SIEMENS

Quad Operational Amplifiers

TAA 4762
TAA 4765

Features

Bipolar IC

- Wide common-mode range
- Large supply voltage range
- Comprehensive protection against destruction
- High output current
- Large control range
- Internal frequency compensation
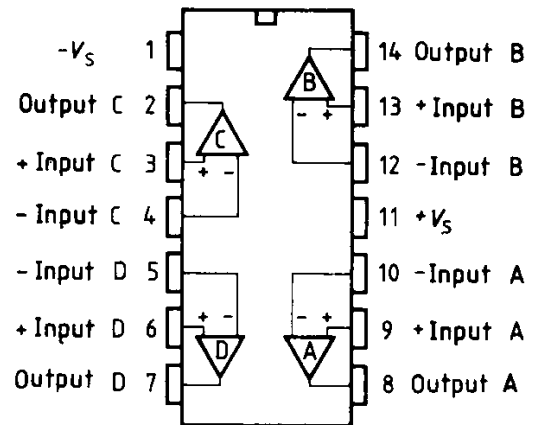- Wide temperature range (TAA 4762 A)
- Open collector output
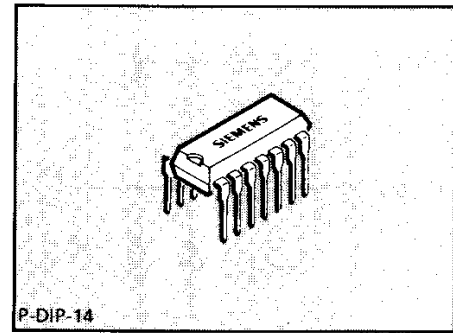
Applications

- Amplifier
- Comparator
- Level converter
- Driver

P-DIP-14

Type	Ordering Code	Package
S TAA 4762 A	Q67000–A2502	P-DIP-14
S TAA 4765 A	Q67000–A1033	P-DIP-14

Pin Configuration (top view)

```
 -V_S       1        14  Output  B
Output C    2        13  +Input  B
+Input C    3        12  -Input  B
-Input C    4        11  +V_S
-Input D    5        10  -Input  A
+Input D    6         9  +Input  A
Output D    7         8  Output  A
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These op amps are particularly economic and versatile. Owing to their excellent performance qualities, they are well suited for a wide scope of applications, as in control engineering, automotive electronics, AF circuits, analog computers, etc.

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Circuit Diagram of one Op Amp
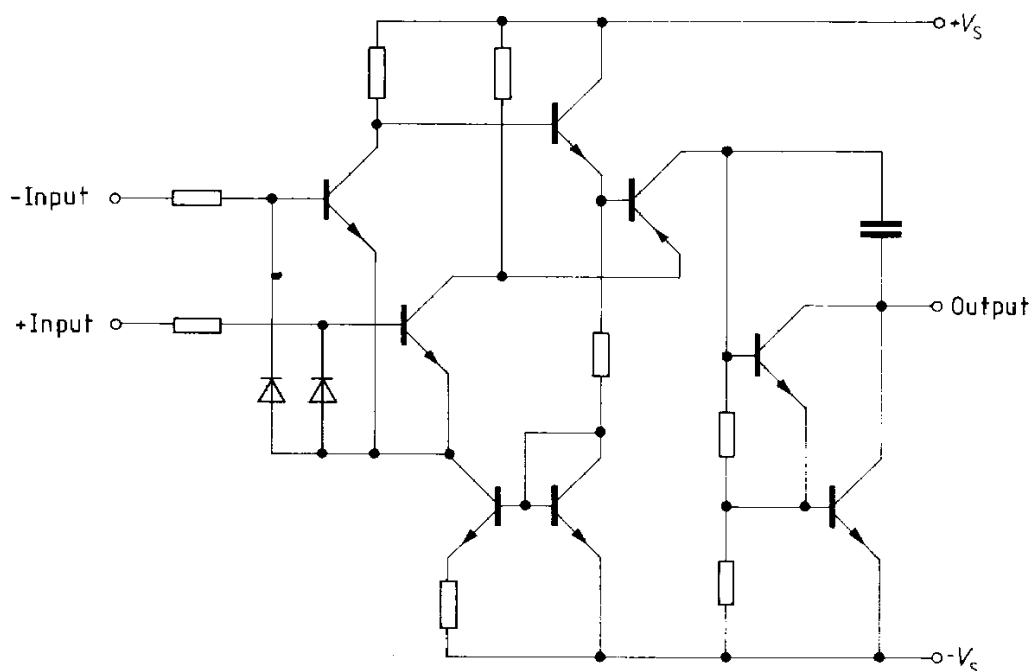
Absolute Maximum Ratings (TAA 4762, TAA 4765)

Parameter	Symbol	Limit Values	Unit
Supply voltage	V_S	± 15	V
Output current	I_Q	70	mA
Differential input voltage	V_{ID}	$\pm V_S$	V
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 125	°C
Thermal resistance system – air	$R_{th\,SA}$	80	K/W

Operating Range (TAA 4762, TAA 4765)

Supply voltage		V_S	± 2 to ± 15	V
Ambient temperature	TAA 4762 A	T_A	−55 to 125	°C
	TAA 4765 A	T_A	−25 to 85	°C

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Characteristics (TAA 4762)

$V_S = \pm 5$ V to ± 15 V; $R_L = 2$ kΩ, unless otherwise specified

Parameter	Symbol	Limit Values $T_A = 25\,°C$			Limit Values $T_A = -55$ to $125\,°C$		Unit
		min.	typ.	max.	min.	max.	
Open-loop supply current consumption, total	I_S		1	3		3	mA
Input offset voltage, $R_G = 50\ \Omega$	V_{IO}	-4			-6	6	mV
Input offset current	I_{IO}	-100	± 50	100	-300	300	nA
Input current	I_I		0.3	0.7		1.0	μA
Control range $V_S = \pm 15$ V	$V_{Q\,pp}$	14.9		-14	14.8	-14	V
$R_L = 620\ \Omega$, $V_S = \pm 15$ V	$V_{Q\,pp}$	14.9		-12.5	14.8	-12	V
Input impedance, $f = 1$ kHz	Z_I		200				kΩ
Open-loop voltage gain $f = 100$ Hz	G_{VO}	85	87		80		dB
$R_L = 10\ \Omega$, $f = 100$ Hz	G_{VO}		92				dB
Output reverse current	I_{QR}			1		5	μA
Common-mode input voltage range	V_{IC}	$-V_2+2$		V_S-2	$-V_S+3$	V_S-3	V
Common-mode rejection	k_{CMR}	80	85		75		dB
Supply voltage rejection, $G_V = 100$	k_{SVR}		25	100		100	μV/V
Temperature coefficient of V_{IO} $R_G = 50\ \Omega$	α_{VIO}		1	15		25	μV/K
Temperature coefficient of I_{IO} $R_G = 50\ \Omega$	α_{IIO}		0.3	1.5		1.5	nA/K
Noise voltage (in acc. with DIN 45405, referred to input $R_S = 2.5\ \Omega$)	V_n		3				μV
Output saturation voltage $I_Q = 10$ mA	V_{Qsat}			1			V
Slew rate for non-inverting operation[1]	SR		0.5				V/μs
Slew rate for inverting operation[1]	SR		0.5				V/μs

Characteristics (TAA 4762)

$V_S = \pm 2$ V, $R_L = 2$ kΩ

Parameter	Symbol	min.	typ.	max.	min.	max.	Unit
Input offset voltage, $R_G = 50\ \Omega$	V_{IO}	-4		4	-6	6	mV
Input offset current	I_{IO}	-70		70	-200	200	nA
Input current	I_I		0.2	0.5		0.8	μA
Open-loop voltage gain; $f = 100$ Hz	G_{VO}	80			75		dB

[1] For the relationship between power bandwidth and slew rate refer to **"Introduction to Operational Amplifiers"**

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Characteristics (TAA 4765)

$V_S = \pm 5$ V to ± 15 V; $R_L = 2$ kΩ, unless otherwise specified

Parameter	Symbol	Limit Values $T_A = 25\,^{\circ}$C			Limit Values $T_A = -25$ to $85\,^{\circ}$C		Unit
		min.	typ.	max.	min.	max.	
Open-loop supply current consumption, total	I_S		1	3		3	mA
Input offset voltage, $R_G = 50$ Ω	V_{IO}	-5.5		5.5	-7	7	mV
Input offset current	I_{IO}	-200	± 80	200	-300	300	nA
Input current	I_I		0.5	0.8		1.0	μA
Control range $V_S = \pm 15$ V	$V_{Q\,pp}$	14.9		-14	14.8	-14	V
$R_L = 620$ Ω, $V_S = \pm 15$ V	$V_{Q\,pp}$	14.9		-12.5	14.8	-12	V
Input impedance, $f = 1$ kHz	Z_I		200				kΩ
Open-loop voltage gain $f = 100$ Hz	G_{V0}	80	85		80		dB
$R_L = 10$ kΩ, $f = 100$ Hz	G_{V0}		90				dB
Output reverse current	I_{QR}			10		20	μA
Common-mode input voltage range	V_{IC}	$-V_S+2$		V_S-2	$-V_S+3$	V_S-3	V
Common-mode rejection	k_{CMR}	75	83		75		dB
Supply voltage rejection, $G_V = 100$	k_{SVR}		25	100		100	μV/V
Temperature coefficient of V_{IO} $R_G = 50$ Ω	α_{VIO}		1	15		25	μV/K
Temperature coefficient of I_{IO} $R_G = 50$ Ω	α_{IIO}		0.3				nA/K
Noise voltage (in acc. with DIN 45405, referred to input $R_S = 2.5$ Ω)	V_n		3				μV
Output saturation voltage $I_Q = 10$ mA	V_{Qsat}			1			V
Slew rate for non-inverting operation[1]	SR		0.5				V/μs
Slew rate for inverting operation[1]	SR		0.5				V/μs

Characteristics (TAA 4765)

$V_S = \pm 2$ V, $R_L = 2$ kΩ

Parameter	Symbol	min.	typ.	max.	min.	max.	Unit
Input offset voltage, $R_G = 50$ Ω	V_{IO}	-6		6	-7.5	7.5	mV
Input offset current	I_{IO}	-150		150	-200	200	nA
Input current	I_I		0.2	0.6		0.8	μA
Open-loop voltage gain; $f = 100$ Hz	G_{V0}	75			75		dB

[1] For the relationship between power bandwidth and slew rate refer to **"Introduction to Operational Amplifiers"**

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