

LOW POWER SUPER SMALL-SIZED SINGLE C-MOS COMPARATOR

■GENERAL DESCRIPTION

The **NJU7119** is super small-sized package single C-MOS comparator with open drain output.

The operating voltage is from 1.8V to 5.5V. The output can drive TTL, C-MOS and various voltage levels.

The input offset voltage is lower than 7mV and the package is super small-sized SC88A. The **NJU7119** is suitable for battery use items and other portable items.

■PACKAGE INFORMATION



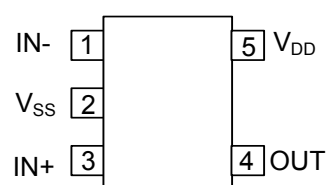
NJU7119F3

■FEATURES

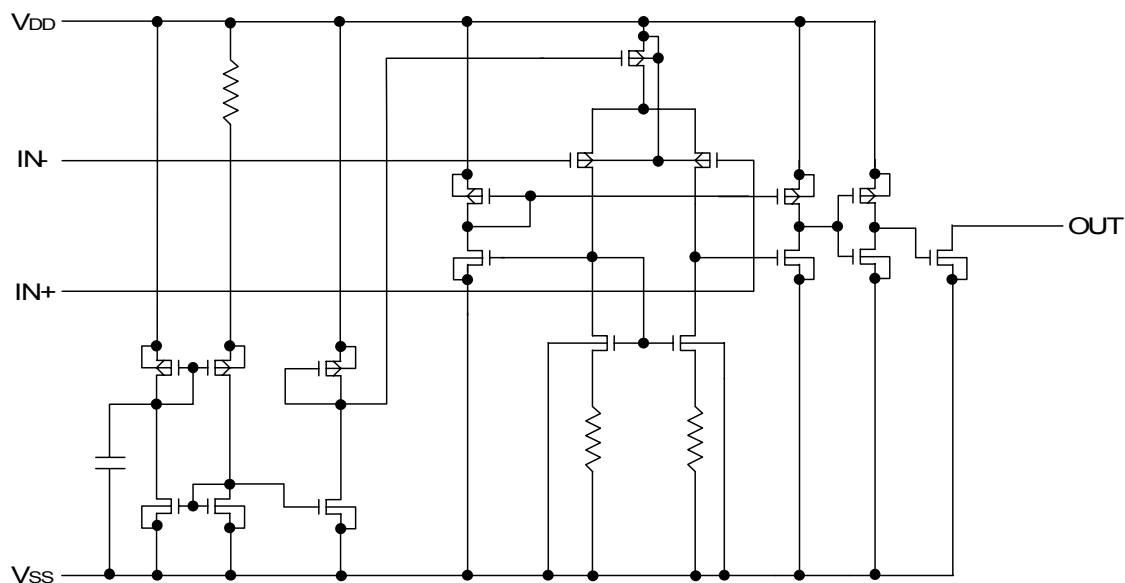
- Single Low Power Supply $V_{DD}=1.8\sim5.5V$
- Low Offset Voltage $V_{IO}=7mV$ (max.)
- Low Operating Current $I_{DD}=100\mu A$ (typ.)
- Propagation Delay(t_{PLH}/t_{PHL}) 160/70ns(typ.)
- Output Signal Falling Time(t_{THL}) 4ns(typ.)
- Open Drain Output
- Package Outline SC88A
- C-MOS Technology

■PIN CONFIGURATION

(Top View)



■EQUIVALENT CIRCUIT



■ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V_{DD}	7.0	V
Differential Input Voltage	V_{ID}	± 7.0 (Note1)	V
Common Mode Input Voltage	V_{IC}	-0.3~7.0	V
Power Dissipation	P_D	250 (Note3)	mW
Operating Temperature	T_{opr}	-40~+85	°C
Storage Temperature	T_{stg}	-55~+125	°C

Note1) If the supply voltage (V_{DD}) is less than 7.0V, the input voltage must not exceed the V_{DD} level though 7.0V is limit specified.

Note2) The output pull-up voltage must not over the V_{DD} level.

Note3) The power dissipation is value mounted on a glass epoxy board (FR-4) in size of 50x50x1.6 millimeters square.

Note4) Decoupling capacitor should be connected between V_{DD} and V_{SS} due to the stabilized operation for the circuit.

■RECOMMENDED OPERATING CONDITION

(Ta=25°C)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	V_{DD}		1.8	-	5.5	V

■ELECTRICAL CHARACTERISTICS

●DC CHARACTERISTICS

($V_{DD}=3.0V, R_L=\infty, Ta=25^\circ C$)

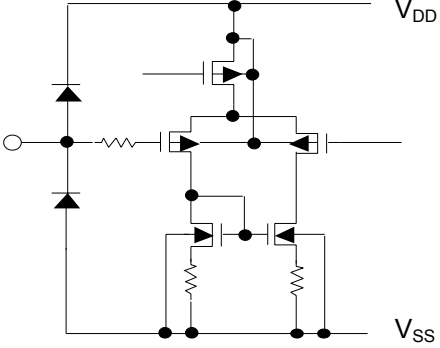
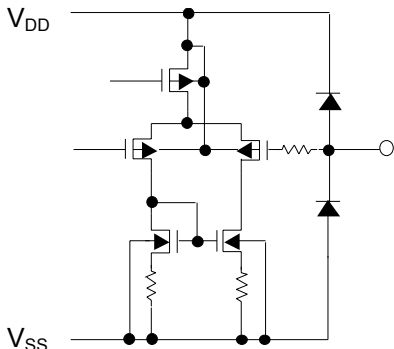
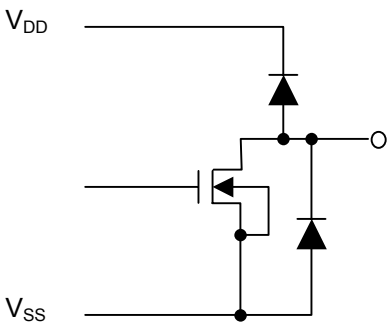
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	V_{IO}	$V_{IN}=V_{DD}/2$	-	-	7	mV
Input Offset Current	I_{IO}		-	1	-	pA
Input Bias Current	I_{IB}		-	1	-	pA
Input Common Mode Voltage Range	V_{ICM}		0~2.4	-	-	V
Low Level Output Voltage	V_{OL}	$I_{OL}=+5mA$	-	-	0.3	V
Operating Current	I_{DD}		-	100	200	μA

●TRANSIENT CHARACTERISTICS

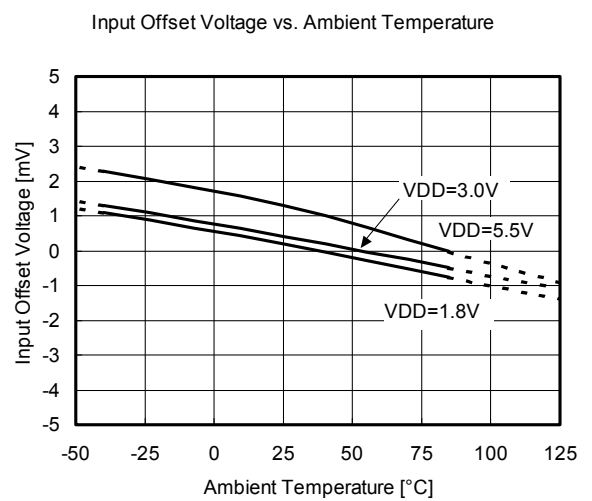
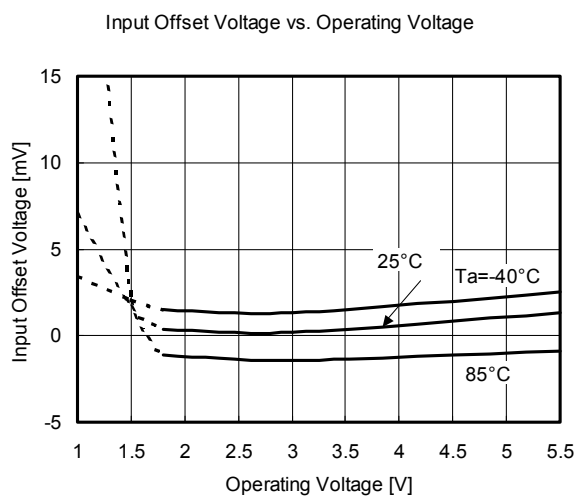
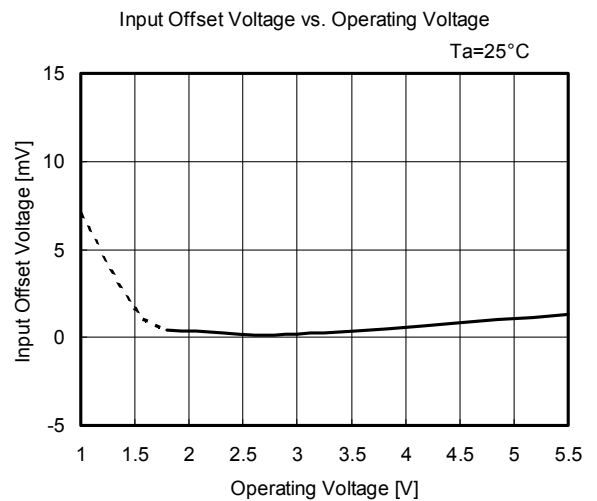
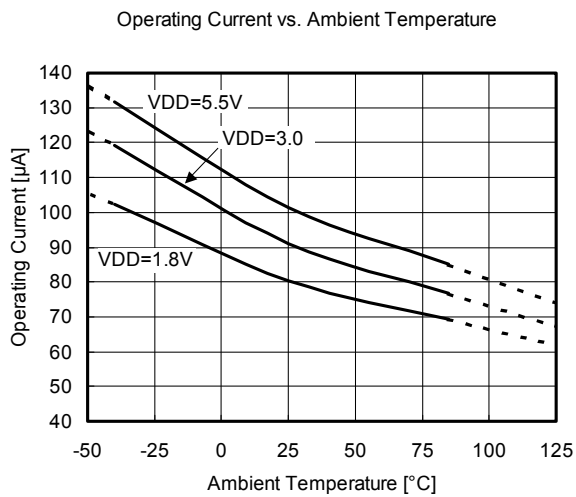
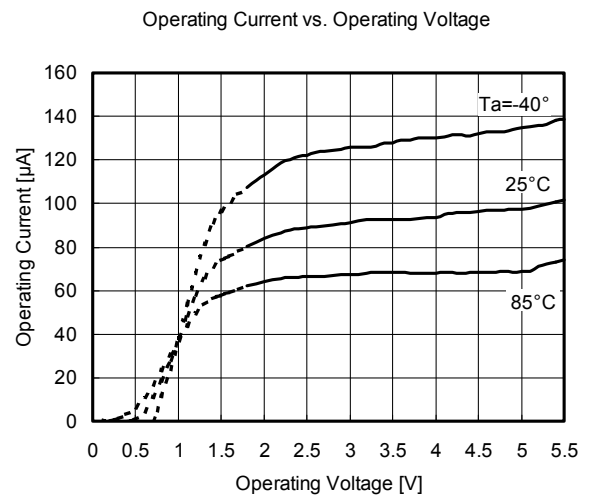
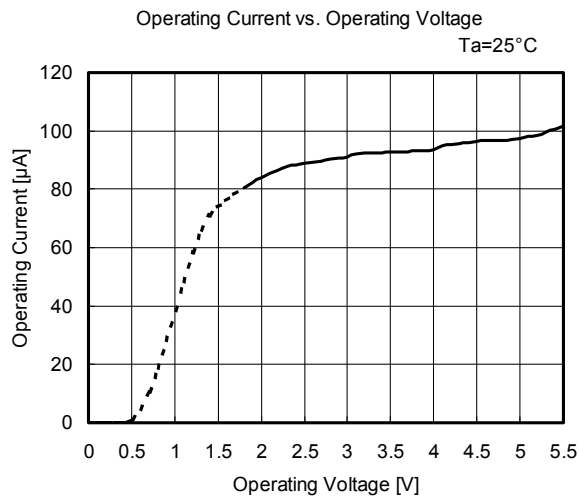
($V_{DD}=3.0V, f=10kHz, C_L=15pF, Ta=25^\circ C$)

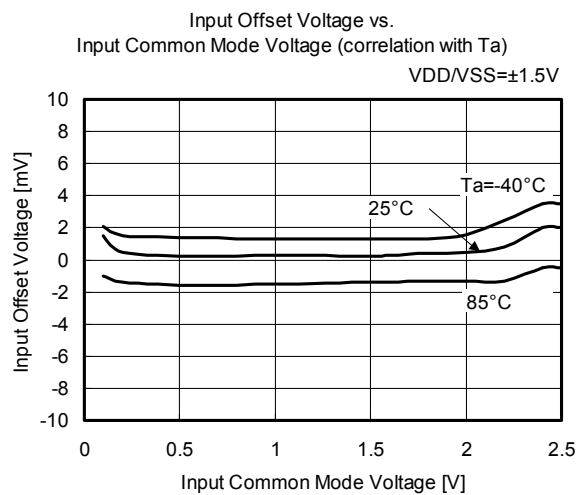
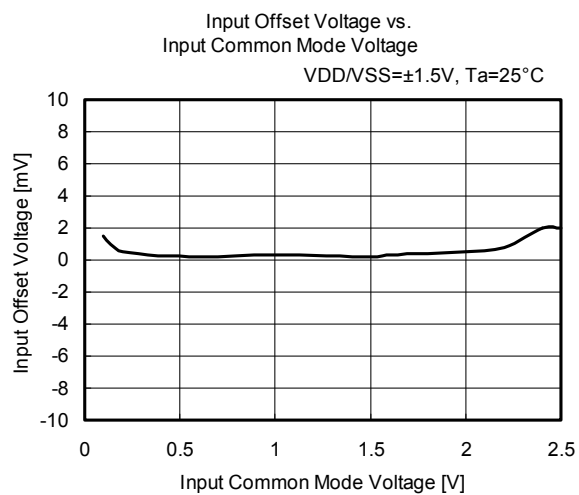
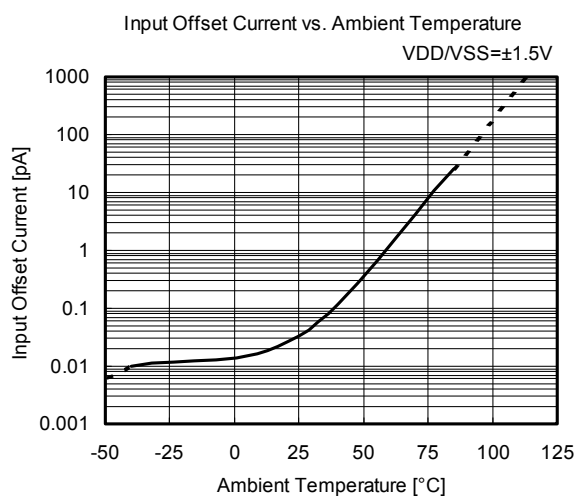
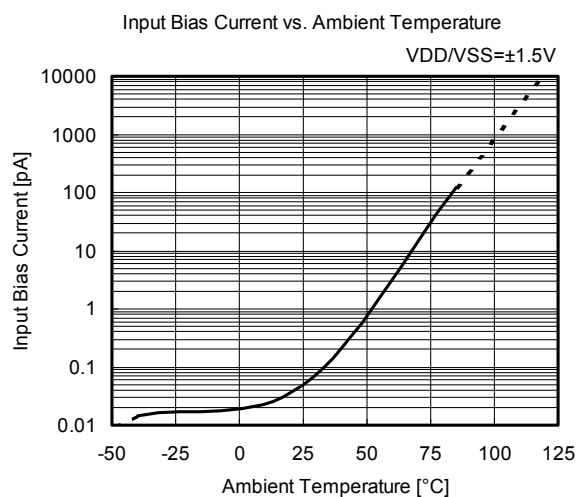
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay Low to High	t_{PLH}	Over Drive=100mV	-	160	-	ns
Propagation Delay High to Low	t_{PHL}	Over Drive=100mV	-	70	-	ns
Output Signal Falling Time	t_{THL}	Over Drive=100mV	-	4	-	ns

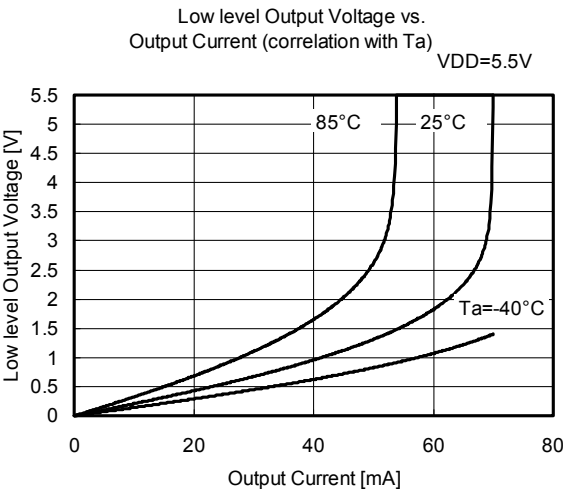
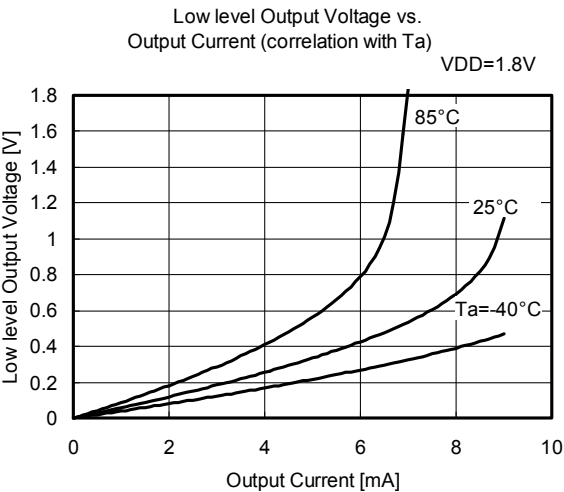
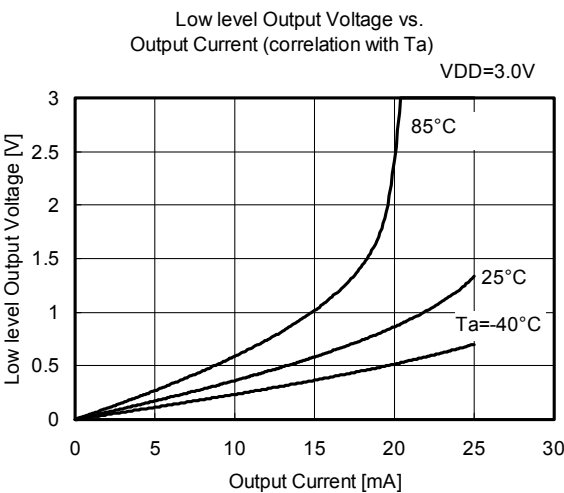
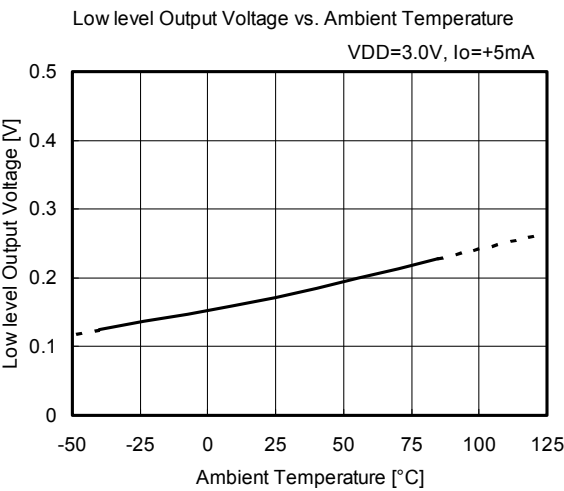
■ TERMINAL EQUIVALENT CIRCUIT

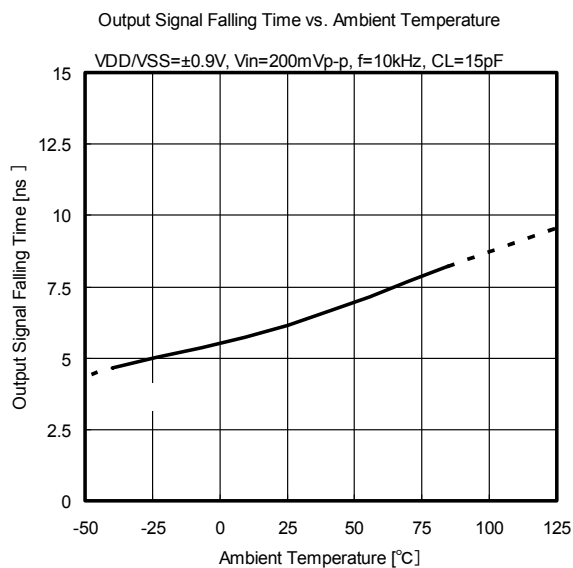
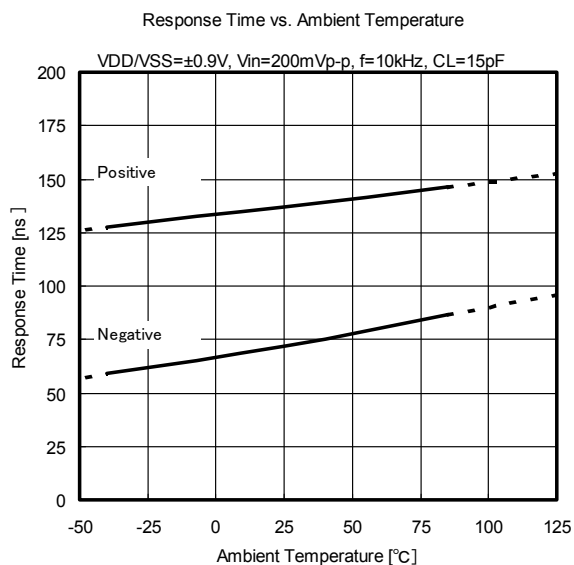
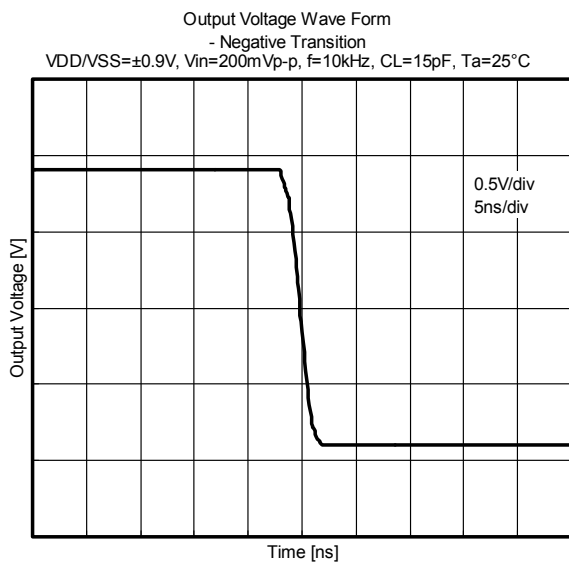
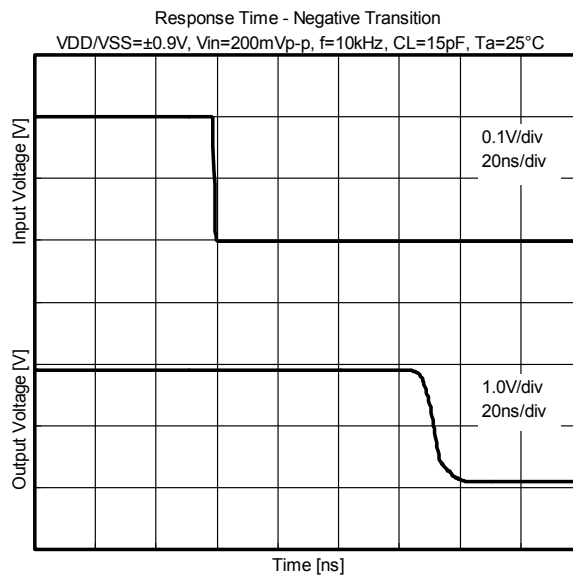
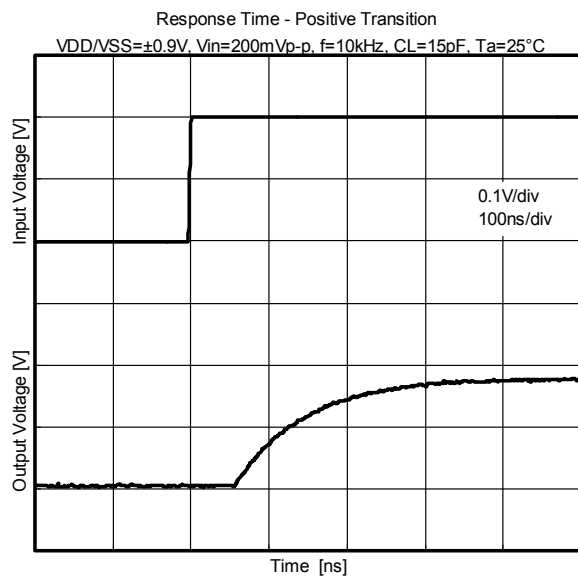
No.	Symbol	Equivalent Circuit	Typ. DC Voltage(V)	Function
1	IN-		-	inverting input
3	IN+		-	non-inverting input
4	OUT		-	output

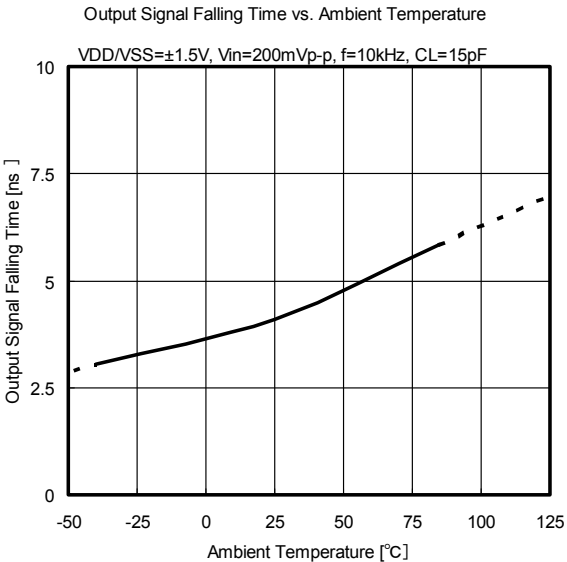
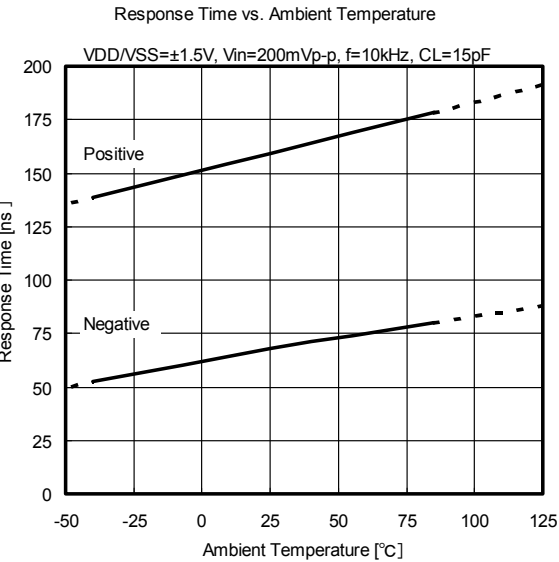
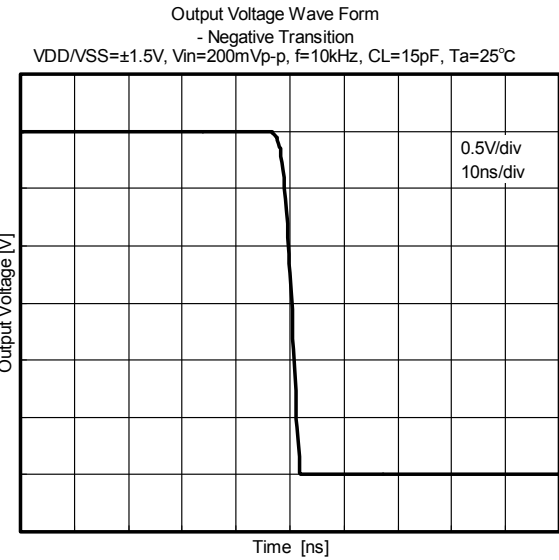
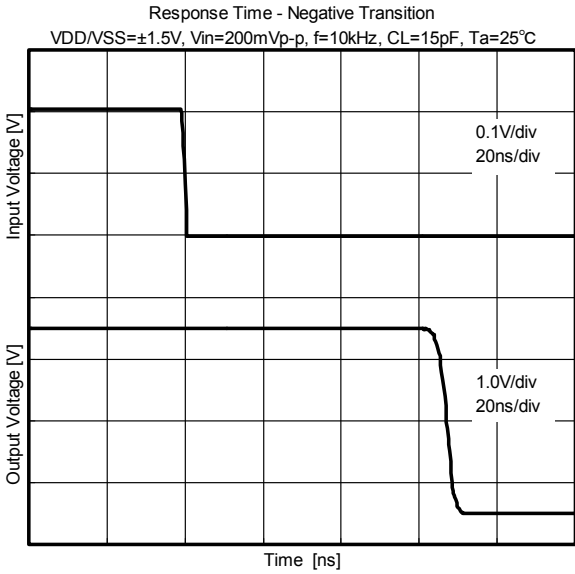
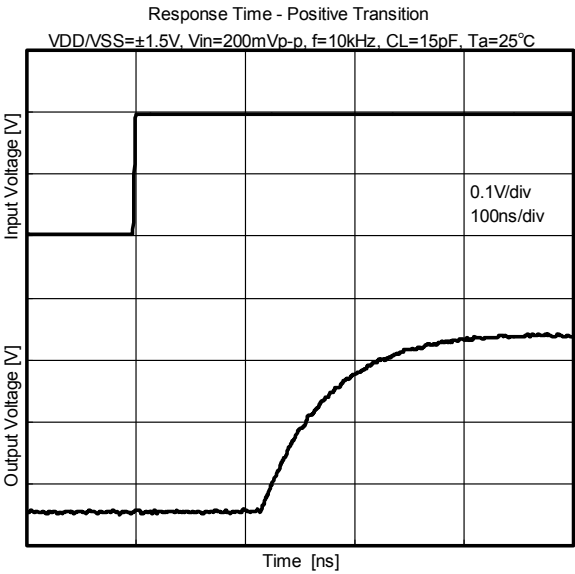
■TYPICAL CHARACTERISTICS

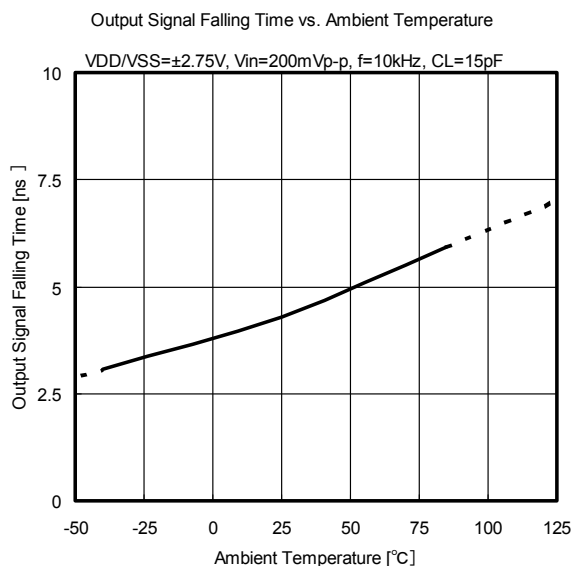
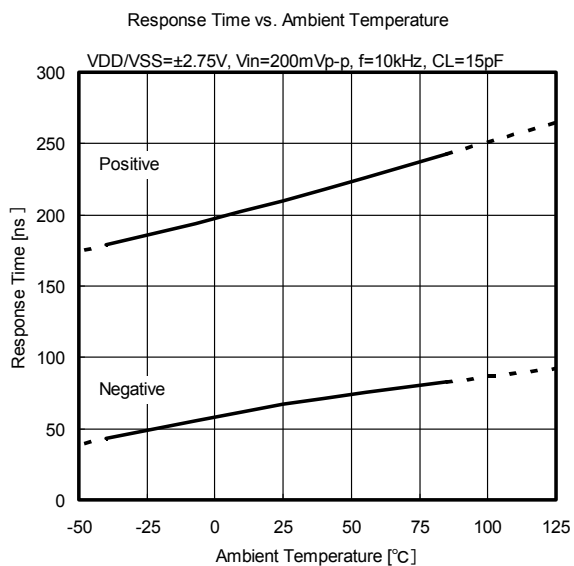
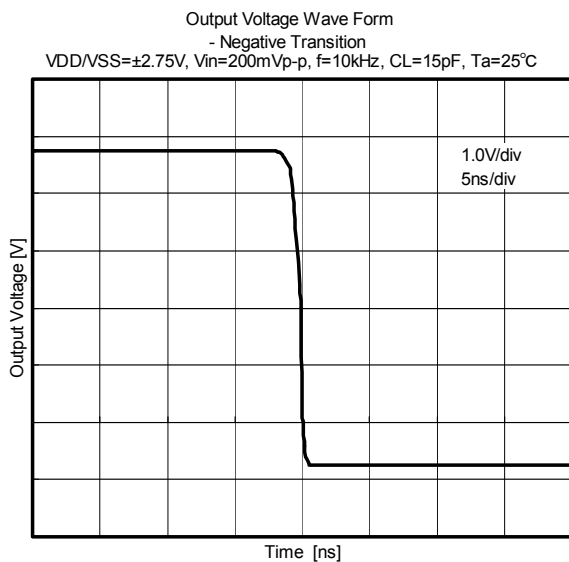
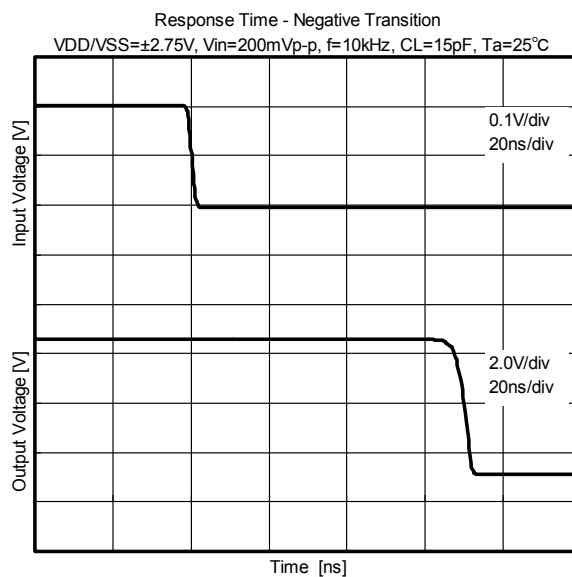
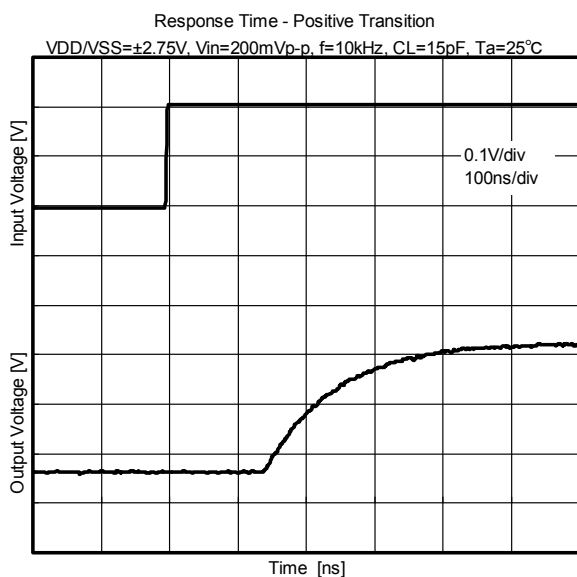




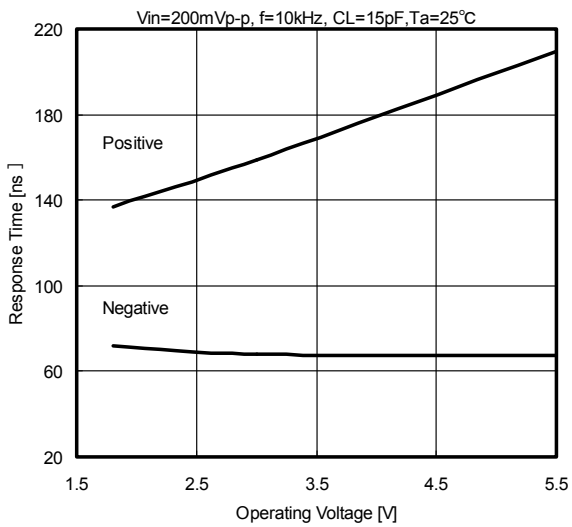




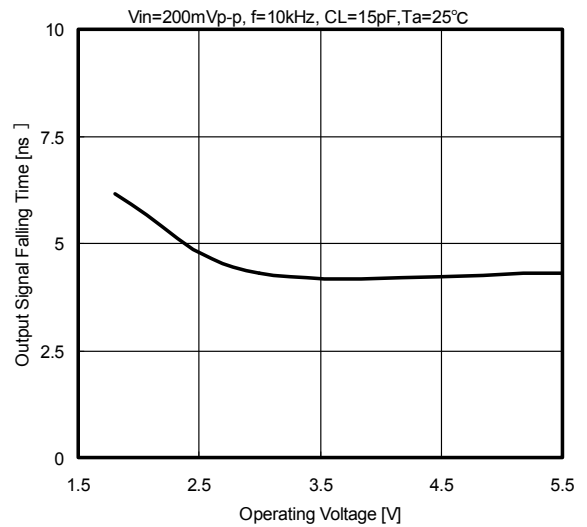




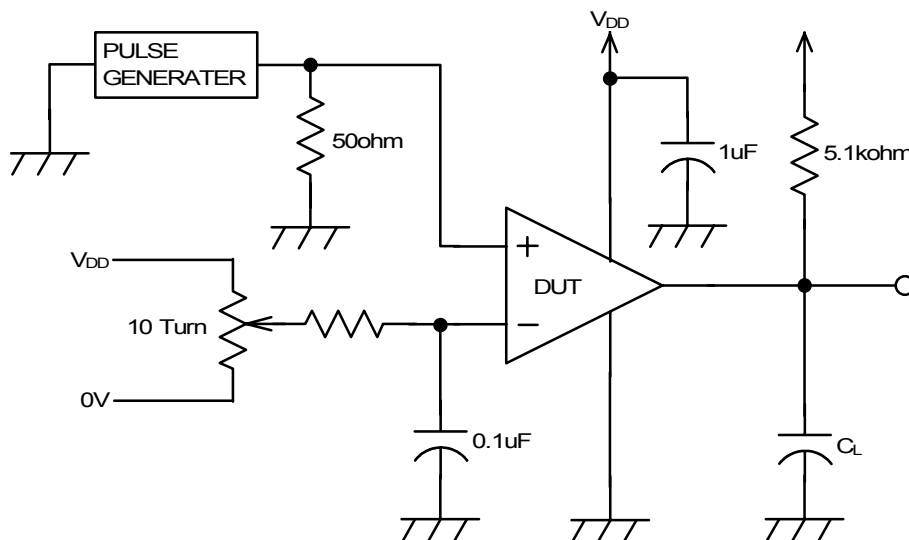
Response Time vs. Operating Voltage



Output Signal Falling Time vs. Operating Voltage



■SWITCHING CHARACTERISTICS MEASUREMENT CIRCUIT



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