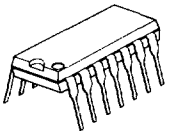
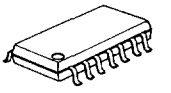
NJM2901

These devices offer higher frequency operation and faster switching than can be had from internally compensated quad op amps. Indeed for single-supply applications, the Darlington PNP input stage allows them to compare voltages that include ground. The two-stage common-emitter output circuit provides gain and output sink capacity of 6mA at an output level of 400mV. The output collector is left open, permitting the designer to drive devices in the range of 2V to 36V.

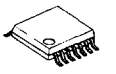
■ Package Outline



NJM2901N



NJM2901M
NJM2901E



NJM2901V

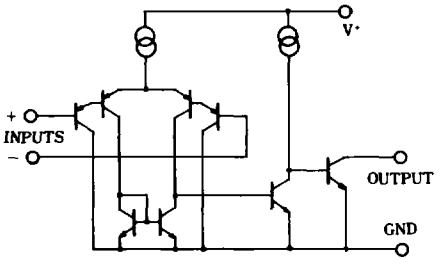
■ Absolute Maximum Ratings (Ta=25°C)

Supply Voltage	V^+	36V (±18V)
Differential Input Voltage	V_{ID}	36V
Input Voltage	V_{IN}	−0.3~+36V
Power Dissipation	P_D (N-Type)	570mW
	(M,V-Type)	300mW
Operating Temperature Range	T_{opr}	−40~+85°C
Storage Temperature Range	T_{stg}	−50~+125°C

■ Electrical Characteristics (Ta=25°C, V^+=5V)

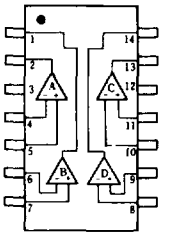
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V_{IO}	R_S=0Ω, V_O≅1.4V	—	2	7	mV
Input Offset Current	I_{IO}	$I_{IN}=I_{IN}^+-I_{IN}^-$	—	5	50	nA
Input Bias Current	I_B		—	25	250	nA
Input Common Mode Voltage Range	V_{ICM}		0~3.5	—	—	V
Large Signal Voltage Gain	Av	R_L=15kΩ	—	106	—	dB
Response Time	t_R	R_l=5.1kΩ	—	1.3	—	μs
Output Sink Current	I_{SINK}	V_{IN}^-=1V, V_{IN}^+=0V, V_o=1.5V	6	16	—	mA
Output Saturation Voltage	V_{SAT}	V_{IN}^-=1V, V_{IN}^+=0V, I_{SINK}=3mA	—	200	400	mV
Output Leakage Current	I_{LEAK}	V_{IN}^-=0V, V_{IN}^+=1V, V_o=5V	—	0.1	1.0	μA
Quiescent Current	I_{CC}	R_l=∞	—	0.8	2	mA

■ Equivalent Circuit(¼ Shown)



■ Connection Diagram

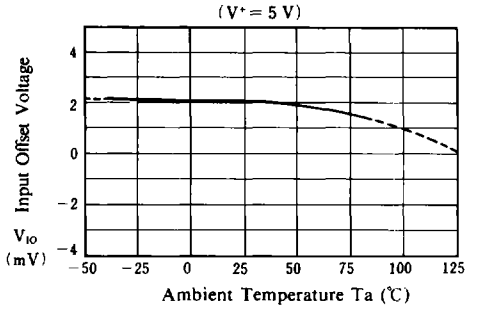
N,M,V-Type
(Top View)



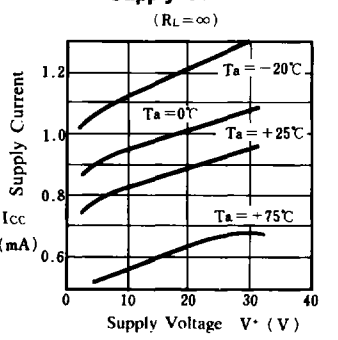
PIN FUNCTION
1. B OUTPUT
2. A OUTPUT
3. V^+
4. A−INPUT
5. A+INPUT
6. B−INPUT
7. B+INPUT
8. C−INPUT
9. C+INPUT
10. D−INPUT
11. D+INPUT
12. GND
13. D OUTPUT
14. C OUTPUT

■ Typical Characteristics

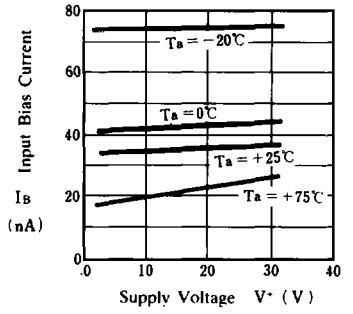
Input Offset Voltage vs. Temperature



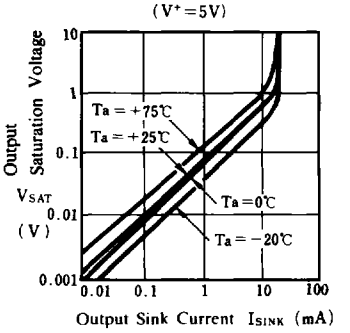
Supply Current



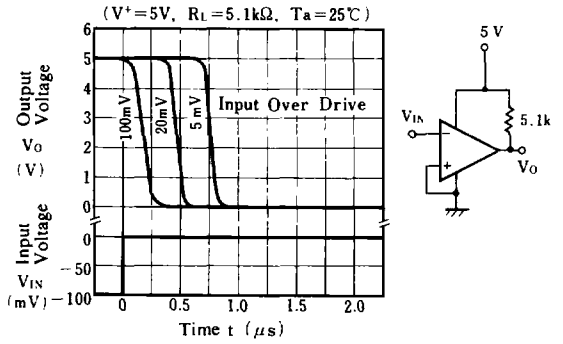
Input Bias Current



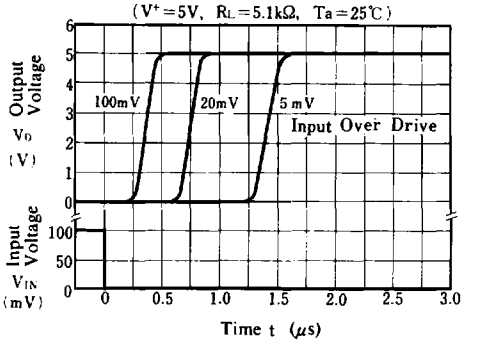
Output Saturation Voltage



Response Time for Various Input Over Drives

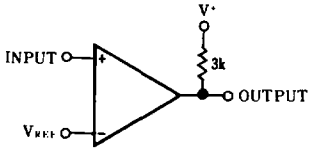


Response Time for Various Input Over Drives

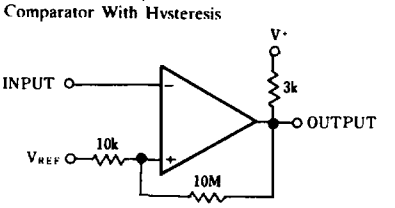


■ Typical Applications

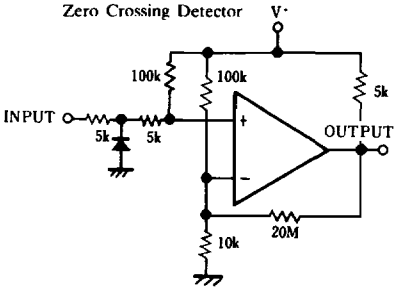
Basic Comparator



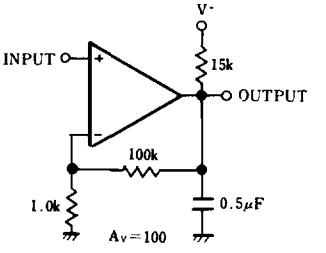
Comparator With Hysteresis



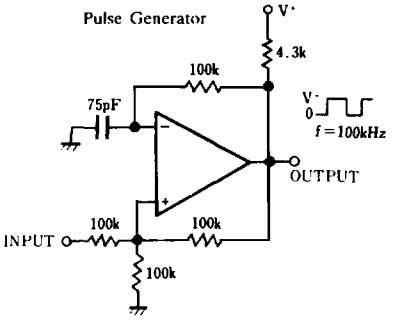
Zero Crossing Detector



Low Frequency Op Amp.



Pulse Generator



Limit Comparator