

To all our customers

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## **Regarding the change of names mentioned in the document, such as Mitsubishi Electric and Mitsubishi XX, to Renesas Technology Corp.**

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The semiconductor operations of Hitachi and Mitsubishi Electric were transferred to Renesas Technology Corporation on April 1st 2003. These operations include microcomputer, logic, analog and discrete devices, and memory chips other than DRAMs (flash memory, SRAMs etc.) Accordingly, although Mitsubishi Electric, Mitsubishi Electric Corporation, Mitsubishi Semiconductors, and other Mitsubishi brand names are mentioned in the document, these names have in fact all been changed to Renesas Technology Corp. Thank you for your understanding. Except for our corporate trademark, logo and corporate statement, no changes whatsoever have been made to the contents of the document, and these changes do not constitute any alteration to the contents of the document itself.

Note : Mitsubishi Electric will continue the business operations of high frequency & optical devices and power devices.

Renesas Technology Corp.  
Customer Support Dept.  
April 1, 2003

**PRELIMINARY**  
 Notice: This is not a final specification.  
 Some parametric limits are subject to change.

# M6255X Series

## GENERAL PURPOSE C-MOS OP AMP(SINGLE/DUAL/QUAD)

### DESCRIPTION

The M6255X is a single power supply system semiconductor integrated circuit designed to be used for general-purpose arithmetic amplifier of general electronic equipment for consumer appliances.

This IC adopts C-MOS structure to achieve low power consumption and is therefore optimum for the recent boom in portable electronic equipment. The IC is also available for various applications for its full swing in both input and output, though the IC has a single power supply.

### FEATURES

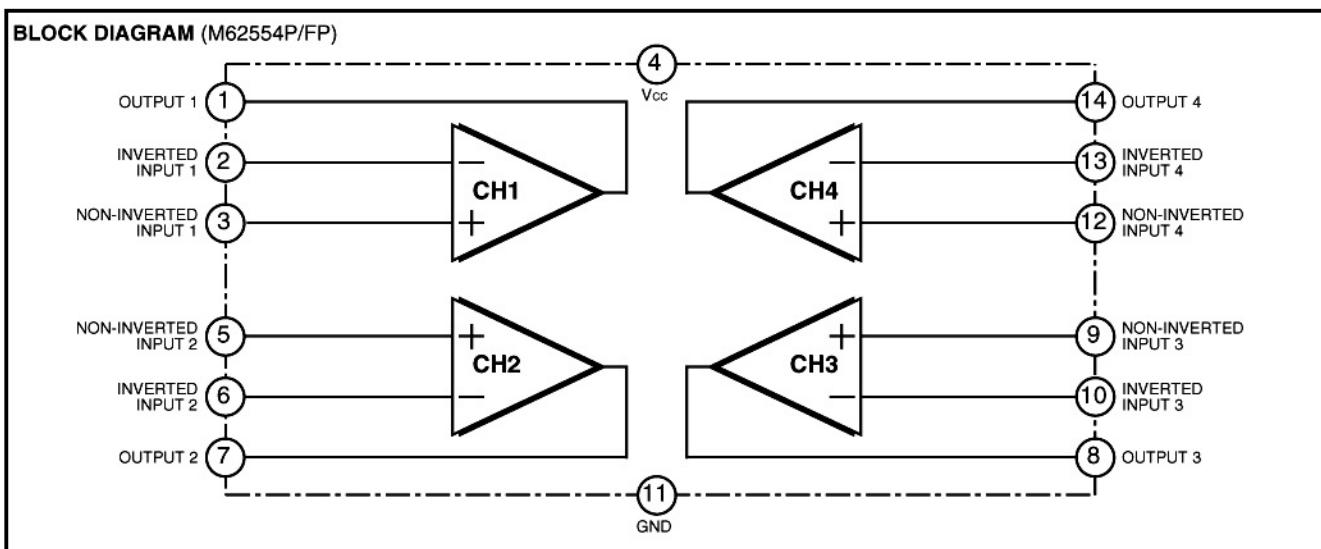
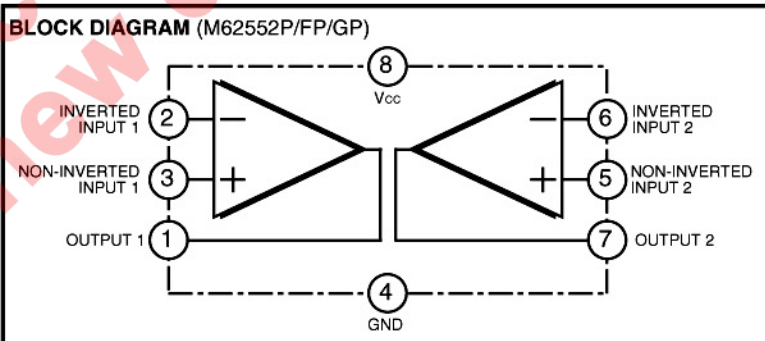
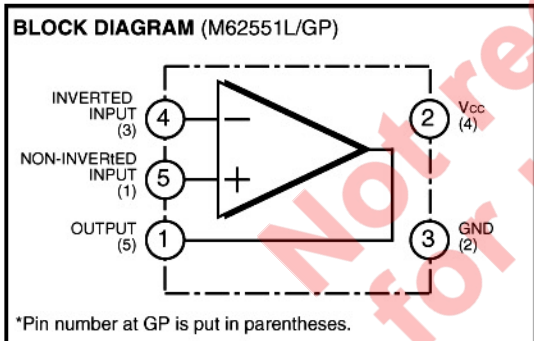
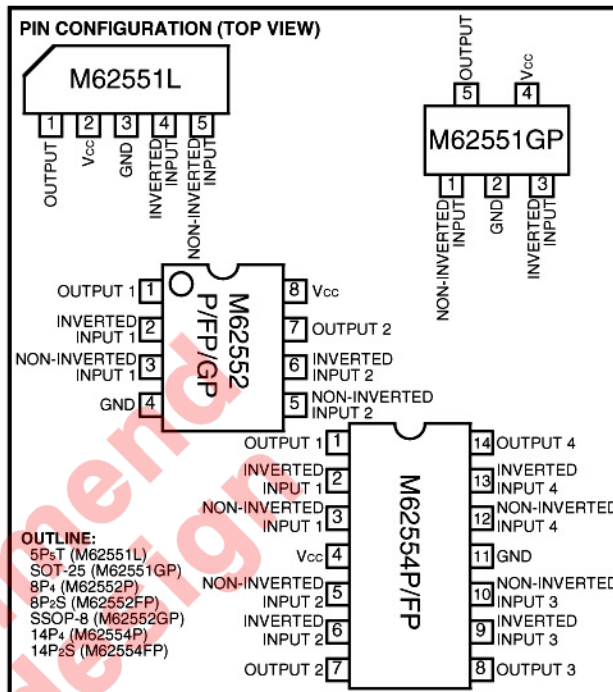
- Dissipation current.....0.19/0.38/0.76mA<551/552/554> (TYP)
- Output wide..... $V_O = GND$  to  $V_{CC}$  ( $V_{IN} = GND$  to  $V_{CC}$ )
- Slew rate.....SR=1.2V/ S (TYP)
- Small size SSOP package. (551GP/ 552GP)

### APPLICATION

Various types of arithmetic circuits for ink jet printer and other general electronic equipment

### RECOMMENDED OPERATING CONDITIONS

Supply voltage.....5V



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# M6255X Series

## GENERAL PURPOSE CMOS OP AMP(SINGLE/DUAL/QUAD)

### ABSOLUTE MAXIMUM RATINGS (Ta=25 C, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit	
Vcc	Supply voltage		7	V	
Isink Isource	Load current		10	mA	
VIN	Input voltage	VIN Vcc	-0.3 to 7	V	
Vid	Differential Input voltage		7	V	
Pd	Power dissipation	Ta=25 C	M62551	450(L)/200(GP)	mW
			M62552	625(P)/440(FP)/280(GP)	
			M62554	700(P)/550(FP)	
Ktheta	Thermal derating	Ta>25 C	M62551	4.5(L)2.0(GP)	mW/ C
			M62552	6.25(P)/4.4(FP)/2.8(GP)	
			M62554	7.0(P)/5.5(FP)	
Topr	Ambient temperature		-20 to +85	C	
Tstg	Storage temperature		-40 to +125	C	

### ELECTRICAL CHARACTERISTICS (Ta=25 C, Vcc=5V unless otherwise noted)

Symbol	Parameter	Test condition	Limits			Unit
			Min.	Typ	Max	
ICC	Circuit current	Gv=0dB, RL=	M62551	0.19	0.30	mA
			M62552	0.38	0.60	
			M62554	0.76	1.20	
VIO	Input offset voltage	Gv=0dB, RL=		4	8	mV
IB	Input bias current			1	50	pA
VICM	Common mode voltage range		0		Vcc	V
GVO	Open loop voltage gain	RL 20K	80	100		dB
VOH	Output voltage swing	Gv=0dB, VIN=Vcc, Io=+5mA	Vcc-0.5	Vcc-0.1		V
VOL		Gv=0dB, VIN=Vcc, Io=+1mA	Vcc-0.1	Vcc-0.02		
		Gv=0dB, VIN=Vcc, Io=-5mA		0.05	0.25	
		Gv=0dB, VIN=Vcc, Io=-1mA		0.01	0.1	
CMRR	Common mode rejection ratio			65		dB
SVRR	Supply voltage rejection ratio			65		dB
SR	Slew rate	Gv=0dB, RL=		1.2		V/ S
fT	Gain bandwidth product			1.0		MHz
VNI	Input conversion noise voltage	VIN=2.5V, Rs=1K , BW:10Hz,30KHz		5	10	Vrms

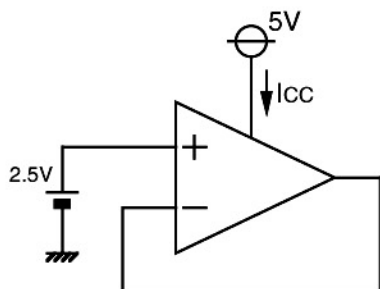
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# M6255X Series

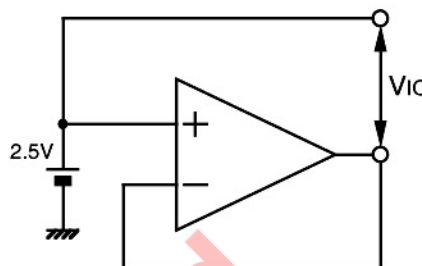
GENERAL PURPOSE C•MOS OP AMP(SINGLE/DUAL/QUAD)

## MEASUREMENT CIRCUIT

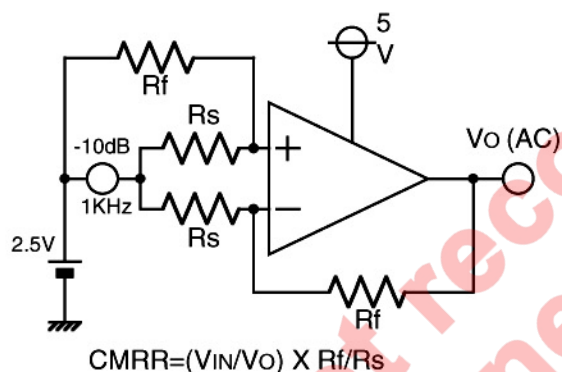
(1) CIRCUIT CURRENT



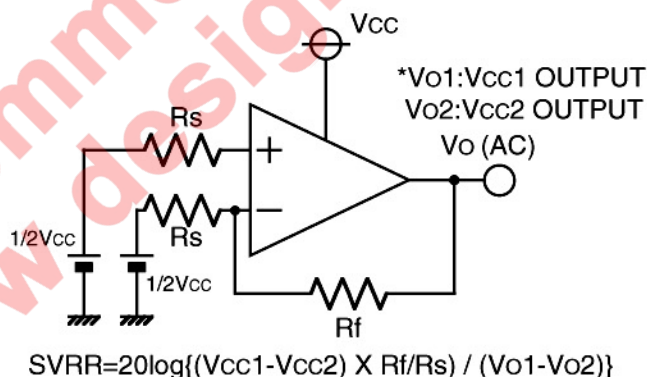
(2) INPUT OFFSET VOLTAGE



(3) COMMON MODE REJECTION RATIO

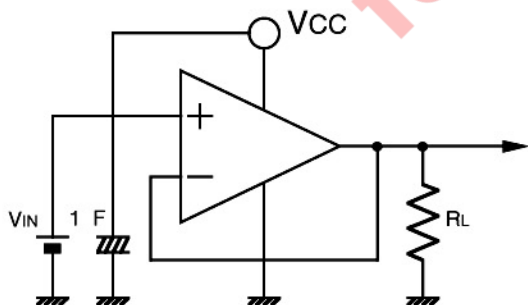


(4) SUPPLY VOLTAGE REJECTION RATIO

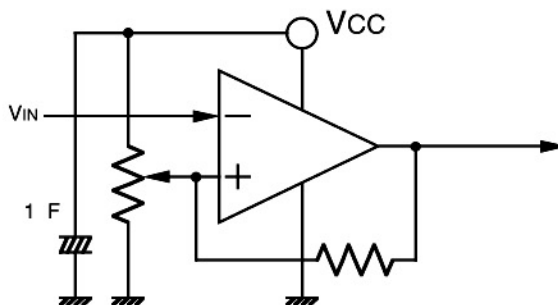


## APPLICATION

(1) VOLTAGE FOLLOWER



(2) LEVEL DETECTOR



⚠ Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit design, in order to prevent fires from spreading, redundancy, malfunction or other mishap.