

# IR3702/IR3702N

General Purpose Quad

Operational Amplifier

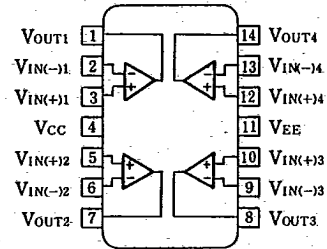
## ■ Description

The IR3702/IR3702N is a general purpose high gain frequency compensated quad operational amplifier, which operates from a single supply over a wide range of voltages.

## ■ Features

1. Operate from a single power supply
2. No frequency compensation required
3. Input common-mode voltage range includes ground
4. 14-pin dual-in-line package (IR3702)  
14-pin small-outline package (IR3702N)

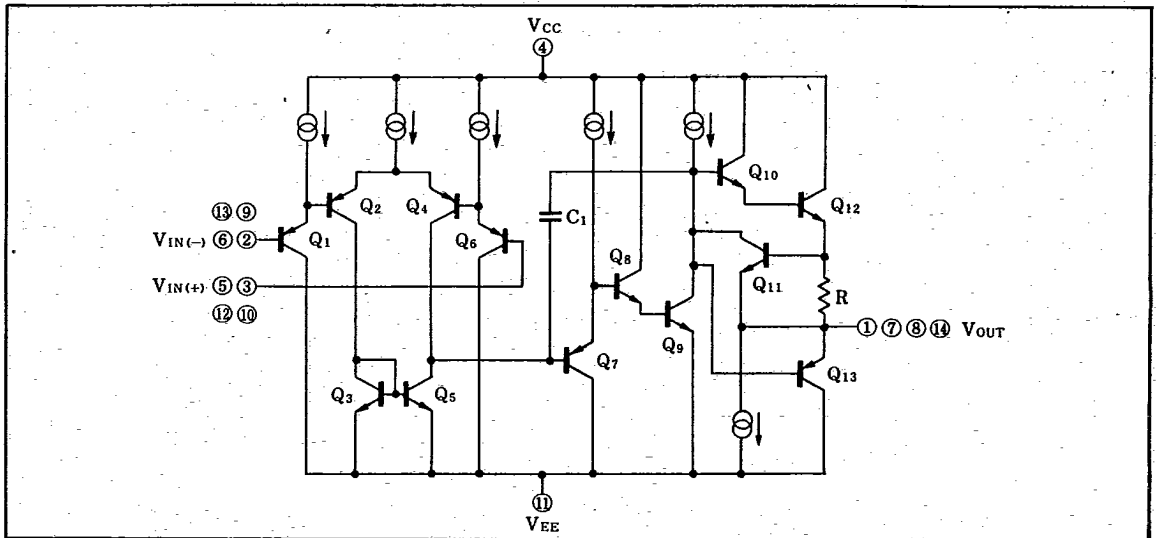
## ■ Pin Connections



Top View

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## ■ Equivalent Circuit



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SHARP

(Ta=25°C)

### Absolute Maximum Ratings

Parameter	Symbol	Condition		Rating	Unit
Supply voltage	$V_{CC}-V_{EE}$			36	V
Differential input voltage	$V_{ID}$			$V_{EE}\sim V_{CC}$	V
In-phase input voltage	$V_{ICM}$			$(V_{EE}-0.3)\sim V_{CC}$	V
Power dissipation	$P_D$	$T_a \leq 25^\circ\text{C}$	IR3702	650	mW
			IR3702N	625	
$P_D$ derating ratio	$\Delta P_D/^\circ\text{C}$	$T_a > 25^\circ\text{C}$	IR3702	6.5	mW/°C
			IR3702N	5	
Operating temperature	$T_{opr}$			-30~+85	°C
Storage temperature	$T_{stg}$			-40~+125	°C
				-55~+150	

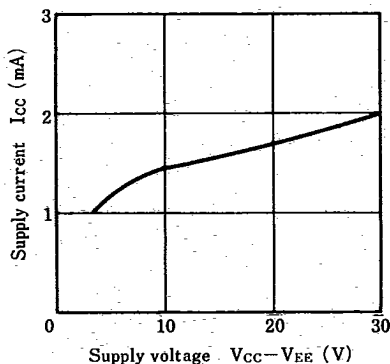
### Electrical Characteristics

(V<sub>CC</sub>=8V, V<sub>EE</sub>=-8V, T<sub>a</sub>=25°C)

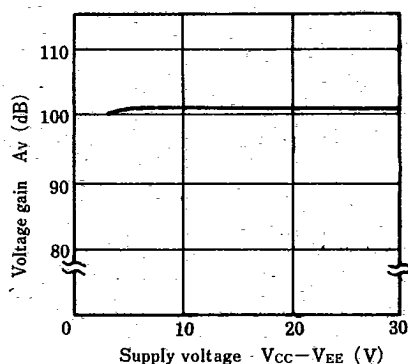
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input offset voltage	$V_{IO}$	$R_S=50\Omega$		2	7	mV
Input offset current	$I_{IO}$			±5	±50	nA
Input bias current	$I_B$			50	500	nA
In-phase input voltage	$V_{ICM}$		$V_{EE}$		$V_{CC}-1.5$	V
Major amplitude voltage gain	$A_V$	$R_L \geq 2k\Omega$	80	95		dB
Supply current	$I_{CC}$			1.2	3.0	mA
Common signal rejection ratio	CMR		70	85		dB
Supply voltage rejection ratio	SVR(+)		75	90		dB
	SVR(-)		70	84		
Maximum output voltage	$V_{OM}(+)$	$R_L=2k\Omega, V_{IN(+)}-V_{IN(-)}=1V$	6.0	6.4		V
	$V_{OM}(-)$	$R_L=2k\Omega, V_{IN(+)}-V_{IN(-)}=1V$		-7.4	-6.5	
Output source current	$I_{OS}(+)$	$V_{OUT}=0V, V_{IN(+)}-V_{IN(-)}=1V$	20	50		mA
Output sink current	$I_{OS}(-)$	$V_{OUT}=0V, V_{IN(-)}-V_{IN(+)}=1V$	10	25		
Slew rate	SR	$R_L=\infty$		0.6		V/μs
Channel separation	C.S			120		dB

### Electrical Characteristic Curves (Unless otherwise specified, T<sub>a</sub>=25°C)

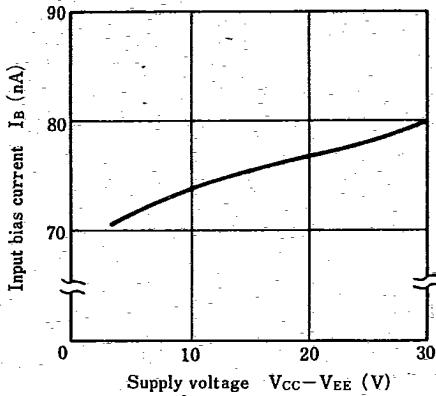
Supply current—Supply voltage Characteristics



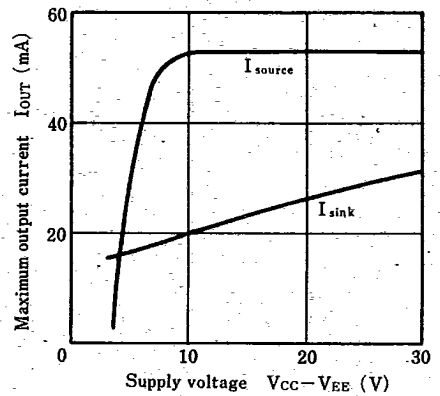
Voltage gain—Supply voltage Characteristics



### Input bias current—Supply voltage Characteristics

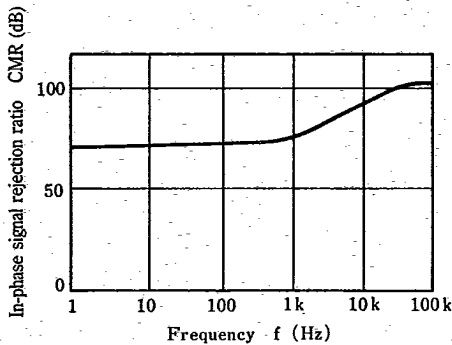


### Maximum output current—Supply voltage Characteristics

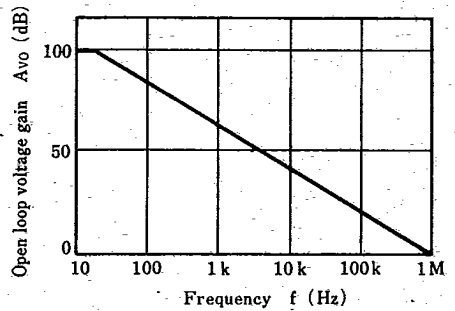


### In-phase signal rejection ratio—Frequency Characteristics

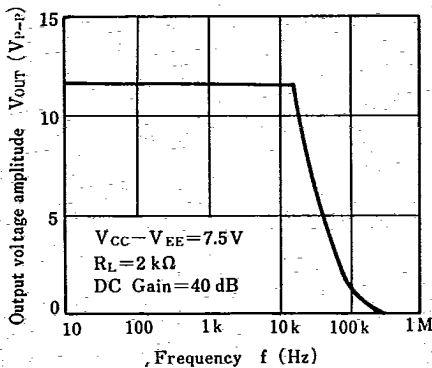
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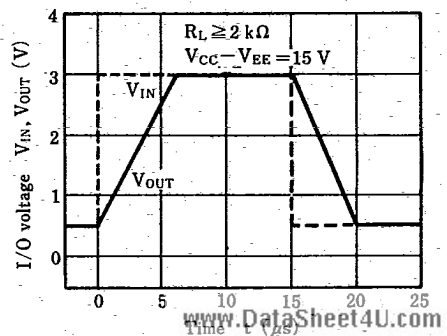
### Open loop voltage gain—Frequency Characteristics



### Major amplitude frequency Characteristics



### Response time Characteristics



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