

SINGLE SUPPLY DUAL COMPARATOR

■ GENERAL DESCRIPTION

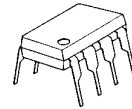
The **NJM12903** is single-supply dual voltage comparator, which can operate from 2V supply. The features are input offset voltage, input bias current and low current consumption.

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, which is SON, so that the **NJM12903** is suitable for any kind of signal comparator.

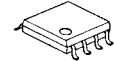
■ FEATURES

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

■ PACKAGE OUTLINE



NJM12903D



NJM12903M



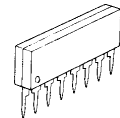
NJM12903E



NJM12903V

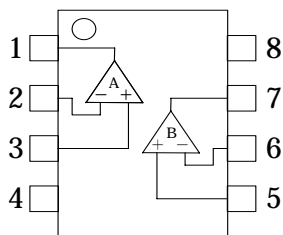


NJM12903R

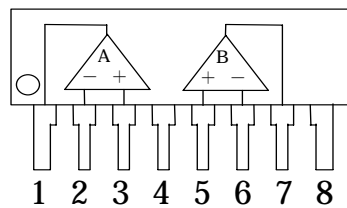


NJM12903L

■ PIN CONFIGURATION



NJM12903D/12903M
NJM12903E/12903V/12903R

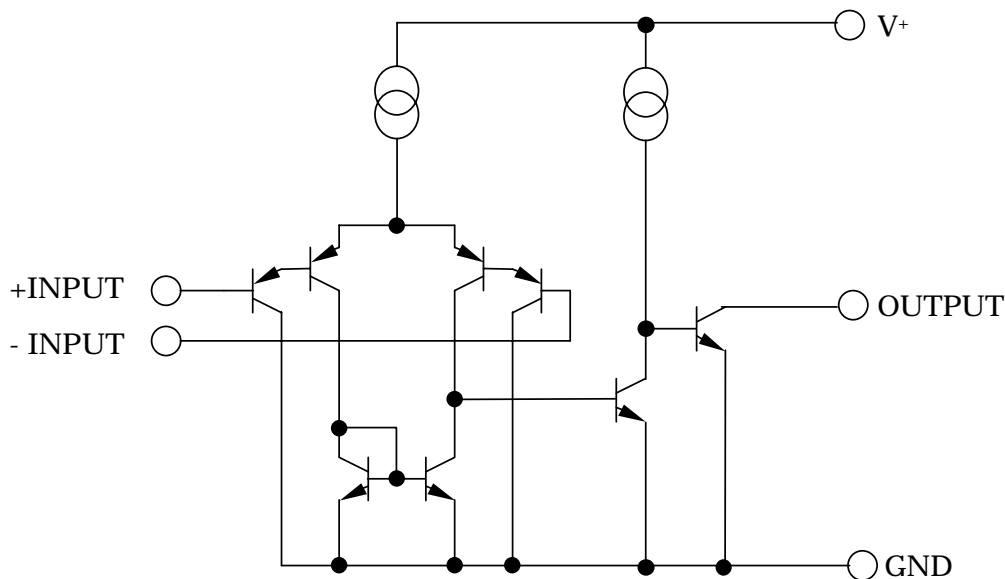


NJM12903L

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 (1/2Shown)



■ ABSOLUTE MAXIMUM RATINGS

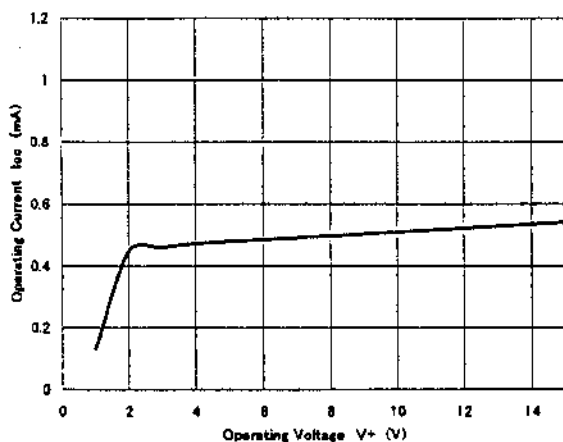
(Ta=25°C)

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

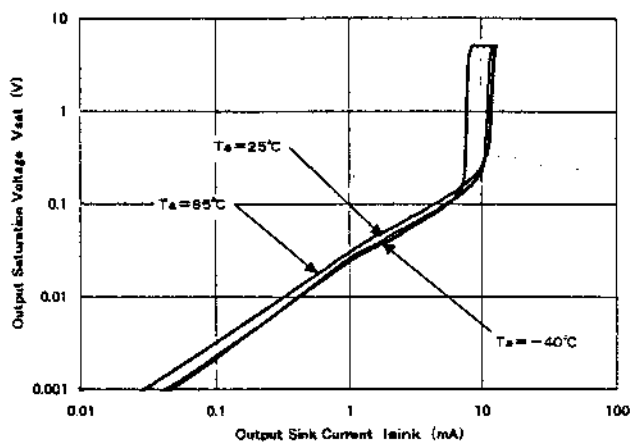
■ ELECTRICAL CHARACTERISTICS ($V^+=5V$, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		2	-	14	V
Input Offset Voltage	V_{IO}	$R_S=0\ \Omega, V_O\approx 1.4V$	-	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	$R_L=15k\Omega$	-	106	-	dB
Input Common Mode Voltage Range	V_{ICM}		0 to 3.5	-	-	V
Response Time	t_R	$R_L=5.1k\Omega$	-	0.5	-	μs
Output Sink Current	I_{SINK}	$V_{IN}^+=0V, V_{IN}^-1V, V_O=1.5V$	6	10	-	mA
Output Saturation	V_{SAT}	$V_{IN}^+=0V, V_{IN}^-1V, I_{SINK}=3mA$	-	80	300	mV
Output Leakage Current	I_{LEAK}	$V_{IN}^+=0V, V_{IN}^-1V, V_O=5V$	-	0.1	1.0	μA
Operating Current	I_{CC}		-	0.4	1.0	mA

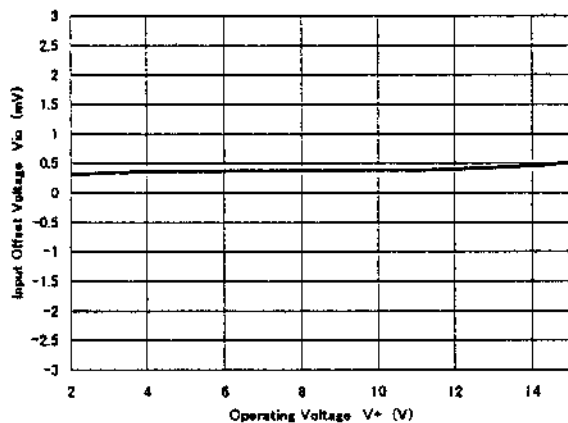
NJM12903 Operating Current vs. Operating Voltage



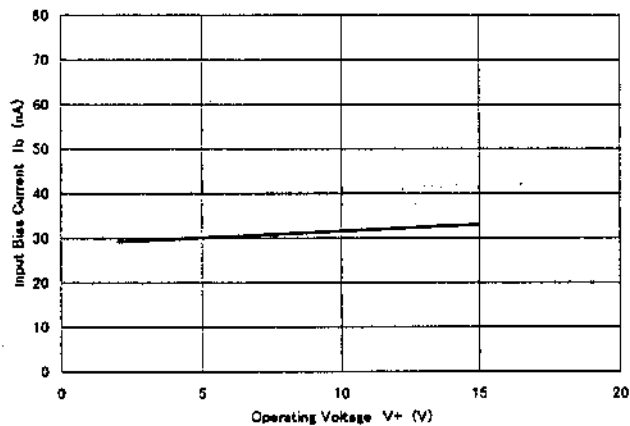
NJM12903 Output Saturation Voltage vs. Output Sink Current



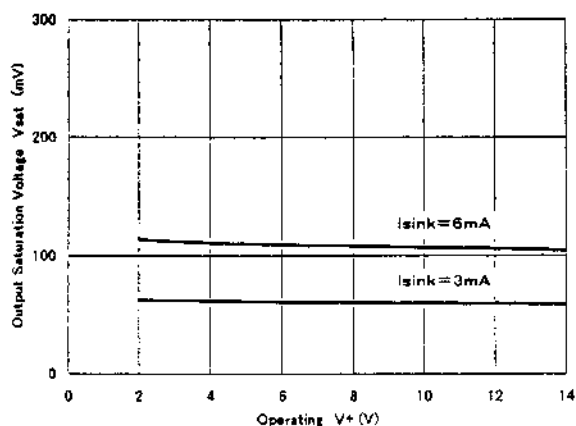
NJM12903 Input Offset Voltage vs. Operating Voltage



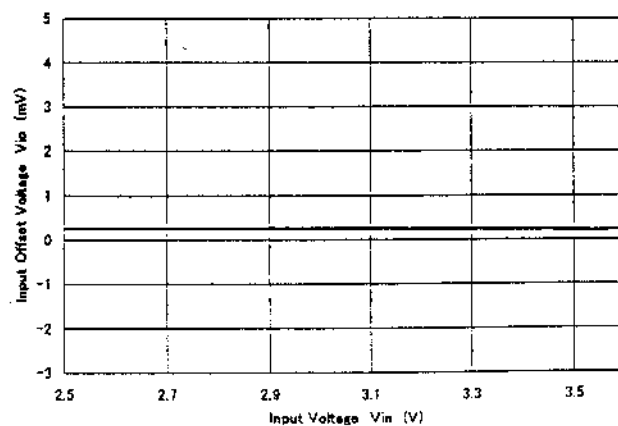
NJM12903 Input Bias Current vs. Operating Voltage



NJM12903 Output Saturation Voltage vs. Operating Voltage

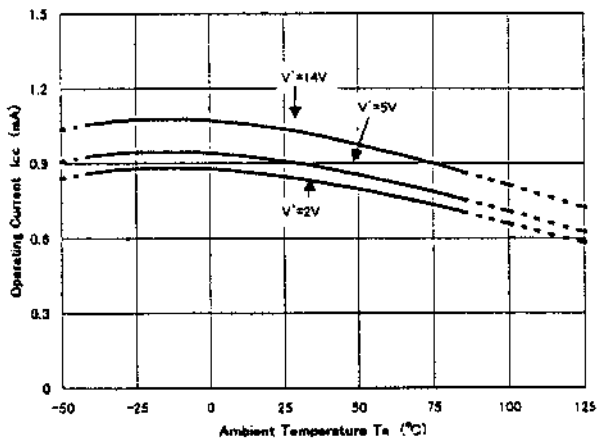


NJM12903 Input Common Mode Voltage Range

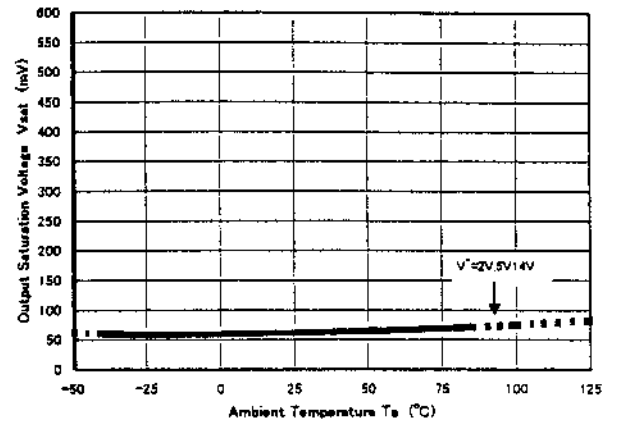


NJM12903

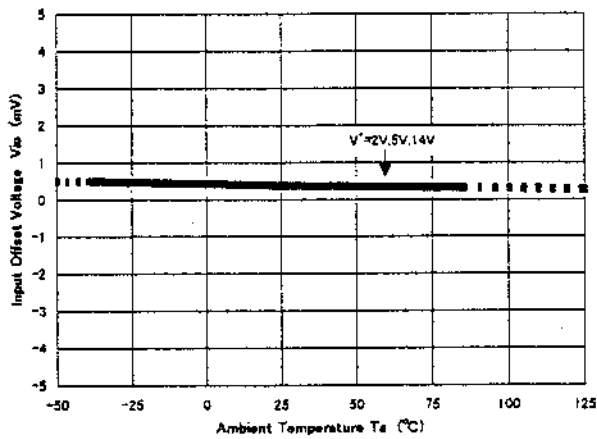
NJM12903 Operating Current vs. Temperature



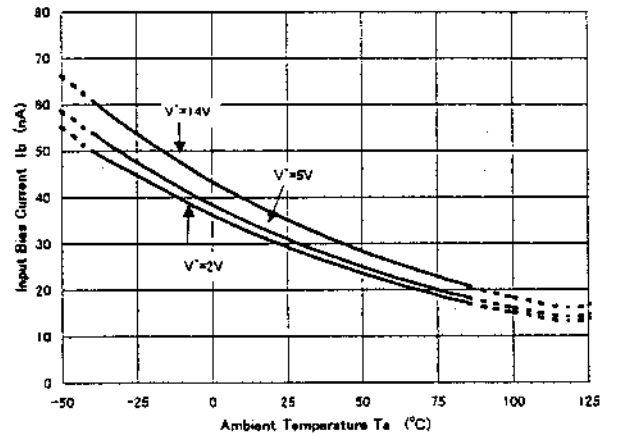
NJM12903 Output Saturation Voltage vs. Temperature
($I_{sink}=3mA$)



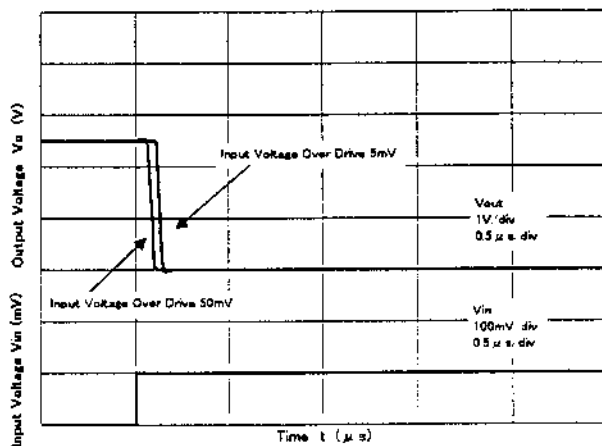
NJM12903 Input Offset Voltage vs. Temperature



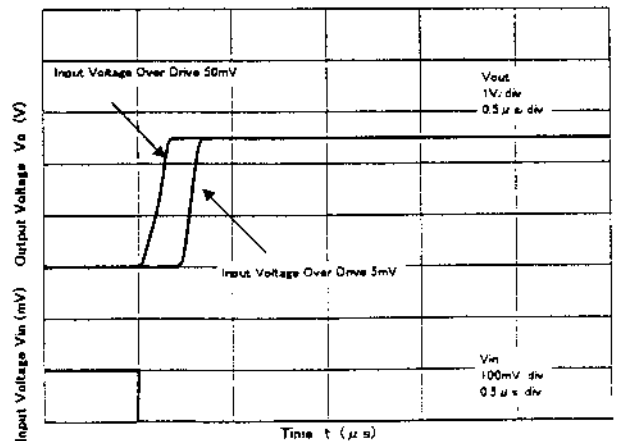
NJM12903 Input Bias Current vs. Temperature



NJM12903 Pulse Response



NJM12903 Pulse Response



MEMO

[CAUTION]
The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.