LOW DROPOUT VOLTAGE REGULATOR

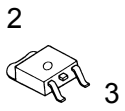
■ GENERAL DESCRIPTION

The NJM2391 is a low dropout voltage regulators featuring high precision voltage.

It is suitable for Notebook PCs, PC cards and hard disks where 3.3V need to be generated from 5V supply.

A small TO-252 package is adopted for the space saving.

■ PACKAGE OUTLINE



NJM2391DL1

1. IN
2. GND
3. OUT

■ FEATURES

- ●Output Current Io(max.)=1A
- ●High Precision Output Voltage Vo±1%
- ●Low Dropout Voltage ΔV_{I-O} =1.1V typ. At Io=1A
- ●Internal Short Circuit Current Limit
- ●Internal Thermal Overload Protection
- ●Bipolar Technology
- ●Package Outline TO-252

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V^+	+10	V
Power Dissipation	P_D	TO-252 8 (Tc=25°C) 0.8(Ta≤25°C)	W
Operating Temperature	Topr	–40 ~ +85	°C
Storage Temperature	Tstg	–50 ~ +125	°C

■ ELECTRICAL CHARACTERISTICS (C_{IN}=0.1μF, Co=10μF, Tj=25°C)

Measurement is to be conducted is pulse testing

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Vo=2.5V Version Output Voltage	V_O	V_{IN}=5.5V, Io=0.01A	2.475	2.5	2.525	V
Line Regulation	ΔVo-V_{IN}	V_{IN}=4V~9V, Io=1A	–	–	50	mV
Load Regulation	ΔVo-Io	V_{IN}=5. 5V, Io=0~1A	–	–	50	mV
Quiescent Current	I_Q	V_{IN}=5.5V, Io=0A	–	2.3	4.0	mA
Ripple Rejection	RR	V_{IN}=5.5V, ein=2V_{P-P} f=120Hz, Io=0.5A	53	63	–	dB
Dropout Voltage	ΔV_{I-O}	Io=1A	–	1.1	1.2	V
Output Noise Voltage	V_{NO}	V_{IN}=5.5V, Io=0.5A BW=10Hz~100kHz	–	85	185	μV
Vo=2.6V Version Output Voltage	V_O	V_{IN}=5.6V, Io=0.01A	2.574	2.60	2.626	V
Line Regulation	ΔVo-V_{IN}	V_{IN}=4.1V~9.1V, Io=1A	–	–	52	mV
Load Regulation	ΔVo-Io	V_{IN}=5.6V, Io=0~1A	–	–	52	mV
Quiescent Current	I_Q	V_{IN}=5.6V, Io=0A	–	2.3	4.0	mA
Ripple Rejection	RR	V_{IN}=5.6V, ein=2V_{P-P} f=120Hz, Io=0.5A	53	63	–	dB
Dropout Voltage	ΔV_{I-O}	Io=1A	–	1.1	1.2	V
Output Noise Voltage	V_{NO}	V_{IN}=5.6V, Io=0.5A BW=10Hz~100kHz	–	87	187	μV
Vo=2.85V Version Output Voltage	V_O	V_{IN}=5.85V, Io=0.01A	2.82	2.85	2.88	V
Line Regulation	ΔVo-V_{IN}	V_{IN}=4.35V~9.35V, Io=1A	–	–	57	mV
Load Regulation	ΔVo-Io	V_{IN}=5.85V, Io=0~1A	–	–	57	mV
Quiescent Current	I_Q	V_{IN}=5.85V, Io=0A	–	2.3	4.0	mA
Ripple Rejection	RR	V_{IN}=5.85V, ein=2V_{P-P} f=120Hz, Io=0.5A	53	63	–	dB
Dropout Voltage	ΔV_{I-O}	Io=1A	–	1.1	1.2	V
Output Noise Voltage	V_{NO}	V_{IN}=5.85V, Io=0.5A BW=10Hz~100kHz	–	90	190	μV
Vo=3V Version Output Voltage	V_O	V_{IN}=6V, Io=0.01A	2.97	3.00	3.03	V
Line Regulation	ΔVo-V_{IN}	V_{IN}=4.5V~9.5V, Io=1A	–	–	60	mV
Load Regulation	ΔVo-Io	V_{IN}=6V, Io=0~1A	–	–	60	mV
Quiescent Current	I_Q	V_{IN}=6V, Io=0A	–	2.3	4.0	mA
Ripple Rejection	RR	V_{IN}=6V, ein=2V_{P-P} f=120Hz, Io=0.5A	52	62	–	dB
Dropout Voltage	ΔV_{I-O}	Io=1A	–	1.1	1.2	V
Output Noise Voltage	V_{NO}	V_{IN}=6V, Io=0.5A BW=10Hz~100kHz	–	95	195	μV

■ ELECTRICAL CHARACTERISTICS (C_{IN}=0.1μF, Co=10μF, Tj=25°C)

Measurement is to be conducted is pulse testing

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Vo=3.3V Version Output Voltage	V_O	V_{IN}=6.3V, Io=0.01A	3.267	3.30	3.333	V
Line Regulation	ΔVo-V_{IN}	V_{IN}=4.8V~9.8V, Io=1A	–	–	66	mV
Load Regulation	ΔVo-Io	V_{IN}=6.3V, Io=0~1A	–	–	66	mV
Quiescent Current	I_Q	V_{IN}=6.3V, Io=0A	–	2.3	4.0	mA
Ripple Rejection	RR	V_{IN}=6.3V, ein=2V_{P-P} f=120Hz, Io=0.5A	52	62	–	dB
Dropout Voltage	ΔV_{I-O}	Io=1A	–	1.1	1.2	V
Output Noise Voltage	V_{NO}	V_{IN}=6.3V, Io=0.5A BW=10Hz~100kHz	–	100	200	μV
Vo=3.5V Version Output Voltage	V_O	V_{IN}=6.5V, Io=0.01A	3.465	3.50	3.535	V
Line Regulation	ΔVo-V_{IN}	V_{IN}=5V~10V, Io=1A	–	–	70	mV
Load Regulation	ΔVo-Io	V_{IN}=6.5V, Io=0~1A	–	–	70	mV
Quiescent Current	I_Q	V_{IN}=6.5V, Io=0A	–	2.3	4.0	mA
Ripple Rejection	RR	V_{IN}=6.5V, ein=2V_{P-P} f=120Hz, Io=0.5A	52	62	–	dB
Dropout Voltage	ΔV_{I-O}	Io=1A	–	1.1	1.2	V
Output Noise Voltage	V_{NO}	V_{IN}=6.5V, Io=0.5A BW=10Hz~100kHz	–	105	205	μV
Vo=5V Version Output Voltage	V_O	V_{IN}=8V, Io=0.01A	4.95	5.00	5.05	V
Line Regulation	ΔVo-V_{IN}	V_{IN}=6.5V~9.5V, Io=1A	–	–	60	mV
Load Regulation	ΔVo-Io	V_{IN}=8V, Io=0~1A	–	–	100	mV
Quiescent Current	I_Q	V_{IN}=8V, Io=0A	–	2.3	4.0	mA
Ripple Rejection	RR	V_{IN}=8V, ein=2V_{P-P} f=120Hz, Io=0.5A	50	60	–	dB
Dropout Voltage	ΔV_{I-O}	Io=1A	–	1.1	1.2	V
Output Noise Voltage	V_{NO}	V_{IN}=8V, Io=0.5A BW=10Hz~100kHz	–	150	260	μV

[CAUTION]
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