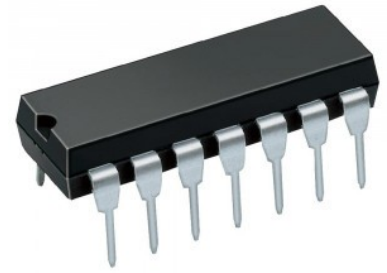




PRODUCT NAME : LT1058 Quad JFET Input Precision High Speed Operational Amplifier

PRICE : Rs 25.00

SKU : RM2002



DESCRIPTION

A diode is a two-terminal electronic component with asymmetric conductance; it has low resistance to current in one direction, and high resistance in the other direction.

Features

- Matched JFET Input Op-Amp with High-Speed and Precision Specifications
- Input Offset Voltage: 150 μ V
- Input Offset Current: 50 pA
- Slew Rate: 14V / μ s
- Gain Bandwidth Product: 5 MHz
- Maximum Supply Voltage: \pm 20V



LT1057/LT1058

Dual and Quad, JFET Input Precision High Speed Op Amps

FEATURES

- 14V/ μ s Slew Rate: 10V/ μ s Min
- 5MHz Gain-Bandwidth Product
- Fast Settling Time: 1.3 μ s to 0.02%
- 150 μ V Offset Voltage (LT1057): 450 μ V Max
- 180 μ V Offset Voltage (LT1058): 600 μ V Max
- 2 μ V/ $^{\circ}$ C V_{OS} Drift: 7 μ V/ $^{\circ}$ C Max
- 50pA Bias Current at 70 $^{\circ}$ C
- Low Voltage Noise:
 - 13nV/ $\sqrt{\text{Hz}}$ at 1kHz
 - 26nV/ $\sqrt{\text{Hz}}$ at 10Hz

APPLICATIONS

- Precision, High Speed Instrumentation
- Fast, Precision Sample-and-Hold
- Logarithmic Amplifiers
- D/A Output Amplifiers
- Photodiode Amplifiers
- Voltage-to-Frequency Converters
- Frequency-to-Voltage Converters

DESCRIPTION

The LT[®]1057 is a matched JFET input dual op amp in the industry standard 8-pin configuration, featuring a combination of outstanding high speed and precision specifications. It replaces all the popular bipolar and JFET input dual op amps. In particular, the LT1057 upgrades the performance of systems using the LF412A and OP-215 JFET input duals.

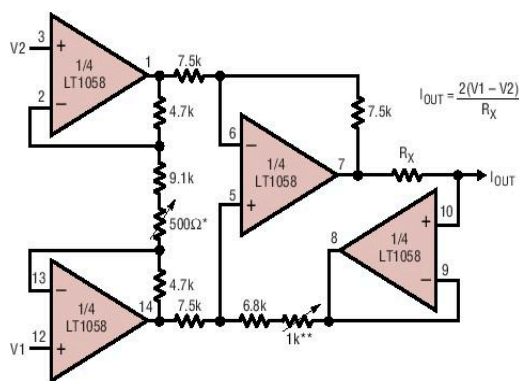
The LT1058 is the lowest offset quad JFET input operational amplifier in the standard 14-pin configuration. It offers significant accuracy improvement over presently available JFET input quad operational amplifiers. The LT1058 can replace four single precision JFET input op amps, while saving board space, power dissipation and cost.

Both the LT1057 and LT1058 are available in the plastic PDIP package and the surface mount SO package.

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TYPICAL APPLICATION

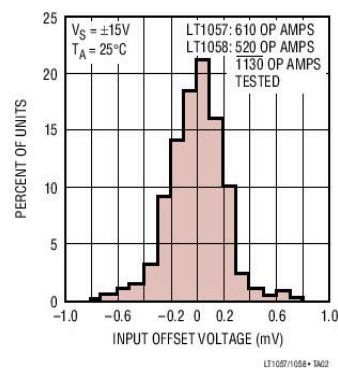
Current Output, High Speed, High Input Impedance Instrumentation Amplifier



*GAIN ADJUST
 **COMMON MODE REJECTION ADJUST
 BANDWIDTH = 2MHz

LT1057/1058 • 1001

Distribution of Offset Voltage (All Packages, LT1057 and LT1058)



10578b



LT1057/LT1058

ELECTRICAL CHARACTERISTICS $V_S = \pm 15V$, $T_A = 25^\circ C$, $V_{CM} = 0V$ unless otherwise noted. (Note 2)

SYMBOL	PARAMETER	CONDITIONS	LT1057AM/LT1058AM LT1057AC/LT1058AC			LT1057M/LT1058M LT1057C/LT1058C			UNITS	
			MIN	TYP	MAX	MIN	TYP	MAX		
V_{OS}	Input Offset Voltage	LT1057 LT1057 (S8 Package) LT1058		150	450		200	800	μV	
							220	1200	μV	
				180	600		250	1000	μV	
I_{OS}	Input Offset Current	Fully Warmed Up		3	40		4	50	pA	
I_B	Input Bias Current	Fully Warmed Up		± 5	± 50		± 7	± 75	pA	
			Input Resistance	Differential	10^{12}		10^{12}			Ω
			Common Mode $V_{CM} = -11V$ to $8V$	10^{12}		10^{12}			Ω	
			Common Mode $V_{CM} = 8V$ to $11V$	10^{11}		10^{11}			Ω	
	Input Capacitance			4		4			pF	
e_n	Input Noise Voltage	0.1Hz to 10Hz,	LT1057 LT1058		2.0		2.1		μV_{P-P}	
					2.4		2.5		μV_{P-P}	
e_n	Input Noise Voltage Density	$f_0 = 10Hz$ $f_0 = 1kHz$ (Note 3)		26		28		nV/\sqrt{Hz}		
				13	22	14	24	nV/\sqrt{Hz}		
i_n	Input Noise Current Density	$f_0 = 10Hz, 1kHz$ (Note 4)		1.5	4		1.8	6	fA/\sqrt{Hz}	
A_{VOL}	Large-Signal Voltage Gain	$V_O = \pm 10V$, $R_L = 2k$ $V_O = \pm 10V$, $R_L = 1k$		150	350		100	300	V/mV	
				120	250		80	220	V/mV	
	Input Voltage Range		± 10.5	14.3 -11.5		± 10.5	14.3 -11.5		V V	
CMRR	Common Mode Rejection Ratio		LT1057 LT1058		86	100		82	98	dB
					84	98		80	96	dB
PSRR	Power Supply Rejection Ratio	$V_S = \pm 10V$ to $\pm 18V$		88	103		86	102	dB	
V_{OUT}	Output Voltage Swing	$R_L = 2k$		± 12	± 13		± 12	± 13	V	
SR	Slew Rate			10	14		8	13	V/ μs	
GBW	Gain-Bandwidth Product	$f = 1MHz$ (Note 6)		3.5	5		3	5	MHz	
I_S	Supply Current Per Amplifier			1.6	2.5		1.7	2.8	mA	
			Channel Separation	DC to 5kHz, $V_{IN} = \pm 10V$		132		130		dB

(LT1057/LT1058 SW Package Only), $V_S = \pm 15V$, $T_A = 25^\circ C$, $V_{CM} = 0V$ unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
V_{OS}	Input Offset Voltage	LT1057 LT1058		0.3	2	mV
					0.35	2.5
I_{OS}	Input Offset Current	Fully Warmed Up		5	50	pA
I_B	Input Bias Current	Fully Warmed Up		± 10	± 100	pA
			Input Resistance –Differential –Common-Mode	$V_{CM} = -11V$ to $8V$ $V_{CM} = 8V$ to $11V$		0.4 0.4 0.05
	Input Capacitance			4		pF
e_n	Input Noise Voltage	0.1Hz to 10Hz	LT1057 LT1058		2.1	μV_{P-P}
					2.5	
e_n	Input Noise Voltage Density	$f_0 = 10Hz$ $f_0 = 1kHz$		26	nV/\sqrt{Hz}	
				13		

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