

General Purpose Quad Operational Amplifier

IR3702/IR3702N

T-79-05-40

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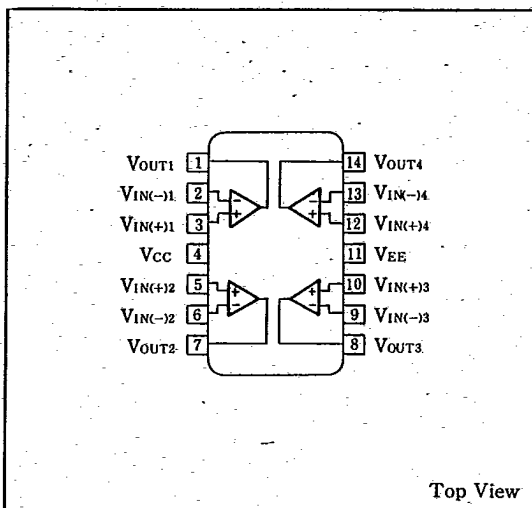
Description

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.

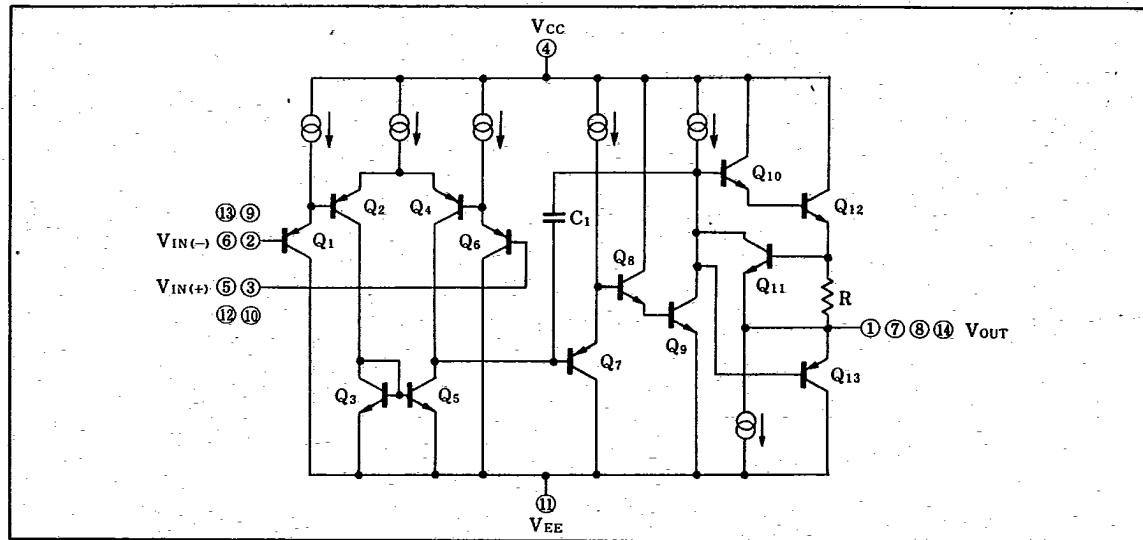
Features

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



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■ Absolute Maximum Ratings

(Ta=25°C)

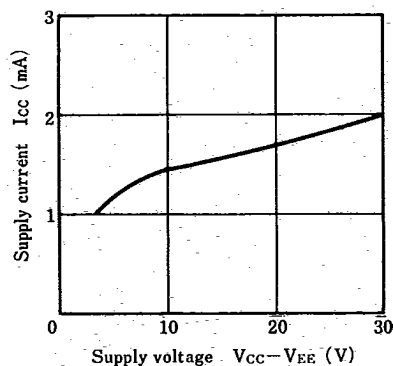
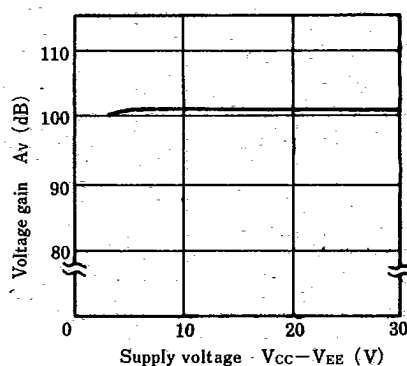
Parameter	Symbol	Condition	Rating	Unit
Supply voltage	$V_{CC}-V_{EE}$		36	V
Differential input voltage	V_{ID}		$V_{EE}\sim V_{CC}$	V
In-phase input voltage	V_{ICM}		$(V_{EE}-0.3)\sim V_{CC}$	V
Power dissipation	P_D	$T_a\leq 25^\circ\text{C}$	650	mW
		IR3702N	625	
P_D derating ratio	$\Delta P_D/^\circ\text{C}$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

■ Electrical Characteristics

(V_{CC}=8V, V_{EE}=-8V, Ta=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, Ta=25°C)

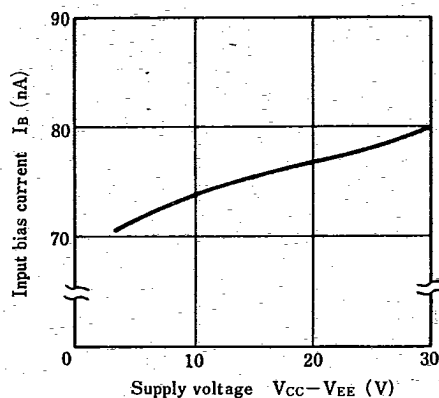
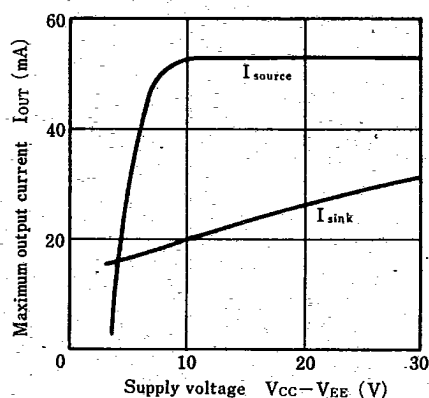
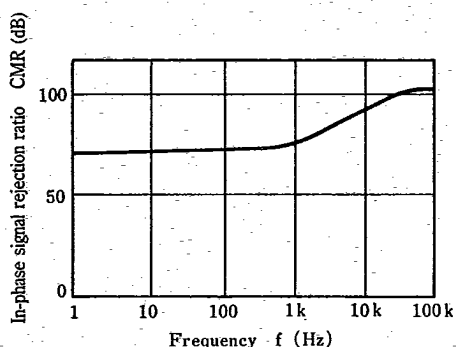
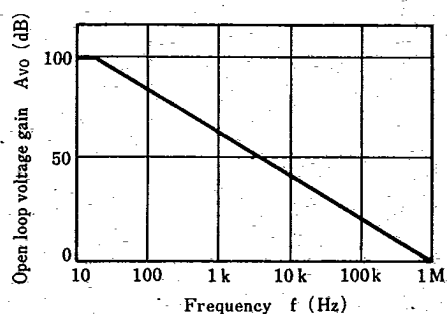
Supply current—Supply voltage
CharacteristicsVoltage gain—Supply voltage
Characteristics

SHARP

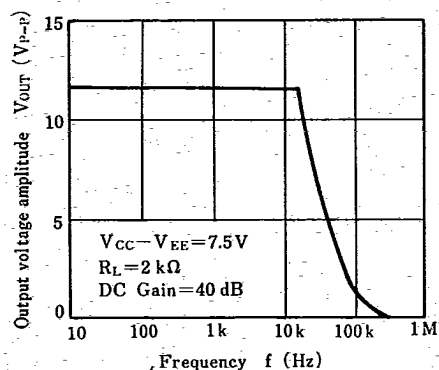
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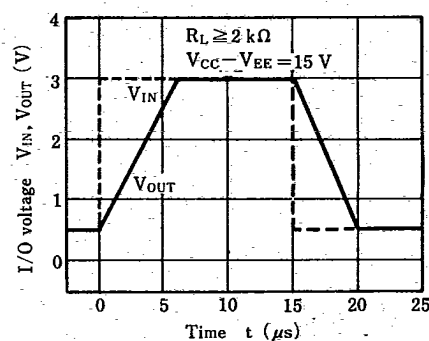
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Input bias current—Supply voltage
CharacteristicsMaximum output current—Supply voltage
CharacteristicsIn-phase signal rejection ratio—Frequency
CharacteristicsOpen loop voltage gain—Frequency
Characteristics

Major amplitude frequency Characteristics



Response time Characteristics



SHARP