

LOW DROPOUT VOLTAGE REGULATOR

■ GENERAL DESCRIPTION

The NJM2867/68 is a 100mA output low dropout voltage regulator with ON/OFF control.

Advanced Bipolar technology achieves low noise, high ripple rejection and low quiescent current.

Small packaging, 0.1 μ F small decoupling capacitor, built-in noise bypass capacitor make the NJM2867/68 suitable for space conscious applications.

■ PACKAGE OUTLINE



NJM2867F3

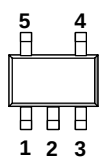


NJM2867F/NJM2868F

■ FEATURES

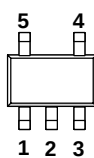
- High Ripple Rejection 75dB typ. (f=1kHz Vo=3V Version)
- Output Noise Voltage Vno=40 μ Vrms typ.
- Output capacitor with 0.1 μ F ceramic capacitor (Vo $\geq$ 2.8V)
- Output Current Io(max.)=100mA
- High Precision Output Vo $\pm$ 1.0%
- Low Dropout Voltage 0.10V typ. (Io=60mA)
- ON/OFF Control (Active High)
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Bipolar Technology
- Package Outline SC88A (NJM2867F3), SOT-23-5 (NJM2867F/NJM2868F)

■ PIN CONFIGURATION



NJM2867F/NJM2867F3

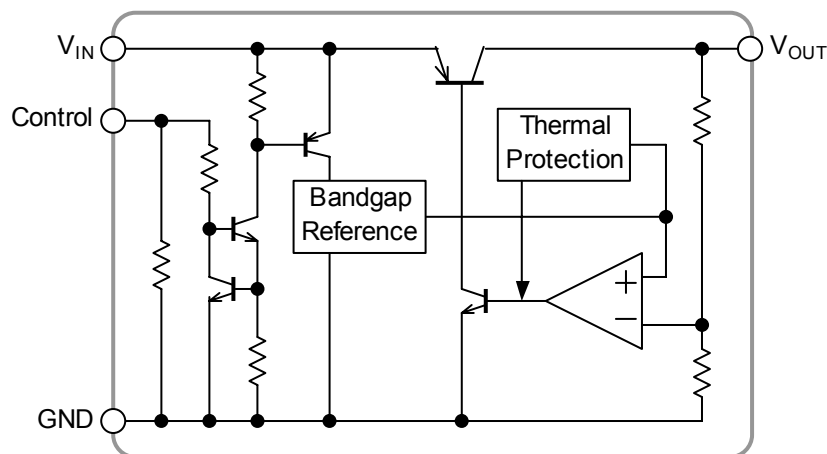
- PIN FUNCTION**
- 1.CONTROL
 - 2.GND
 - 3.NC
 - 4.V_{OUT}
 - 5.V_{IN}



NJM2868F

- PIN FUNCTION**
1. V_{IN}
 - 2.GND
 - 3.CONTROL
 - 4.NC
 - 5.V_{OUT}

■ EQUIVALENT CIRCUIT



NJM2867/68

■ OUTPUT VOLTAGE RANK LIST

●NJM2867

Device Name	V _{OUT}	Device Name	V _{OUT}	Device Name	V _{OUT}
NJM2867F3-/F21	2.1V	NJM2867F3-/F29	2.9V	NJM2867F3-/F38	3.8V
NJM2867F3-/F24	2.4V	NJM2867F3-/F03	3.0V	NJM2867F3-/F04	4.0V
NJM2867F3-/F25	2.5V	NJM2867F3-/F31	3.1V	NJM2867F3-/F445	4.45V
NJM2867F3-/F26	2.6V	NJM2867F3-/F32	3.2V	NJM2867F3-/F05	5.0V
NJM2867F3-/F27	2.7V	NJM2867F3-/F33	3.3V		
NJM2867F3-/F28	2.8V	NJM2867F3-/F34	3.4V		

●NJM2868

Device Name	V _{OUT}	Device Name	V _{OUT}	Device Name	V _{OUT}
NJM2868F21	2.1V	NJM2868F29	2.9V	NJM2868F38	3.8V
NJM2868F24	2.4V	NJM2868F03	3.0V	NJM2868F04	4.0V
NJM2868F25	2.5V	NJM2868F31	3.1V	NJM2868F445	4.45V
NJM2868F26	2.6V	NJM2868F32	3.2V	NJM2868F05	5.0V
NJM2868F27	2.7V	NJM2868F33	3.3V		
NJM2868F28	2.8V	NJM2868F34	3.4V		

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS		UNIT
Input Voltage	V _{IN}	+14		V
Control Voltage	V _{CONT}	+14(*1)		V
Power Dissipation	P _D	SC88A	250(*2)	mW
		SOT-23-5	200(*3)	
			350(*2)	
Operating Temperature	T _{opr}	-40~+85		°C
Storage Temperature	T _{stg}	-40~+125		°C

(*1): When input voltage is less than +14V, the absolute maximum control voltage is equal to the input voltage.

(*2): Mounted on glass epoxy board based on EIA/JEDEC. (114.3x76.2x1.6mm: 2Layers)

(*3): Device itself.

■ ELECTRICAL CHARACTERISTICS

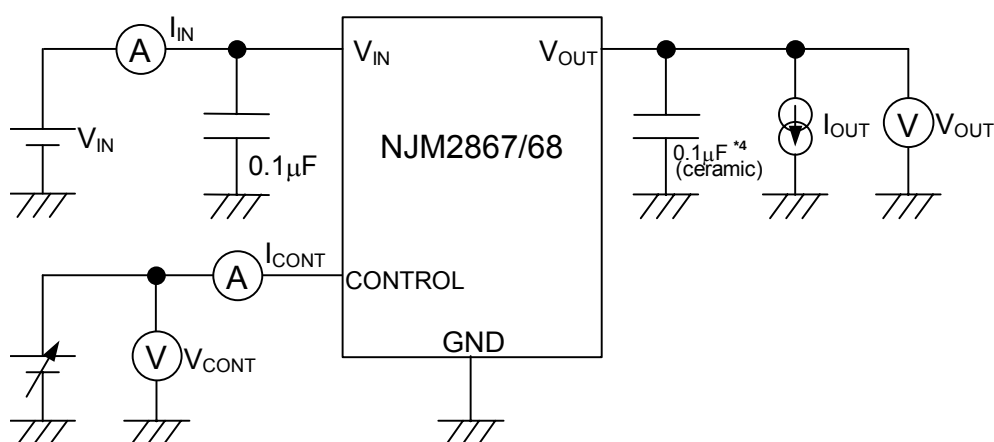
($V_{IN}=V_O+1V$, $C_{IN}=0.1\mu F$, $C_O=0.1\mu F$ ($2.3V<V_O\leq 2.8V$: $C_O=0.22\mu F$, $V_O\leq 2.3V$: $C_O=0.47\mu F$), $T_a=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_O	$I_O=30mA$	-1.0%	—	+1.0%	V
Quiescent Current	I_Q	$I_O=0mA$, expect I_{CONT}	—	120	180	μA
Quiescent Current at Control OFF	$I_{Q(OFF)}$	$V_{CONT}=0V$	—	—	100	nA
Output Current	I_O	$V_O=0.3V$	100	130	—	mA
Line Regulation	$\Delta V_O/\Delta V_{IN}$	$V_{IN}=V_O+1V \sim V_O+6V$, $I_O=30mA$	—	—	0.10	%/V
Load Regulation	$\Delta V_O/\Delta I_O$	$I_O=0 \sim 60mA$	—	—	0.03	%/mA
Dropout Voltage	ΔV_{L-O}	$I_O=60mA$	—	0.10	0.18	V
Ripple Rejection	RR	$e_{in}=200mV_{rms}$, $f=1kHz$, $I_O=10mA$, $V_O=3V$ Version	—	75	—	dB
Average Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T_a$	$T_a=0 \sim 85^\circ C$, $I_O=10mA$	—	± 50	—	ppm/ $^\circ C$
Output Noise Voltage	V_{NO}	$f=10Hz \sim 80kHz$, $I_O=10mA$, $V_O=3V$ Version	—	40	—	μV_{rms}
Control Current	I_{CONT}	$V_{CONT}=1.6V$, $I_O=0mA$	—	—	12	μA
Control Voltage for ON-state	$V_{CONT(ON)}$		1.6	—	—	V
Control Voltage for OFF-state	$V_{CONT(OFF)}$		—	—	0.6	V

The above specification is a common specification for all output voltages.

Therefore, it may be different from the individual specification for a specific output voltage.

■ TEST CIRCUIT



*4 2.3V< $V_O\leq 2.8V$ version: $C_O=0.22\mu F$ (ceramic)
 $V_O\leq 2.3V$ version: $0.47\mu F$ (ceramic)