IR3702/IR3702N General Purpose Quad Operational Amplifier

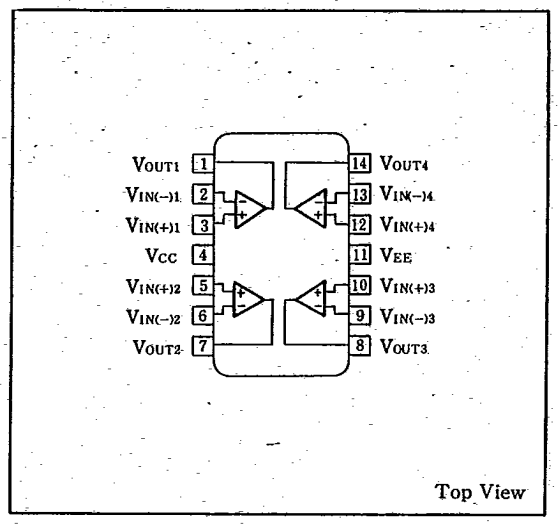
Description

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.

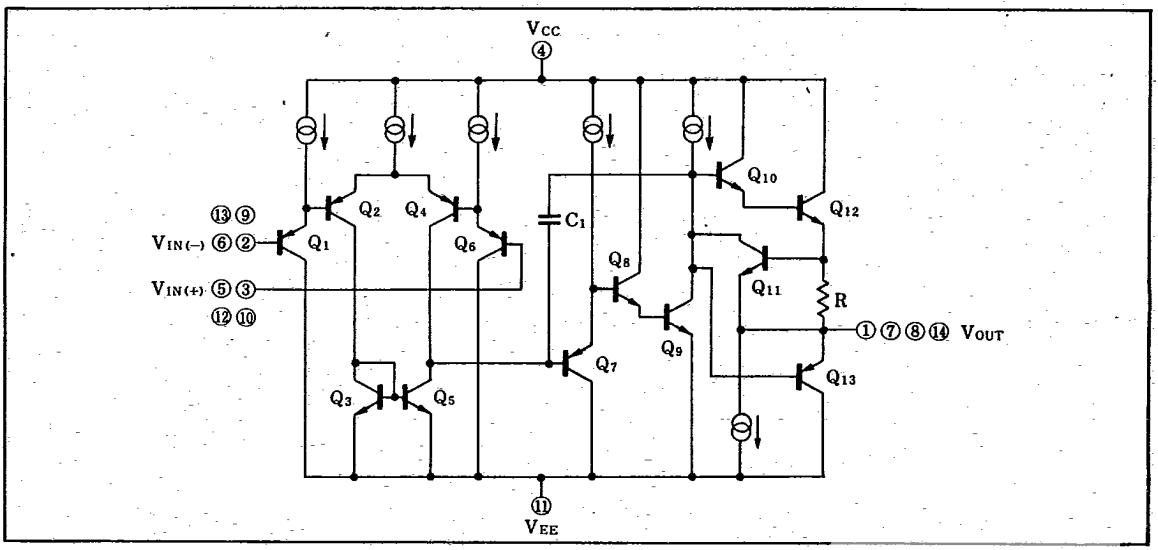
Features

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



Equivalent Circuit



■ Absolute Maximum Ratings

(Ta=25℃)

Parameter	Symbol	Condition		Rating	Unit
Supply voltage	$V_{CC}-V_{EE}$			36	V
Differential input voltage	V_{ID}			V_{EE}~V_{CC}	V
In-phase input voltage	V_{ICM}			$(V_{EE}-0.3)$~V_{CC}	V
Power dissipation	P_D	Ta≦25℃	IR3702	650	mW
			IR3702N	625	
P_D derating ratio	ΔP_D/℃	Ta>25℃	IR3702	6.5	mW/℃
			IR3702N	5	
Operating temperature	T_{opr}			−30~+85	℃
Storage temperature	T_{stg}		IR3702	−40~+125	℃
			IR3702N	−55~+150	

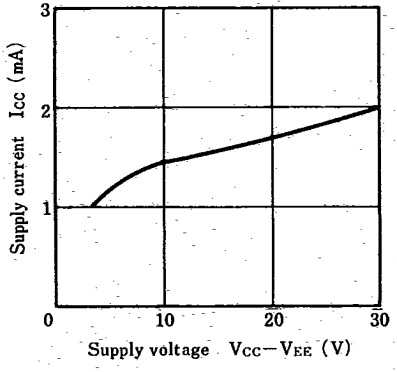
■ Electrical Characteristics

(V_{CC}=8V, V_{EE}=−8V, Ta=25℃)

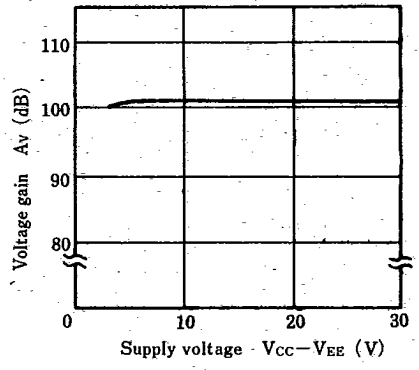
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input offset voltage	V_{IO}	R_S=50Ω		2	7	mV
Input offset current	I_{IO}			±5	±50	nA
Input bias current	I_B			50	500	nA
In-phase input voltage	V_{ICM}		V_{EE}		V_{CC}−1.5	V
Major amplitude voltage gain	A_V	R_L≧2kΩ	80	95		dB
Supply current	I_{CC}			1.2	3.0	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=2kΩ, $V_{IN(+)}-V_{IN(-)}$=1V	6.0	6.4		V
	V_{OM}(−)	R_L=2kΩ, $V_{IN(+)}-V_{IN(-)}$=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=∞		0.6		V/μs
Channel separation	C.S			120		dB

■ Electrical Characteristic Curves (Unless otherwise specified, Ta=25℃)

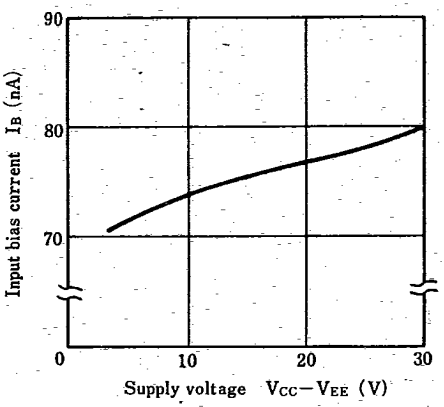
Supply current—Supply voltage Characteristics



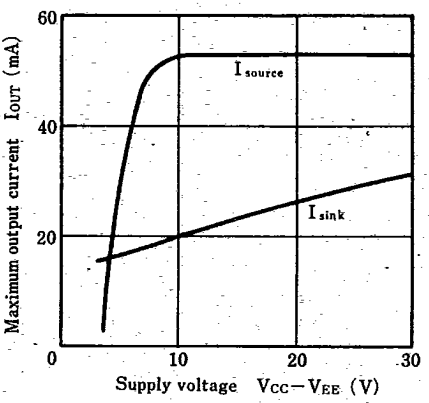
Voltage gain—Supply voltage Characteristics



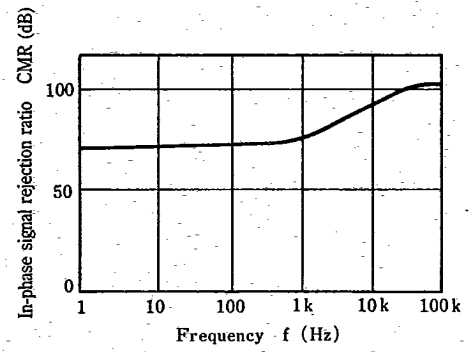
Input bias current—Supply voltage Characteristics



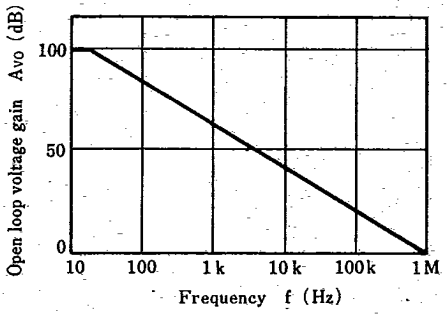
Maximum output current—Supply voltage Characteristics



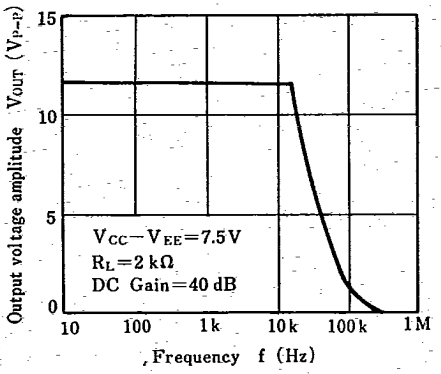
In-phase signal rejection ratio—Frequency Characteristics



Open loop voltage gain—Frequency Characteristics



Major amplitude frequency Characteristics



Response time Characteristics