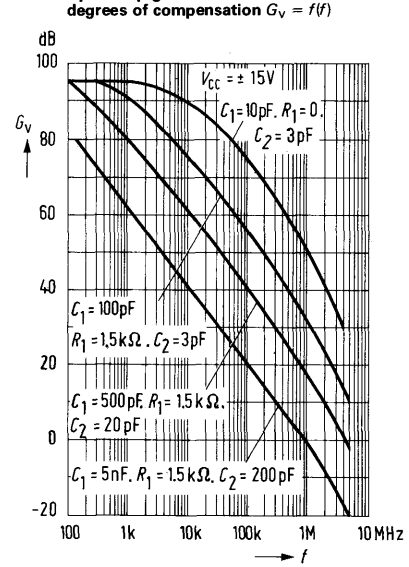
Input offset current $I_{io} = f(T)$



Input current $I_i = f(T)$



Open loop gain for various degrees of compensation $G_v = f(f)$



PP-output voltage $V_q = f(f)$