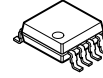


SINGLE-SUPPLY DUAL COMPARATOR

■ FEATURES

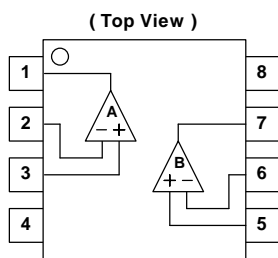
- Single Supply Operation
- Supply Voltage +2V to +36V
- Open Collector Output
- Bipolar Technology
- Operating Temperature $T_a = -40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
- Package Outline MSOP8 (VSP8) MEET JEDEC MO-187-DA
- AEC-Q100 This product meets the reliability level required by AEC-Q100.

■ PACKAGE OUTLINE



NJM2903R-Z2
(MSOP8 (VSP8))

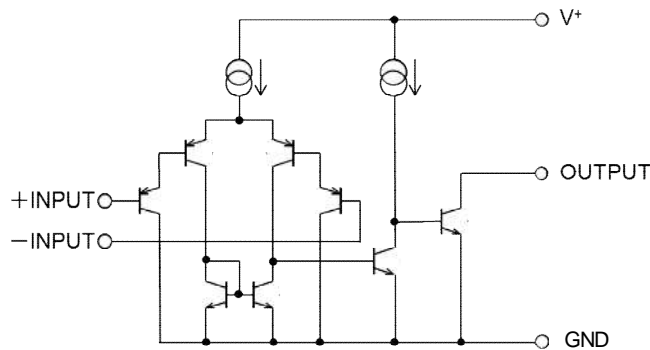
■ PIN CONFIGURATION



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)



Automotive NJM2903

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+(V^+/V)$	36 (or ± 18)	V
Differential Input Voltage (Note1)	V_{ID}	36	V
Input Voltage (Note2)	V_{IN}	$V-0.3$ to $V+36$	V
Output Terminal Input Voltage (Note3)	V_O	$V-0.3$ to $V+36$	V
Power Dissipation (Note4)	P_D	495	mW
Operating Temperature Range	T_{opr}	-40 to +125	°C
Storage Temperature Range	T_{stg}	-50 to +150	°C

Note1: Differential voltage is the voltage difference between +INPUT and -INPUT.

Note2: Input voltage is the voltage should be allowed to apply to the input terminal independent of the magnitude of V^+ .

Note3: Output voltage is the voltage should be allowed to apply to the output terminal independent of the magnitude of V^+ .

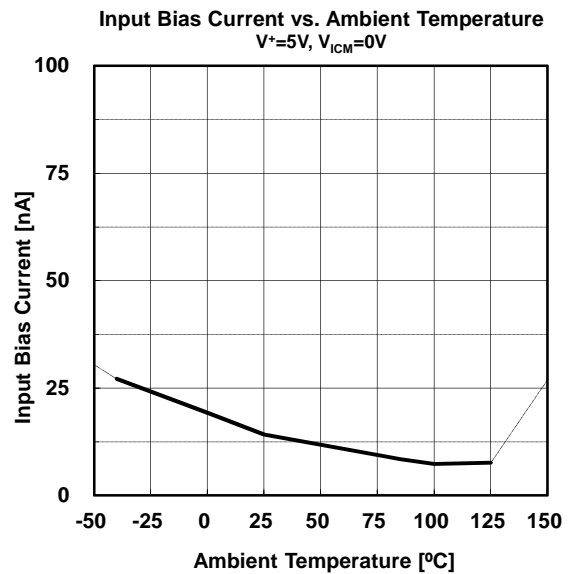
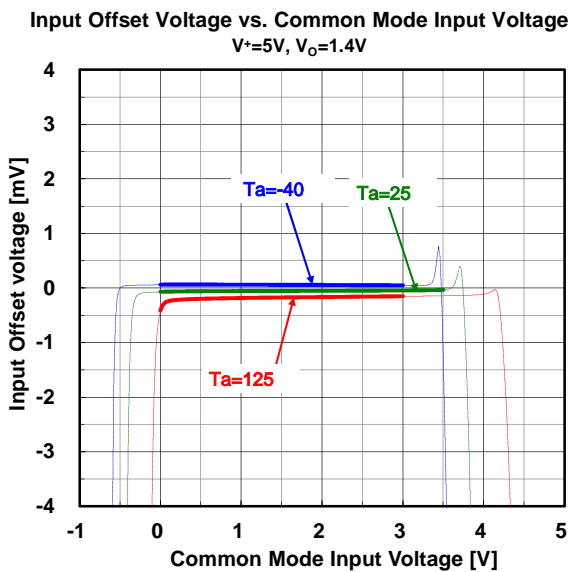
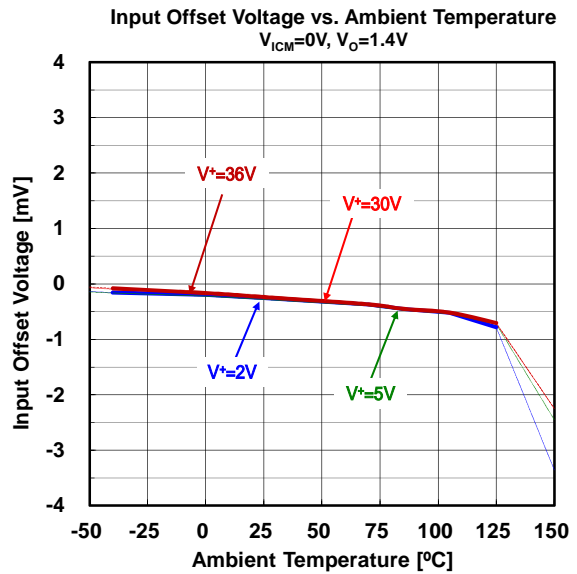
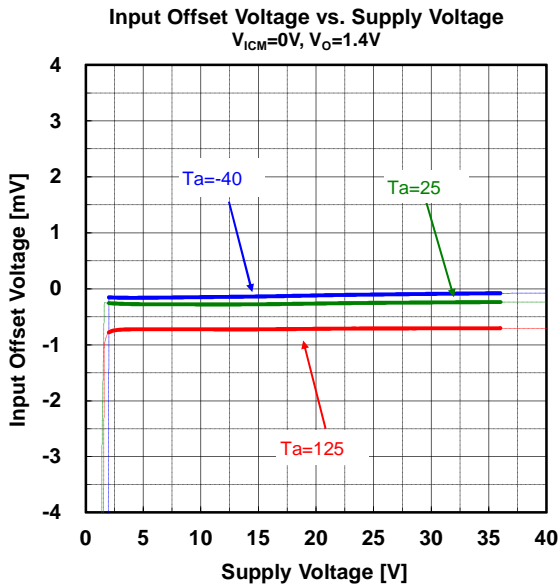
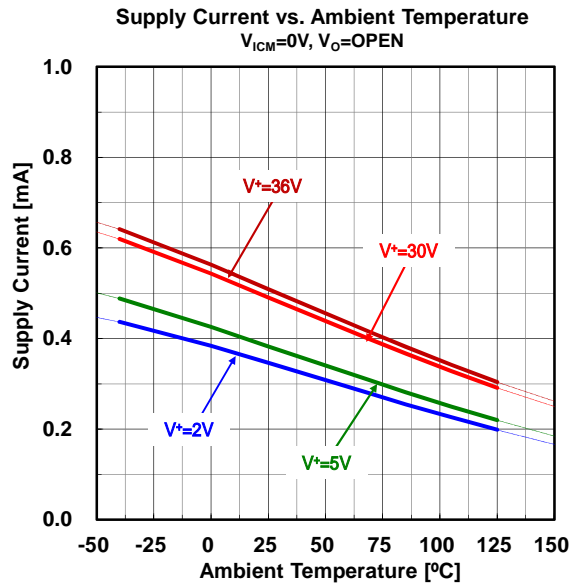
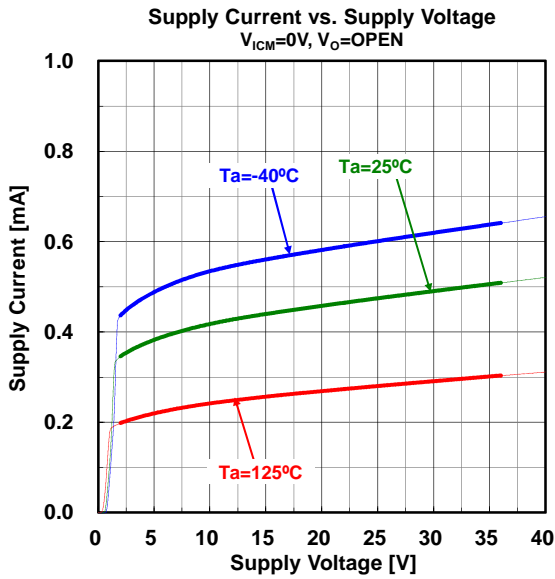
Note4: EIA/JEDEC STANDARD Test board (76.2 x 114.3 x 1.6mm, 2layers, FR-4) mounting

■ ELECTRICAL CHARACTERISTICS

($V^+=5V$, Ta=25°C, unless otherwise noted)

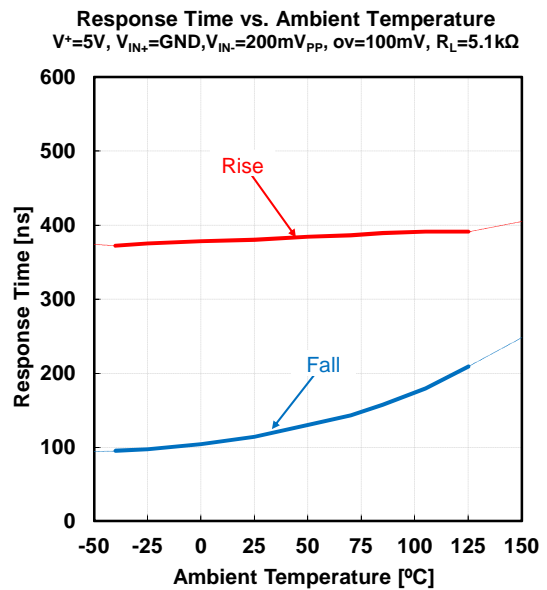
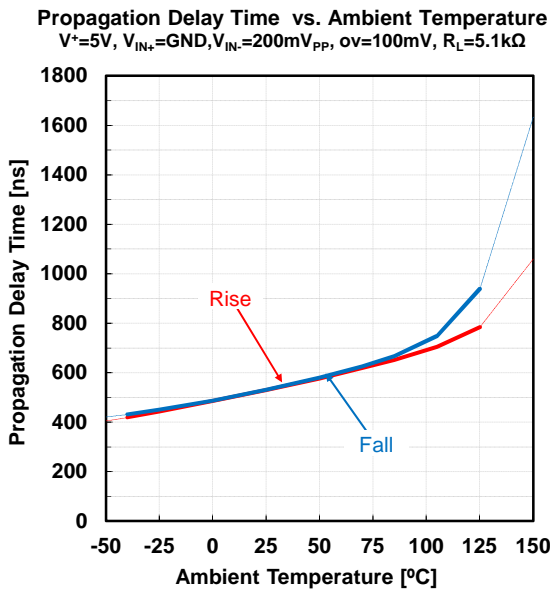
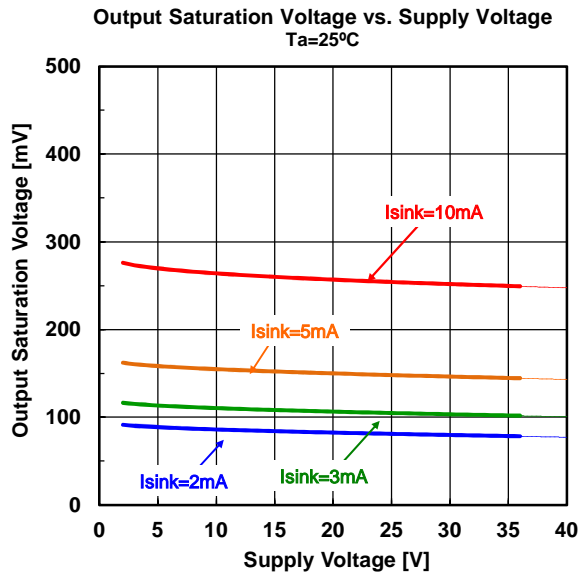
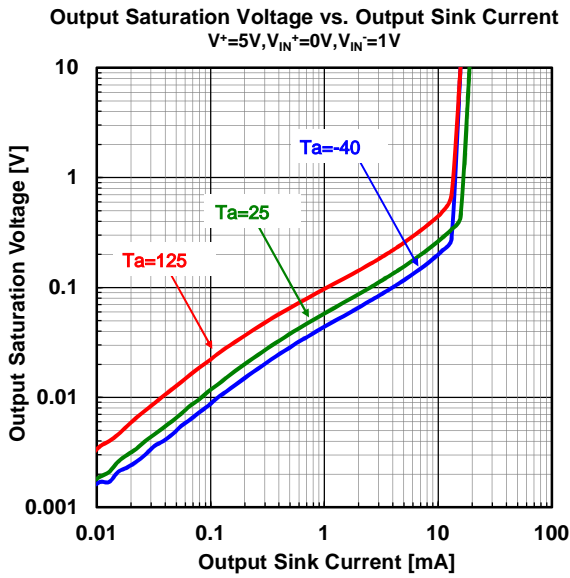
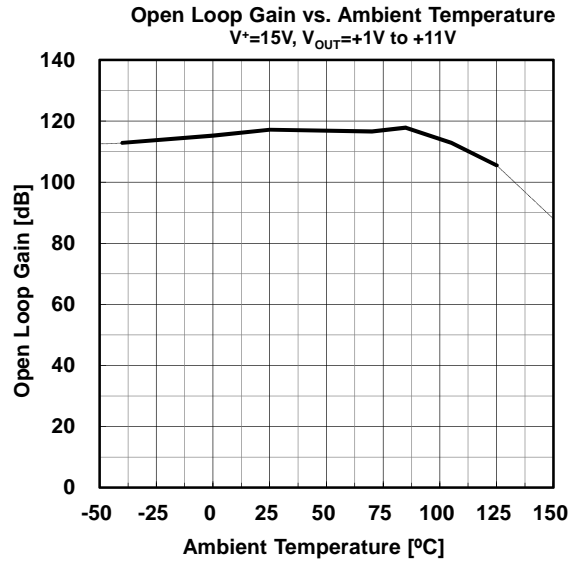
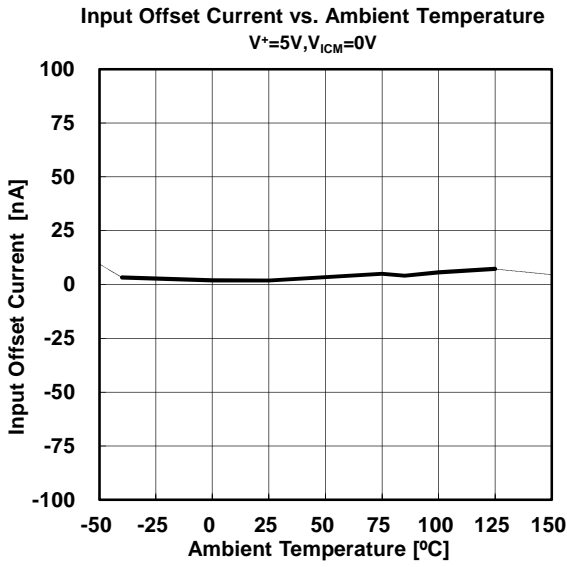
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	$R_S=0\Omega, V_O=1.4V$	-	-	5	mV
		$R_S=0\Omega, V_O=1.4V, T_a=-40^\circ C$ to $+125^\circ C$	-	-	5	
Input Offset Current	I_{IO}		-	-	50	nA
		$T_a=-40^\circ C$ to $+125^\circ C$	-	-	50	
Input Bias Current	I_B		-	30	250	nA
		$T_a=-40^\circ C$ to $+125^\circ C$	-	-	275	
Common Mode Input Voltage Range	V_{ICM}		0	-	3.5	V
		$T_a=-40^\circ C$ to $+125^\circ C$	0.5	-	3.0	
Open-Loop Voltage Gain	A_V	$R_L=15k\Omega$	-	106	-	dB
Response Time	t_R	$R_L=5.1k\Omega$	-	1.5	-	μs
Output Sink Current	I_{SINK}	$V_{IN}^- = 1V, V_{IN}^+ = 0V, V_O = 1.5V$	6	-	-	mA
		$V_{IN}^- = 1V, V_{IN}^+ = 0V, V_O = 1.5V, T_a = -40^\circ C$ to $+125^\circ C$	3	-	-	
Low-level Output Voltage	V_{OL}	$V_{IN}^- = 1V, V_{IN}^+ = 0V, I_{SINK} = 3mA$	-	200	400	mV
		$V_{IN}^- = 1V, V_{IN}^+ = 0V, I_{SINK} = 3mA, T_a = -40^\circ C$ to $+125^\circ C$	-	-	600	
Output Leakage Current	I_{LEAK}	$V_{IN}^- = 0V, V_{IN}^+ = 1V, V_O = 5V$	-	-	1.0	μA
		$V_{IN}^- = 0V, V_{IN}^+ = 1V, V_O = 5V, T_a = -40^\circ C$ to $+125^\circ C$	-	-	5.0	
Supply Current (all comparators)	I_{SUPPLY}		-	0.4	1.0	mA
		$T_a = -40^\circ C$ to $+125^\circ C$	-	-	2.0	

■ TYPICAL CHARACTERISTICS

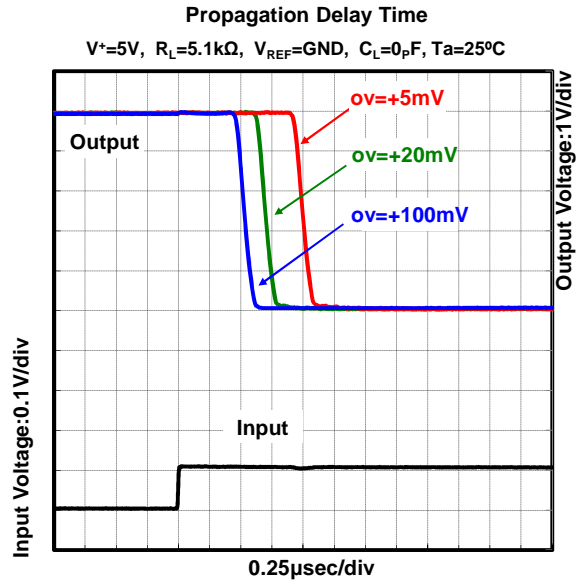
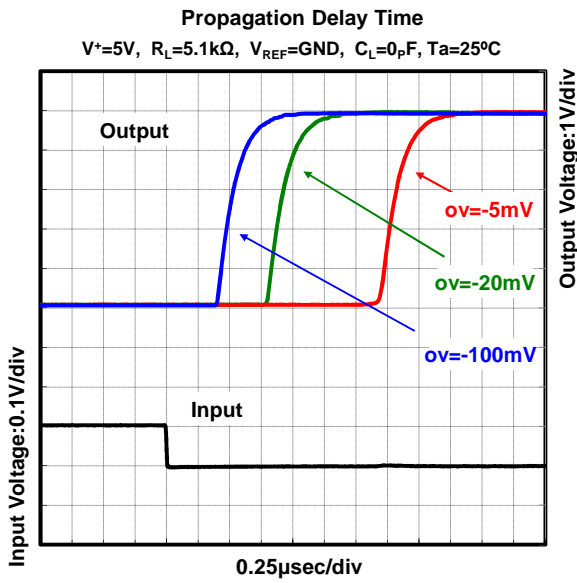


Automotive NJM2903

■ TYPICAL CHARACTERISTICS

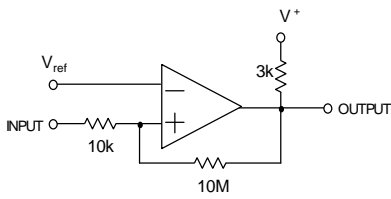


■ TYPICAL CHARACTERISTICS

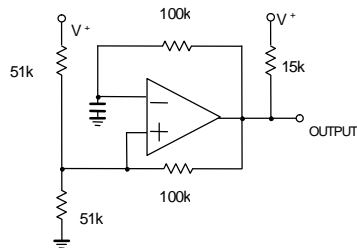


■ TYPICAL APPLICATIONS

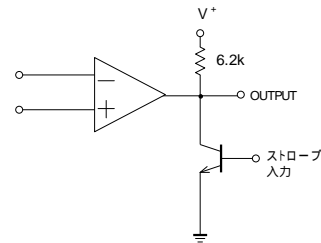
Comparator With Hysteresis



Pulse Generator



Output Strobing Circuit



[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.