

VOLTAGE DETECTOR

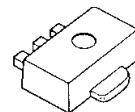
■ GENERAL DESCRIPTION

The NJU7719 is a low quiescent current voltage detector featuring high precision detection voltage.

The detection voltage is internally fixed with an accuracy of 1.0%.

NJU7719 is Nch. Open Drain output type.

■ PACKAGE OUTLINE

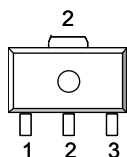


NJU7719U1

■ FEATURES

- High Precision detection Voltage $\pm 1.0\%$
- Low Quiescent Current $0.8\mu\text{A typ.}$
- Detection Voltage Range $1.3 \sim 6.0\text{V}(0.1\text{V step})$
- Output Configuration Nch. Open Drain Type
- Package Outline SOT-89-3

■ PIN CONFIGURATION

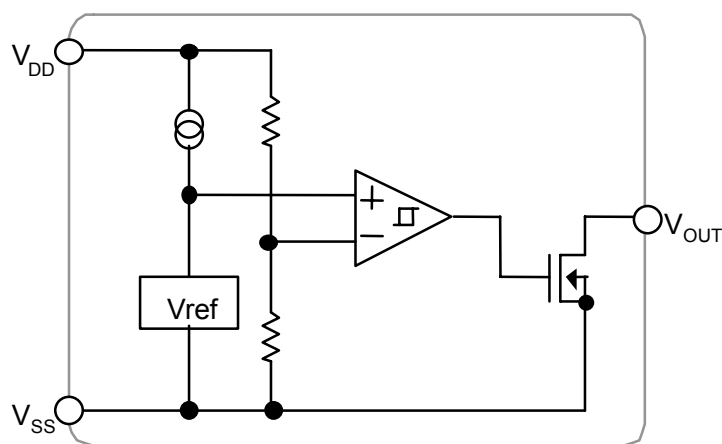


NJU7719U1

PIN FUNCTION

1. V_{DD}
2. V_{SS}
3. V_{OUT}

■ EQUIVALENT CIRCUIT



■ DETECTION VOLTAGE RANK LIST

Device Name	V_{DET}	Device Name	V_{DET}
NJU7719U1-21	2.1V	NJU7719U1-34	3.4V
NJU7719U1-23	2.3V	NJU7719U1-39	3.9V
NJU7719U1-27	2.7V	NJU7719U1-42	4.2V
NJU7719U1-29	2.9V	NJU7719U1-45	4.5V
NJU7719U1-32	3.2V		

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V _{DD}	+10	V
Output Voltage	V _{OUT}	V _{SS} -0.3 ~ +10	V
Output Current	I _{OUT}	50	mA
Power Dissipation	P _D	350(*1)	mW
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +125	°C

(*1): Device itself

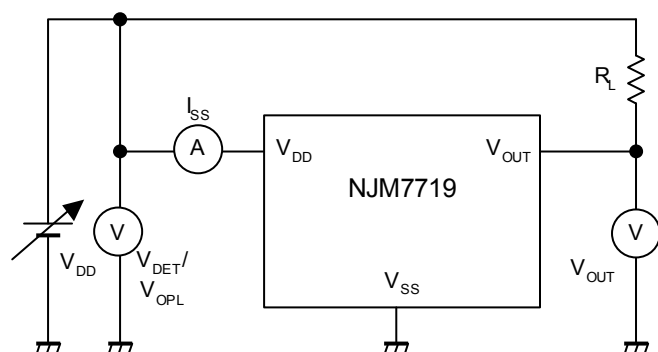
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Detection Voltage	V _{DET}			-1.0%	—	+1.0%	V
Hysteresis Voltage	V _{HYS}			V _{DET} ×0.03	V _{DET} ×0.05	V _{DET} ×0.08	V
Quiescent Current	I _{SS}	V _{DD} =V _{DET} +1V	V _{DET} =1.3V~1.7V Version	—	0.5	1.0	μA
			V _{DET} =1.8V~6.0V Version	—	0.8	1.6	μA
Output Current	I _{OUT}	Nch, V _{DS} =0.5V	V _{DD} =1.2V	0.75	2.0	—	mA
			V _{DD} =2.4V (≥2.7V Version)	4.5	7.0	—	mA
Output Leak Current	I _{LEAK}	V _{DD} =V _{OUT} =9V		—	—	0.1	μA
Detection Voltage Temperature Coefficient	ΔV _{DET} /ΔTa	Ta=0 ~ +85°C		—	±100	—	ppm/°C
Operating Voltage (*2)	V _{DD}	R _L =100kΩ		0.8	—	9	V

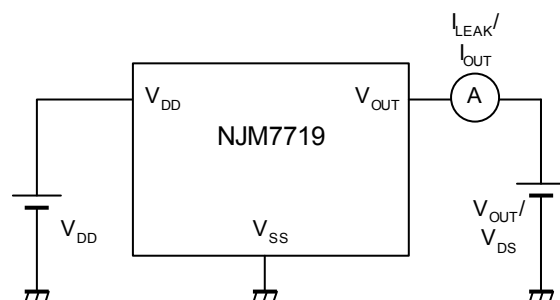
(*2): The minimum Operating Voltage(V_{OPL}) indicates the same value of the input voltage(V_{DD}) on condition that V_{OUT} becomes 10% or less of the input voltage(V_{DD}).

■ TEST CIRCUIT

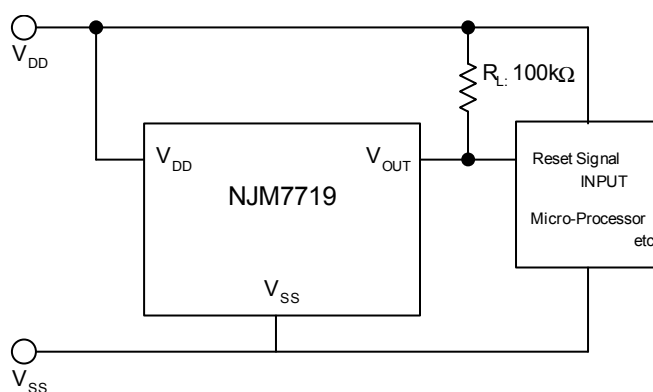
① COMMON TEST CIRCUIT



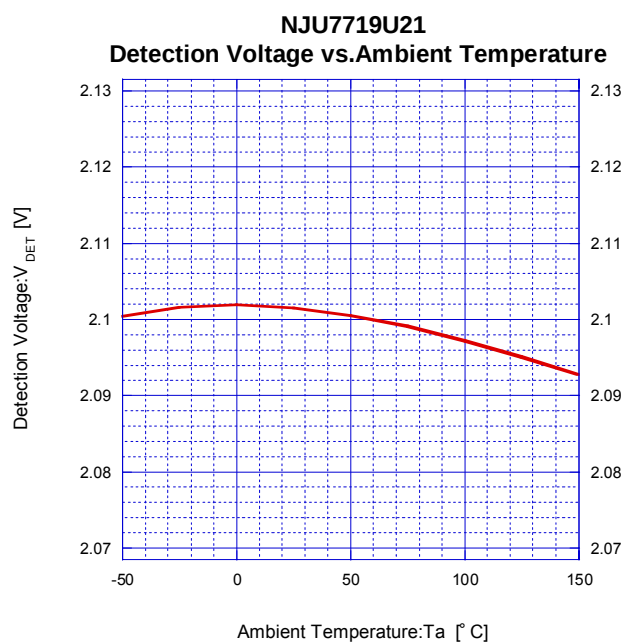
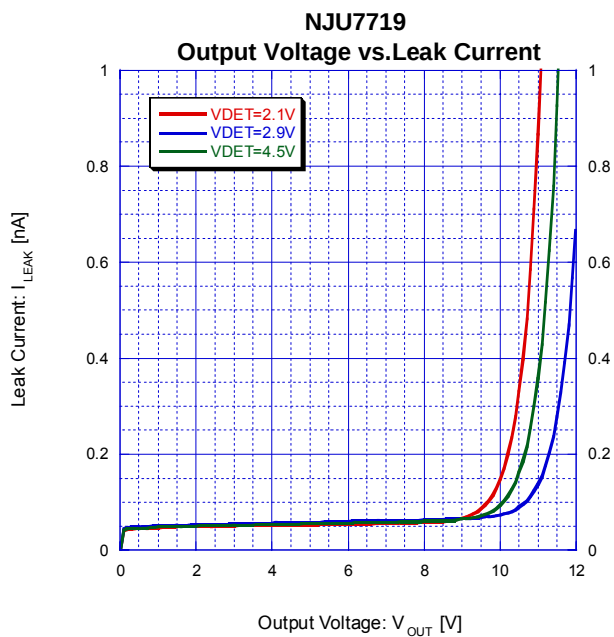
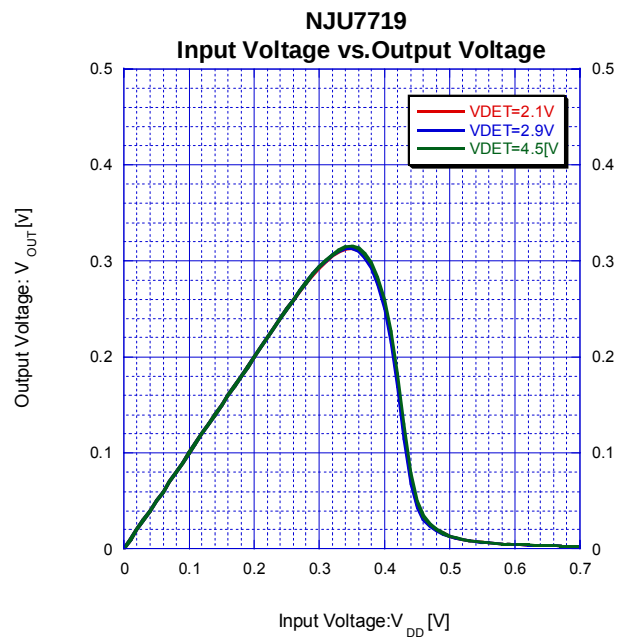
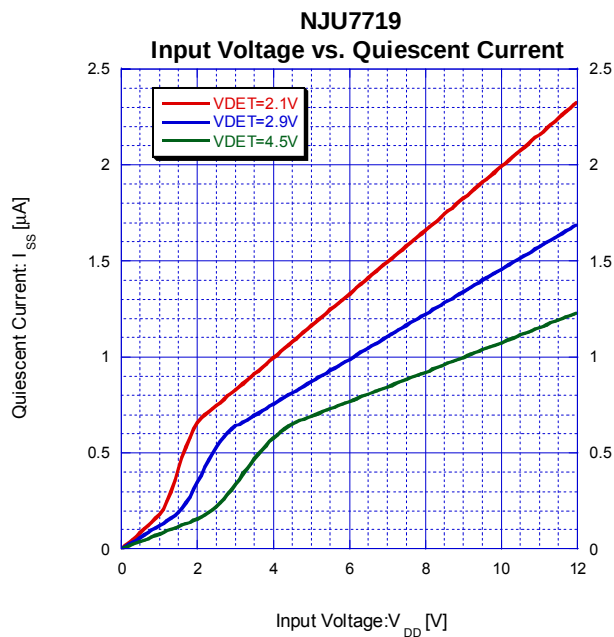
② Output Current/Output Leak Current TEST CIRCUIT



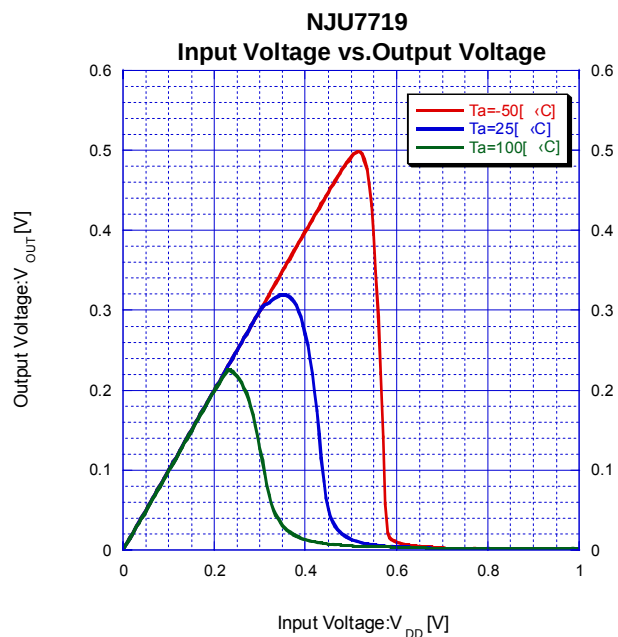
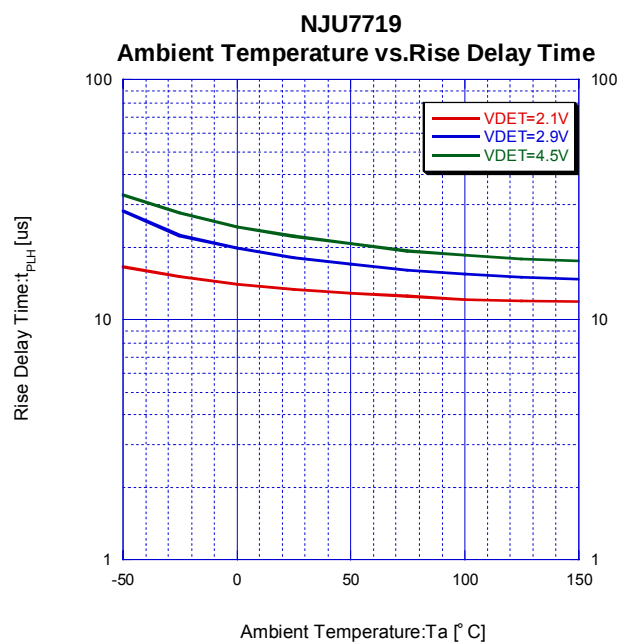
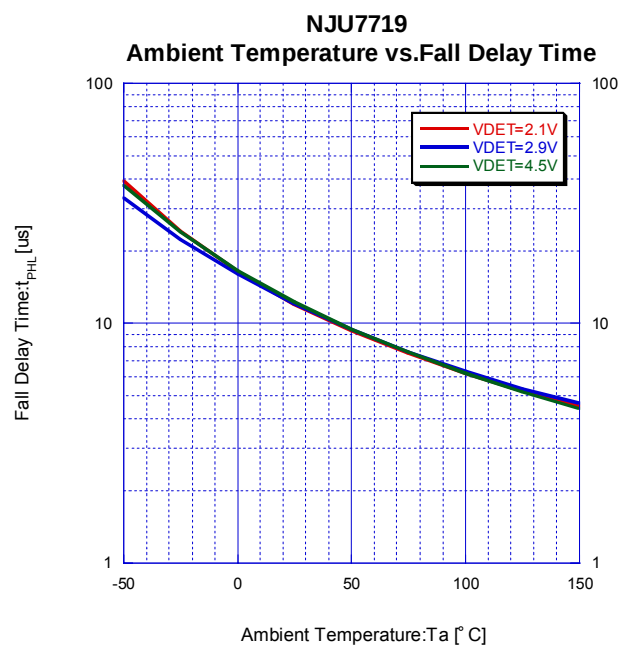
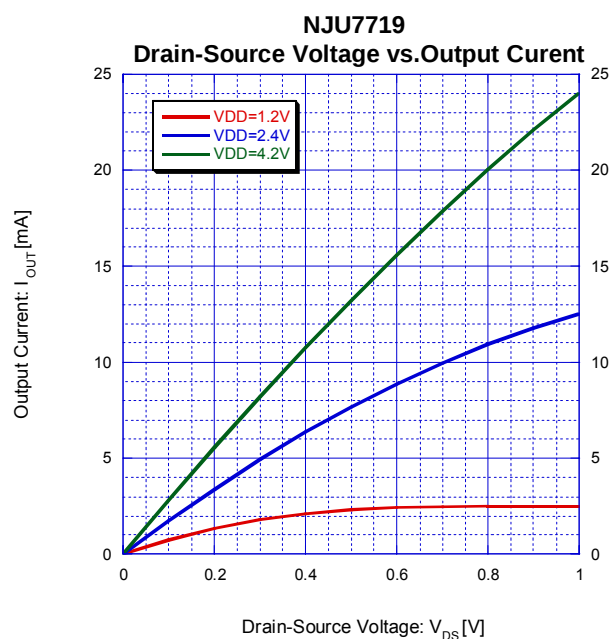
■ TYPICAL APPLICATION



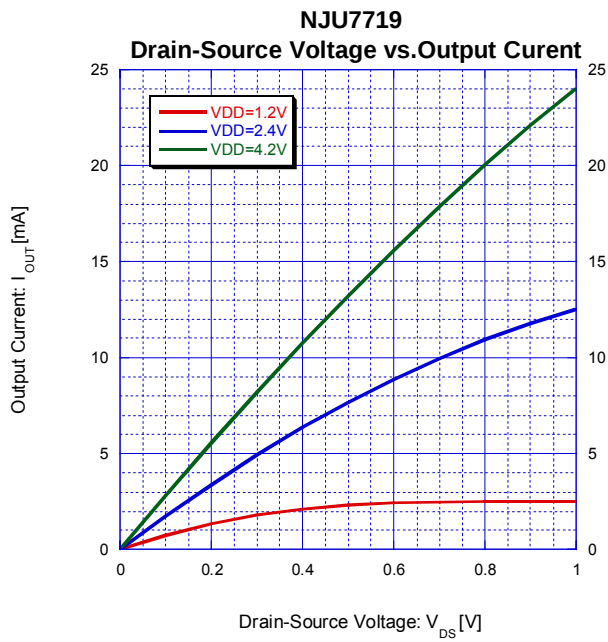
■ TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



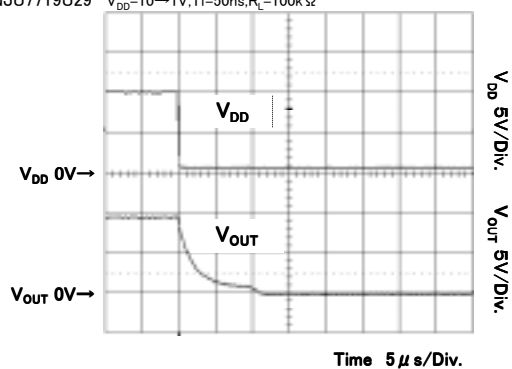
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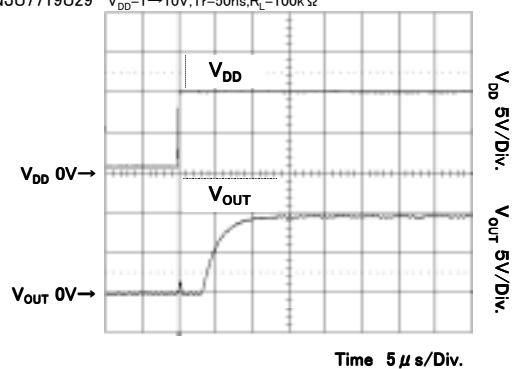
Transient Response

NJU7719U29 $V_{DD}=10 \rightarrow 1V, T_f=50ns, R_L=100k\Omega$



Transient Response

NJU7719U29 $V_{DD}=1 \rightarrow 10V, T_r=50ns, R_L=100k\Omega$



[CAUTION]

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