

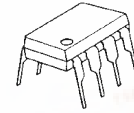


VOLTAGE AND CURRENT CONTROL IC

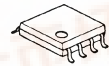
■ GENERAL DESCRIPTION

The NJM2146B is a voltage and current control IC which contains single-supply low offset voltage OP-AMP(2mV max.), low operating OP-AMP, and precision voltage reference. It is suitable for battery charger, second controller of switching regulator systems, and other battery systems.

■ PACKAGE OUTLINE



NJM2146BD



NJM2146BM

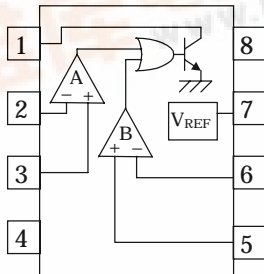


NJM2146BR

■ FEATURES

- Operating Voltage (2.5V ~ 18V)
- Internal Precision Voltage Reference (1.5V±1%)
- PC Terminal Current (60mA max.)
- Operating Current (3mA max.)
- Bipolar Technology
- Package Outline DIP8, DMP8, VSP8

■ PIN CONFIGURATION



PIN FUNCTION

1. PC
2. A -INPUT
3. A +INPUT
4. GND
5. B +INPUT
6. B -INPUT
7. V_{REF}
8. V⁺

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	20	V
Differential Input Voltage	V _{ID}	(Ach) 20 (Bch) ±4	V
Power Dissipation	P _D	(DIP8) 500 (DMP8) 300 (VSP8) 320	mW
PC Terminal Current	I _{PC}	60	mA
Operating Temperature Range	Topr	-40 ~ 85	°C
Storage Temperature Range	Tstg	-50 ~ 150	°C

(note)When the supply voltage is less than 20V, the absolute maximum input voltage is equal to the supply voltage

■ RECOMMENDED OPERATING CONDITIONS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Operating Voltage	Vopr	2.5 ~ 18	V





NJM2146B

■ ELECTRICAL CHARACTERISTICS

(V⁺=5V, T_a=25°C)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Operating Current	I _{CC}	I _{PC} =off	–	1	3	mA
Leakage Current	I _{PCLEAK}	V ⁺ =V _{PC} =20V	–	–	100	μA
Saturation Voltage	V _{PC(SAT)}	I _{PC} =50mA	–	0.5	0.7	V
Reference Voltage	V _{REF}	I _{REF} =0mA	1485	1500	1515	mV
Reference Voltage Load Regulation	ΔV _{REF} / ΔI _{REF}	I _{REF} =0 ~ 5mA	–	–	30	mV

[Ach]

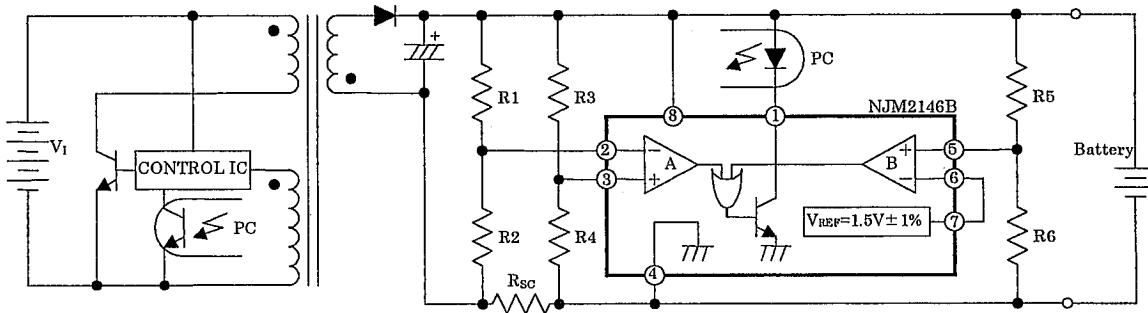
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V _{IO}		–	0.5	2	mV
Input Offset Current	I _{IO}		–	5	50	nA
Input Bias Current	I _B		–	80	250	nA
Large Signal Voltage Gain	A _V		–	80	–	dB
Input Common Mode Voltage Range	V _{ICM}		0 to 3	–	–	V
Common Mode Rejection Ratio	CMR		–	90	–	dB
Supply Voltage Rejection Ratio	SVR		–	80	–	dB
Slew Rate	SR		–	0.8	–	V/μs
Gain Bandwidth Product	GB	f=10kHz	–	2	–	MHz

[Bch]

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V _{IO}		–	1	6	mV
Input Offset Current	I _{IO}		–	10	50	nA
Input Bias Current	I _B		–	100	300	nA
Large Signal Voltage Gain	A _V		–	80	–	dB
Input Common Mode Voltage Range	V _{ICM}		1.0 to 4.4	–	–	V
Common Mode Rejection Ratio	CMR		–	90	–	dB
Supply Voltage Rejection Ratio	SVR		–	80	–	dB
Slew Rate	SR	A _V =1, V _{IN} =2.5V±1V	–	0.5	–	V/μs
Gain Bandwidth Product	GB	f=10kHz	–	1	–	MHz

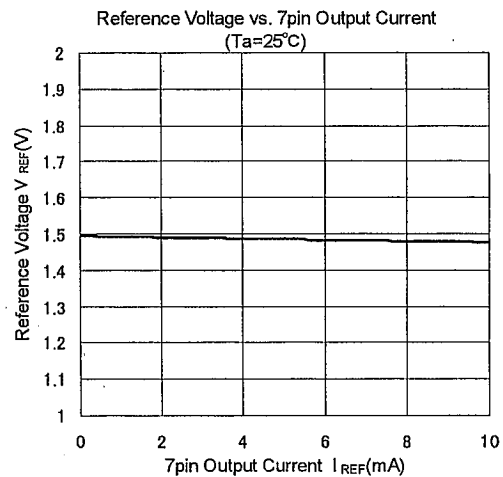
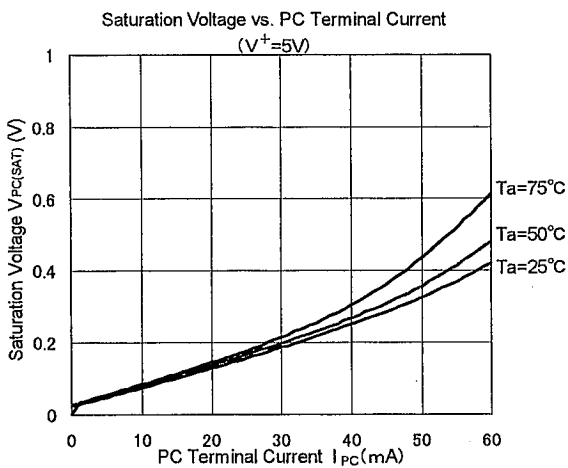
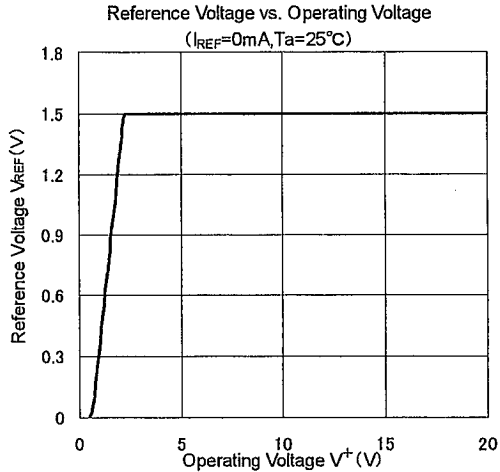
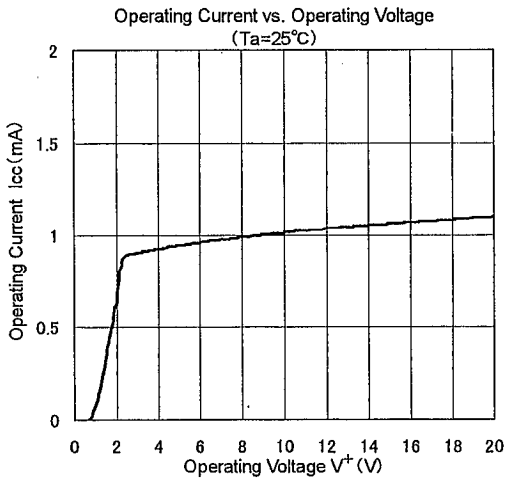
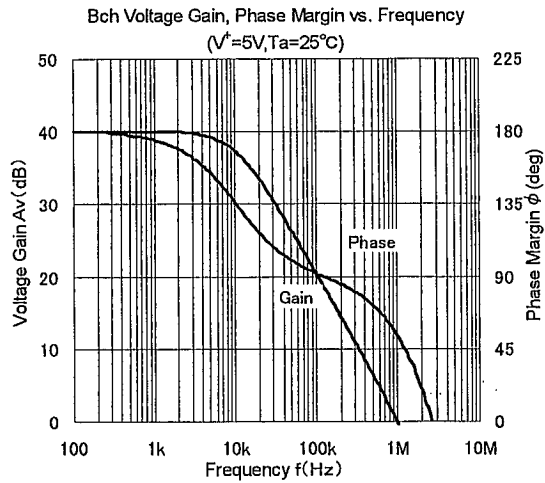
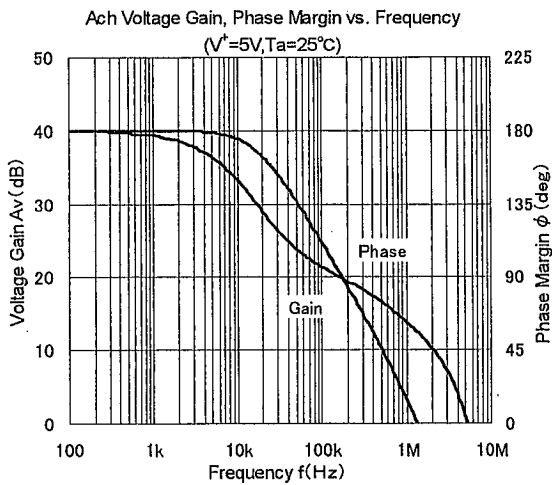
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■ TYPICAL APPLICATION

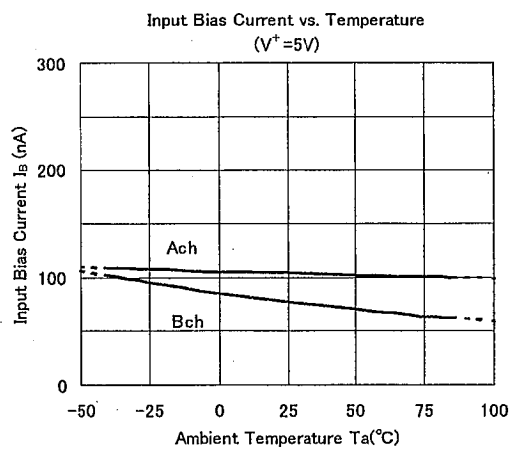
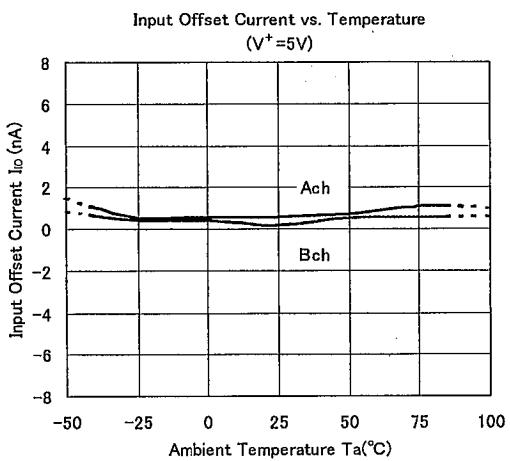
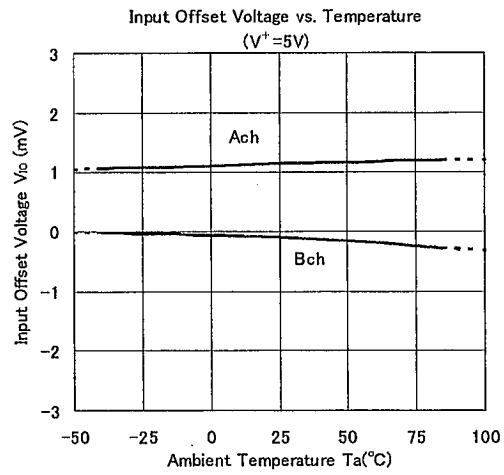
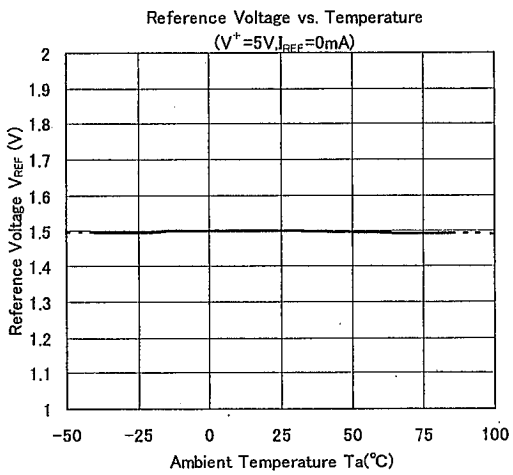
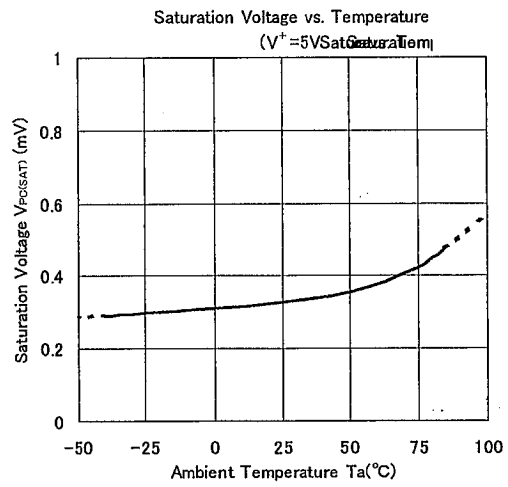
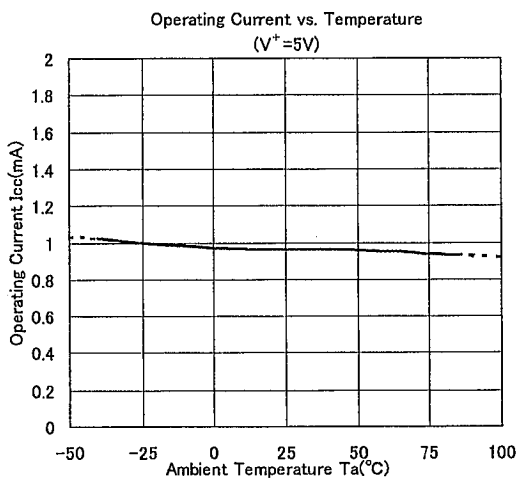


NJM2146B

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



MEMO

[CAUTION]

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