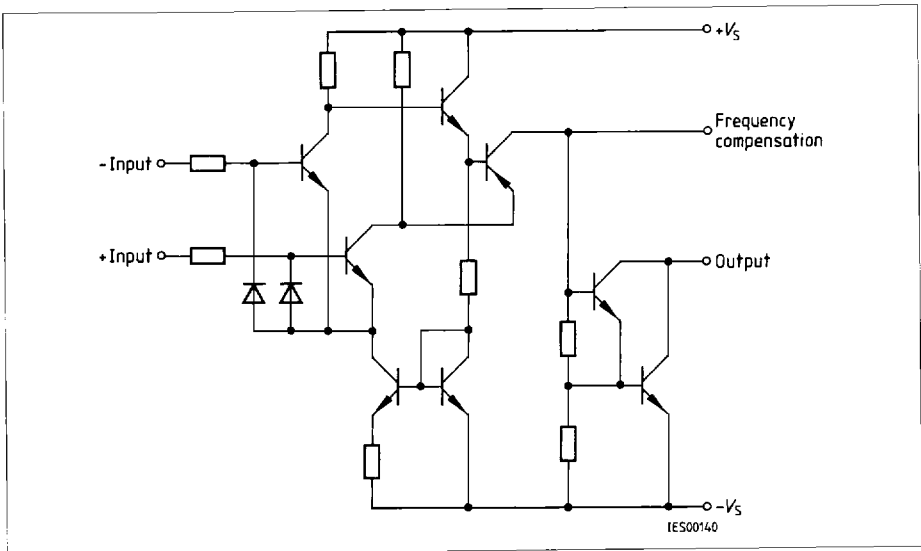
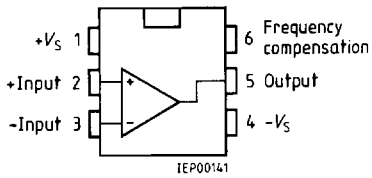


**Pin Configurations**  
(top view)

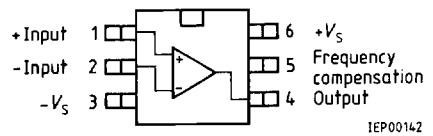


**Circuit Diagram**

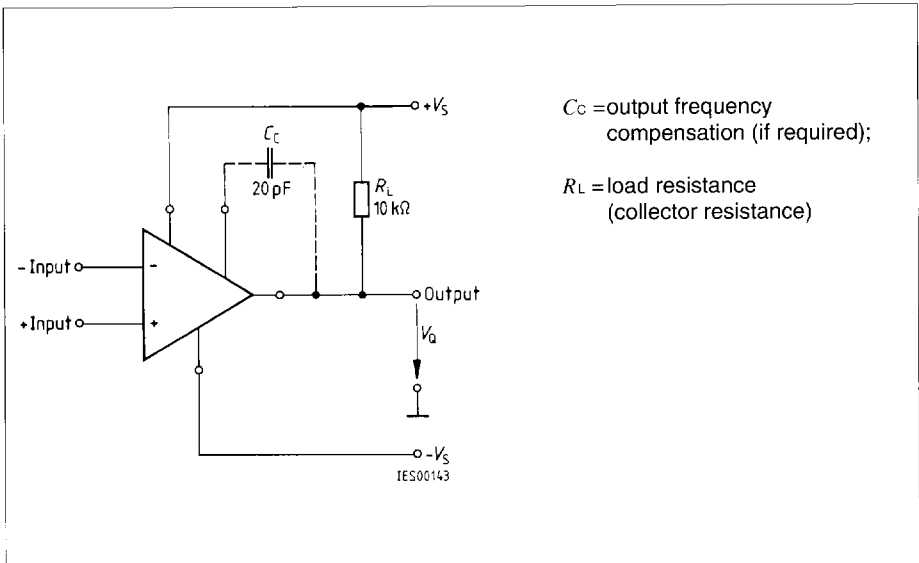
**TAE 1453 A  
TAF 1453 A**



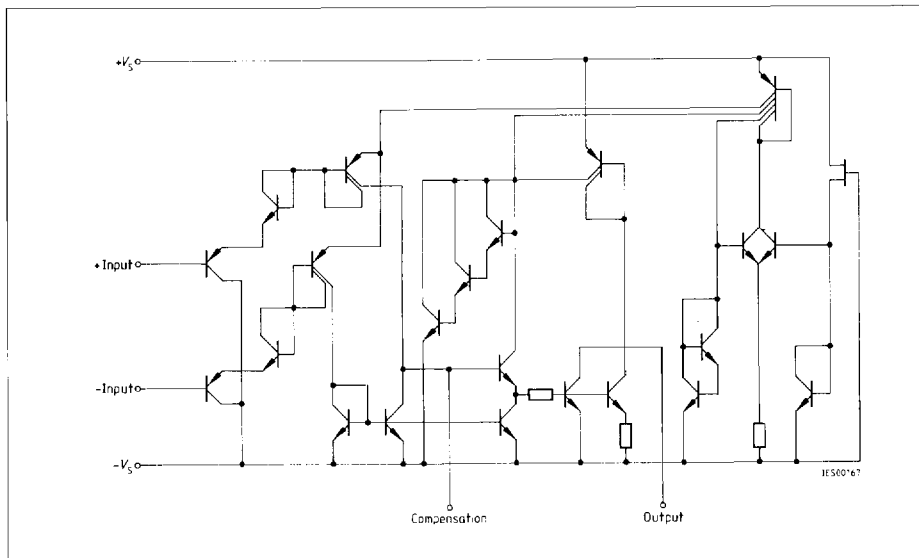
**TAE 1453 G  
TAF 1453 G**



**Pin Configuration**  
(top view)



Connection Diagram



Circuit Diagram

## Absolute Maximum Ratings (TAE 1453)

Parameter	Symbol	Limit Values	Unit
Supply voltage	$V_S$	$\pm 18$	V
Output current	$I_O$	100	mA
Differential input voltage	$V_{ID}$	$\pm V_S$	V
Junction temperature	$T_j$	150	$^{\circ}\text{C}$
Storage temperature range	$T_{stg}$	-55 to 150	$^{\circ}\text{C}$
Thermal resistance system - air	TAE 1453 A TAE 1453 G	$R_{th SA}$ $R_{th SA}$	K/W K/W
		135 200	

## Operating Range (TAE 1453)

Supply voltage	$V_S$	$\pm 2$ to $\pm 18$ ( $\pm 1.5$ V with slightly increased offset voltage)	V
Ambient temperature	$T_A$	-25 to 85	$^{\circ}\text{C}$

## Characteristics (TAE 1453)

$V_S = \pm 5$  V to  $\pm 15$  V;  $R_L = 10$  k $\Omega$ , unless otherwise specified

Parameter	Symbol	Limit Values $T_A = 25^{\circ}\text{C}$			Limit Values $T_A = -25$ to $85^{\circ}\text{C}$		Unit
		min.	typ.	max.	min.	max.	
Open-loop current consumption	$I_S$		0.25	0.4		0.45	mA
Input offset voltage, $R_G = 50\Omega$	$V_{IO}$	-5.5		5.5	-7	7	mV
Input offset current	$I_{IO}$	-15		15	-100	100	nA
Input current	$I_I$		40	150		200	nA
Control range							
$R_L = 2$ k $\Omega$ , $V_S = \pm 15$ V	$V_{O_{pp}}$	14.9		-14.7	14.9	-14.7	V
$R_L = 620\Omega$ , $V_S = \pm 15$ V	$V_{O_{pp}}$	14.9		-14.5	14.9	-14.4	V
$R_L = 2$ k $\Omega$ , $V_S = \pm 15$ V, $f = 100$ kHz	$V_{O_{pp}}$	10		-10			V
Input impedance, $f = 1$ kHz	$Z_I$		200				k $\Omega$
Open-loop voltage gain	$G_{vo}$	78	85		78		dB
Output reverse current	$I_{OR}$			10		20	$\mu\text{A}$
Common-mode input voltage range	$V_{IC}$	$-V_S$ -0.2		$V_S$ -1.8	$-V_S$	$V_S$ -2.0	V

### Characteristics (TAE 1453) (cont'd)

$V_S = \pm 5 \text{ V}$  to  $\pm 15 \text{ V}$ ;  $R_L = 10 \text{ k}\Omega$ , unless otherwise specified

Parameter	Symbol	Limit Values $T_A = 25 \text{ }^\circ\text{C}$			Limit Values $T_A = -25$ to $85 \text{ }^\circ\text{C}$		Unit
		min.	typ.	max.	min.	max.	
Common-mode rejection	$k_{\text{CMR}}$	75	80		75		dB
Supply voltage rejection $G_V = 100$	$k_{\text{SVR}}$		25	100		120	$\mu\text{V/V}$
Temperature coefficient of $I_{\text{IO}}$ $R_G = 50 \text{ }\Omega$	$\alpha_{I_{\text{IO}}}$		0.1				nA/K
Temperature coefficient of $V_{\text{IO}}$ $R_G = 50 \text{ }\Omega$	$\alpha_{V_{\text{IO}}}$		6				$\mu\text{V/K}$
Slew rate for non-inverting operation	$SR$		20				$\text{V}/\mu\text{s}$
Slew rate for inverting operation	$SR$		30				$\text{V}/\mu\text{s}$

### Characteristics (TAE 1453)

$V_S = \pm 2.5 \text{ V}$ ,  $R_L = 10 \text{ k}\Omega$

Input offset voltage, $R_G = 50 \text{ }\Omega$	$V_{\text{IO}}$	-6		6	-7.5	7.5	mV
Input offset current	$I_{\text{IO}}$	-75		75	-100	100	nA
Input current	$I_{\text{I}}$		40	150		200	nA
Open-loop voltage gain	$G_{V0}$	70			70		dB

### Absolute Maximum Ratings (TAF 1453)

Parameter	Symbol	Limit Values	Unit	
Supply voltage	$V_S$	$\pm 18$	V	
Output current	$I_O$	100	mA	
Differential input voltage	$V_{\text{ID}}$	$\pm V_S$	V	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature range	$T_{\text{stg}}$	-55 to 125	$^\circ\text{C}$	
Thermal resistance system - air	TAF 1453 A TAF 1453 G	$R_{\text{th SA}}$ $R_{\text{th SA}}$	135 200	K/W K/W

### Operating Range (TAF 1453)

Supply voltage	$V_S$	$\pm 2$ to $\pm 18$ ( $\pm 1.5$ V with slightly increased offset voltage)	V
Ambient temperature	$T_A$	- 55 to 125	$^{\circ}\text{C}$

### Characteristics (TAF 1453)

$V_S = \pm 5$  V to  $\pm 15$  V;  $R_L = 10$  k $\Omega$ , unless otherwise specified

Parameter	Symbol	Limit Values $T_A = 25^{\circ}\text{C}$			Limit Values $T_A = -55$ to $125^{\circ}\text{C}$		Unit
		min.	typ.	max.	min.	max.	
Open-loop current consumption (Output in H state)	$I_S$		0.25	0.35		0.45	mA
Input offset voltage, $R_G = 50\ \Omega$	$V_{IO}$	- 4		4	- 6	6	mV
Input offset voltage	$I_{IO}$	- 10		10	- 75	75	nA
Input current	$I_I$		40	100		150	nA
Control range							
$R_L = 2$ k $\Omega$ , $V_S = \pm 15$ V	$V_{Qpp}$	14.9		- 14.7	14.9	- 14.7	V
$R_L = 620\ \Omega$ , $V_S = \pm 15$ V	$V_{Qpp}$	14.9		- 14.5	14.9	- 14.4	V
$R_L = 2$ k $\Omega$ , $V_S = \pm 15$ V, $f = 100$ kHz	$V_{Qpp}$	10		- 10			V
Input impedance, $f = 1$ kHz	$Z_i$		200				k $\Omega$
Open-loop voltage gain	$G_{VO}$	80	85		75		dB
Output reverse current	$I_{QR}$			1		5	$\mu\text{A}$
Common-mode input voltage range	$V_{IC}$	- $V_S$ - 0.3		$V_S$ - 1.5	- $V_S$	$V_S$ - 1.8	V
Common-mode rejection	$k_{CMR}$	80	85		75		dB
Supply voltage rejection $G_V = 100$	$k_{SVR}$		25	100		100	$\mu\text{V/V}$
Temperature coefficient of $I_{IO}$ $R_G = 50\ \Omega$	$\alpha_{IIO}$		0.1	0.8			nA/K
Temperature coefficient of $V_{IO}$ $R_G = 50\ \Omega$	$\alpha_{VIO}$		6	25			$\mu\text{V/K}$
Slew rate for non-inverting operation	$SR$		20				V/ $\mu\text{s}$
Slew rate for inverting operation	$SR$		30				V/ $\mu\text{s}$

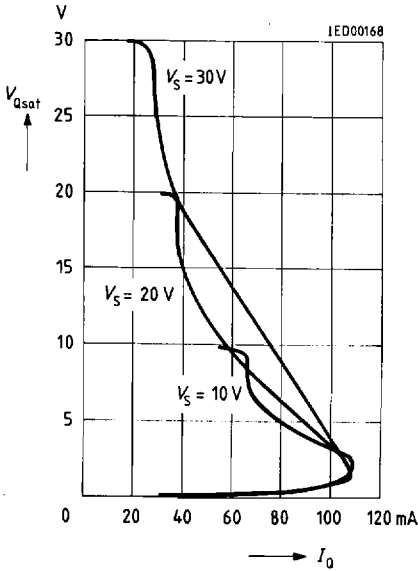
## Characteristics (TAF 1453)

$V_S = \pm 2.5V$ ;  $R_L = 10\text{ k}\Omega$

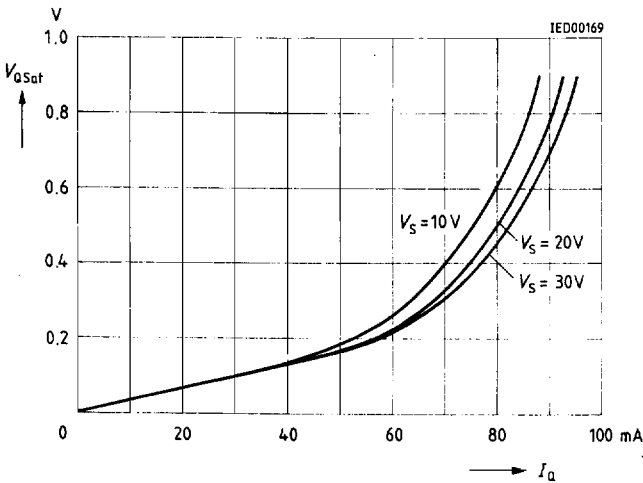
Parameter	Symbol	Limit Values $T_A = 25\text{ }^\circ\text{C}$			Limit Values $T_A = -55$ to $125\text{ }^\circ\text{C}$		Unit
		min.	typ.	max.	min.	max.	
Input offset voltage, $R_G = 50\Omega$	$V_{io}$	- 4		4	- 6	6	mV
Input offset voltage	$I_{io}$	- 50		50	- 75	75	nA
Input current	$I_I$		40	100		150	nA
Open-loop voltage gain	$G_{vo}$	75			70		dB

Typical Characteristics of Electrical Parameters

Load Characteristics  
Output Saturation Voltage versus  
Output Current

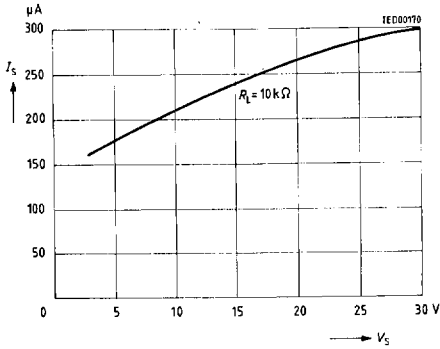


Output Saturation Voltage versus Output Current

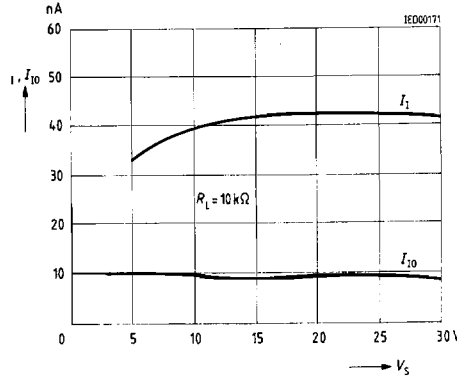




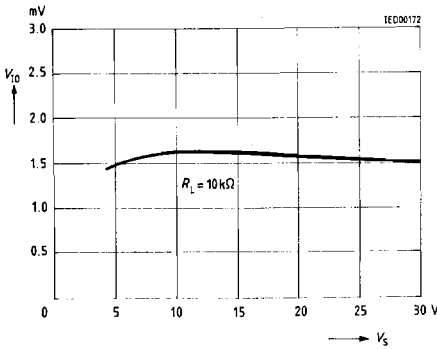
**Supply Current versus Supply Voltage**



**Input Current and Input Offset Current versus Supply Voltage**



**Input Offset Voltage versus Supply Voltage**



**$V_{IO}$  Behavior at Low Operating Voltages**  
**Input Offset Voltage versus Supply Voltage**

