

High GBW at Lower Power, RRIO Op-Amp that saves the battery life of your IoT design

- ✓ Maximized ratio of GBW to supply current is ideal for battery powered IoT
Supply current: 50 μ A typ., GBW: 1.7MHz typ.
- ✓ Wide operating temperature range for industrial and IoT
Operating temperature range: -55 to 125 $^{\circ}$ C
- ✓ Excellent EMI Immunity
- ✓ 1ch, 2ch and 4ch versions available
1ch version: pin to pin compatible with competition pin-outs on the market

■ Why does above matter?

The available frequency bandwidth of NJU7755x series is improved by about 140% up to 1.7MHz, and the operating current is reduced by about 85% down to 50 μ A per channel compared to previous products. This makes the new series highly suitable for high performance and battery powered IoT systems and sensors. The wide operating temperature range enables applications that can be used even in severe environments of minus temperatures down to -55 $^{\circ}$ C such as in cold regions, test equipment and freezing chambers.

In order to further improve the reliability of IoT and sensor modules, the NJU7755x series offers excellent EMI immunity to reduce malfunctions and system costs, making them ideal for EMI-sensitive applications.

■ Applicable field

- ▶ Signal amplifier for any sensor with long battery life:
 - ▶ PIR sensor
 - ▶ Home appliances with dust sensor
 - ▶ Pressure gauge
 - ▶ Gas sensor
 - ▶ Smoke sensor
 - ▶ Portable gas detectors
- ▶ Industrial appliances under severe temperature
 - ▶ for Coriolis flow meter
 - ▶ Water flow sensor
 - ▶ Environmental monitoring
 - ▶ Boiler control
 - ▶ Gas leak detector for gas appliances
 - ▶ Process control industries

[datasheet Link](#)



■ Features ($V^+=5$ [V] typ.) & Comparison Table

Supplier		NJR	TI	AD	Microchip
Single		NJU77550 NJU77551	OPA348	AD8541	MCP6001
Dual		NJU77552	OPA2348	AD8542	MCP6002
Quad		NJU77554	OPA4348	AD8544	MCP6004
Operating voltage		1.8V to 5.5V	2.1V to 5.5V	2.7V to 5.5V	1.8V to 6.0V
Supply current per amplifier		50 μ A typ. (70 μ A max.)	45 μ A typ. (65 μ A max.)	45 μ A typ. (65 μ A max.)	100 μ A typ. (170 μ A max.)
GBW		1.7MHz typ.	1MHz typ.	1MHz typ.	1MHz typ.
Voltage noise		24nV/ \sqrt Hz typ.	35nV/ \sqrt Hz typ.	42nV/ \sqrt Hz typ.	28nV/ \sqrt Hz typ.
Operating Temperature		-55 $^{\circ}$ C to 125 $^{\circ}$ C	-40 $^{\circ}$ C to 125 $^{\circ}$ C	-40 $^{\circ}$ C to 125 $^{\circ}$ C	-40 $^{\circ}$ C to 125 $^{\circ}$ C
Slew rate		0.8V/ μ s typ.	0.5V/ μ s typ.	0.92V/ μ s typ.	0.6V/ μ s typ.
Input Offset V_{IO}		5mV max.	5mV max.	6mV max.	4.5mV max.
V_{IO} drift		1 μ V/ $^{\circ}$ C typ.	4 μ V/ $^{\circ}$ C typ.	4 μ V/ $^{\circ}$ C typ.	2 μ V/ $^{\circ}$ C typ.
Rail-to-Rail		Input / Output	Input / Output	Input / Output	Input / Output
Package	Single	SOT-23-5, SC-88A	SOT23-5, SC70, SO-8	SOT-23-5, SC70, SOIC8	SOT-23-5, SC70
	Dual	SOP8, MSOP8 (TVSP8) DFN8-U1(ESON8-U1) *UD	SOT23-8, SO-8	SOIC8, MSOP8, TSSOP8	DIP8, SOIC8, MSOP8
	Quad	SSOP14	SO-14, TSSOP14	SOIC14, SSOP14	DIP14, SOIC14, TSSOP14

* All information, specifications and product descriptions in this document are subject to change at any time, without prior notice.

* Contact your local NJR office or your distributor to obtain the latest specifications before placing your product order.

