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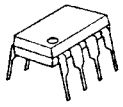
SINGLE SUPPLY DUAL COMPARATOR

■ GENERAL DESCRIPTION

The NJM12903 is single-supply dual voltage comparator, which can operate from 2V supply. The features are low input offset voltage, low input bias current and low current consumption.

The NJM12903 compare the input signal to 0V (ground) due to the Darlington PNP input stage. The package lineup is DIP, DMP and others compact, so that the NJM12903 is suitable for any kind of signal comparator.

■ PACKAGE OUTLINE

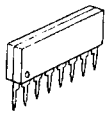

NJM12903D


NJM12903M


NJM12903E


NJM12903V

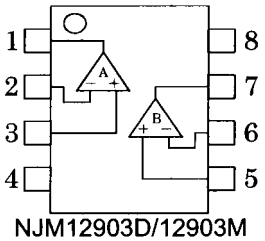

NJM12903R


NJM12903L

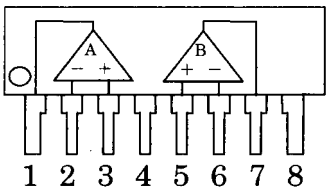
■ FEATURES

- Operating Voltage (+2V~+14V)
- Open Collector Output
- Bipolar Technology
- Package Outline DIP8,DMP8,EMP8,SSOP8, VSP8,SIP8

■ PIN CONFIGURATION



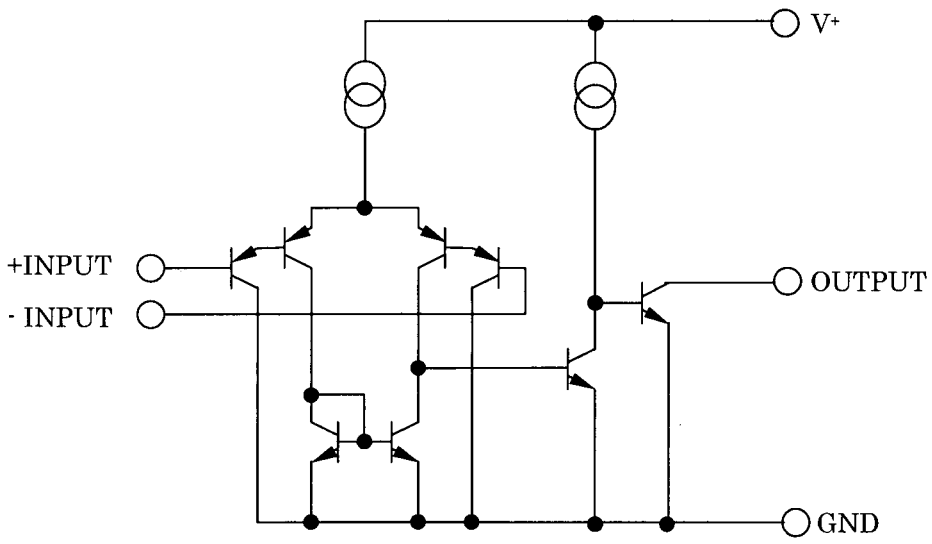
NJM12903D/12903M
NJM12903E/12903V/12903R



NJM12903L

PIN FUNCTION
1.A OUTPUT
2.A -INPUT
3.A +INPUT
4.GND
5.B +INPUT
6.B –INPUT
7.B OUTPUT
8.V^+

■ EQUIVALENT CIRCUIT (1/2 Shown)



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25˚C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	15	V
Differential Input Voltage	V_{ID}	14	V
Input Voltage	V_{IC}	-0.3~+14	V
Power Dissipation	P_D	(DIP8) 500 (DMP8) 300 (EMP8) 300 (SSOP8) 250 (VSP8) 320 (SIP8) 800	mW
Operating Temperature Range	T_{opr}	-40~+85	˚C
Storage Temperature Range	T_{stg}	-50~+125	˚C

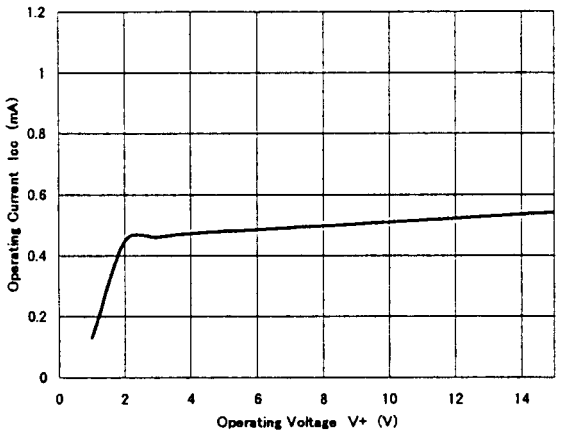
■ ELECTRICAL CHARACTERISTICS

(V^+=5V,Ta=25˚C)

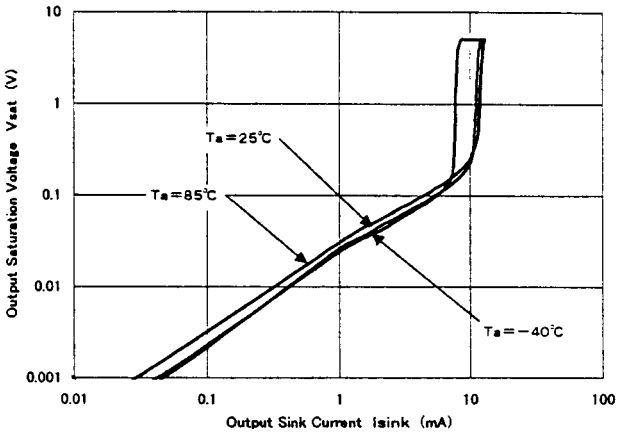
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V_{opr}		2	-	14	V
Input Offset Voltage	V_{IO}	R_S=0Ω,V_O=1.4V	-	1	4	mV
Input Offset Current	I_{IO}		-	5	50	nA
Input Bias Current	I_B		-	30	200	nA
Large Signal Voltage Gain	A_V	R_L=15kΩ	-	106	-	dB
Input Common Mode Voltage Range	V_{ICM}		0~3.5	-	-	V
Response Time	t_R	R_L=5.1kΩ	-	0.5	-	μs
Output Sink Current	I_{SINK}	V_{IN}^-=1V,V_{IN}^+=0V,V_O=1.5V	6	10	-	mA
Output Saturation Voltage	V_{SAT}	V_{IN}^-=1V,V_{IN}^+=0V,I_{SINK}=3mA	-	80	300	mV
Output Leakage Current	I_{LEAK}	V_{IN}^-=1V,V_{IN}^+=0V,V_O=5V	-	0.1	1.0	μA
Operating Current	I_{CC}		-	0.4	1.0	mA

■ TYPICAL CHARACTERISTICS

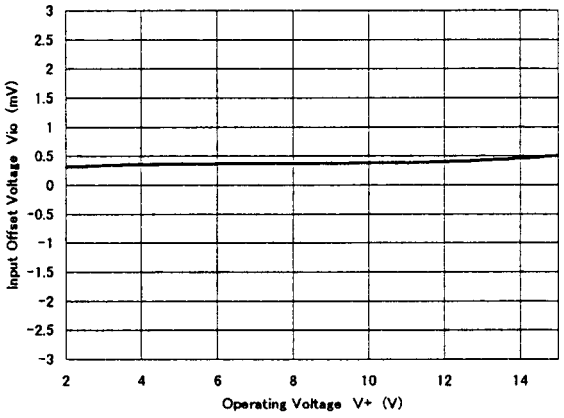
NJM12903 Operating Current vs. Operating Voltage



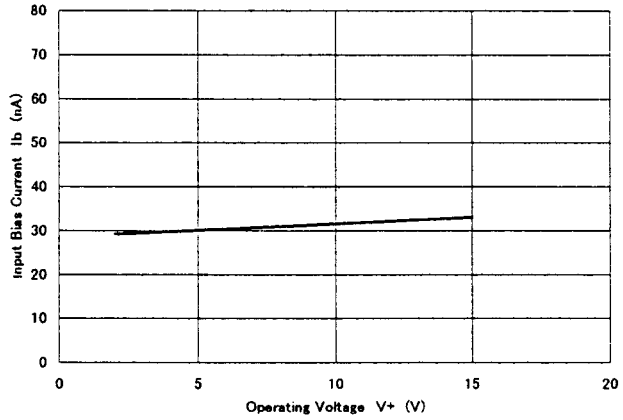
NJM12903 Output Saturation Voltage vs. Output Sink Current



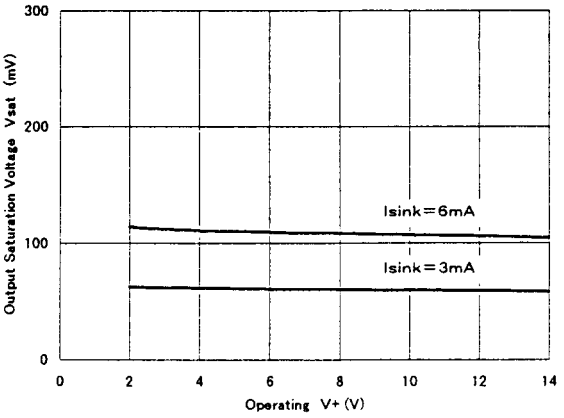
NJM12903 Input Offset Voltage vs. Operating Voltage



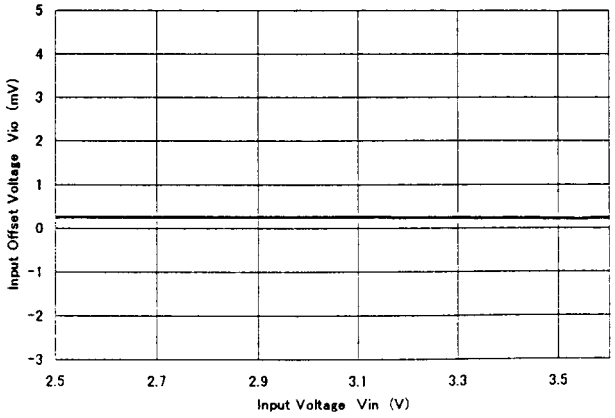
NJM12903 Input Bias Current vs. Operating Voltage



NJM12903 Output Saturation Voltage vs. Operating Voltage

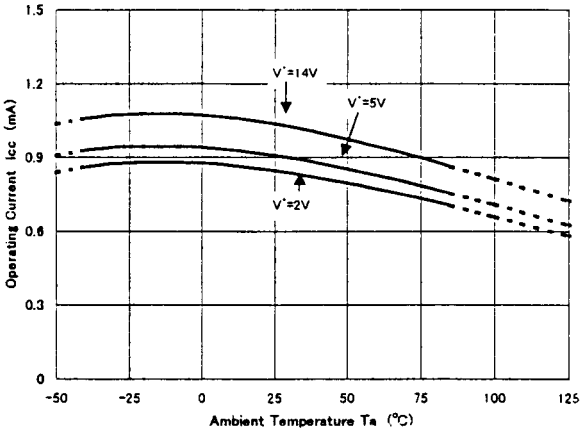


NJM12903 Input Common Mode Voltage Range

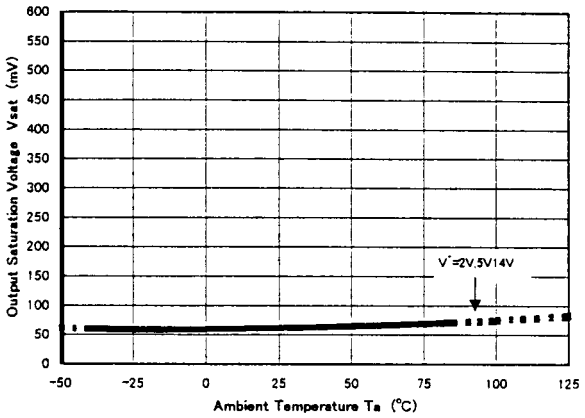


■ TYPICAL CHARACTERISTICS

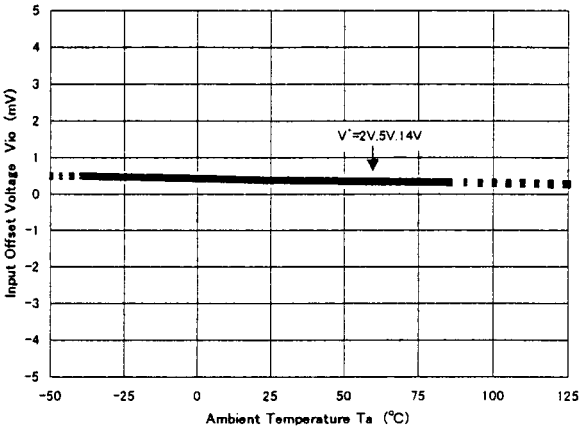
NJM12903 Operating Current vs. Temperature



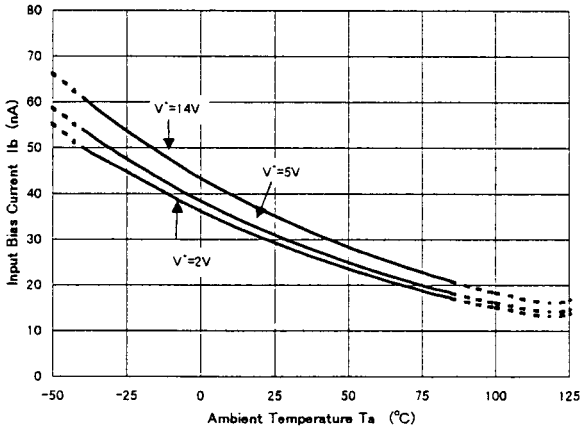
NJM12903 Output Saturation Voltage vs. Temperature
(,Isink=3mA)



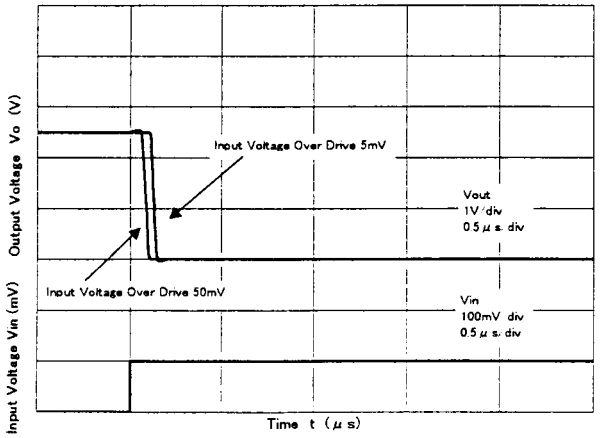
NJM12903 Input Offset Voltage vs. Temperature



NJM12903 Input Bias Current vs. Temperaturwe



NJM12903 Pulse Response



NJM12903 Pulse Response