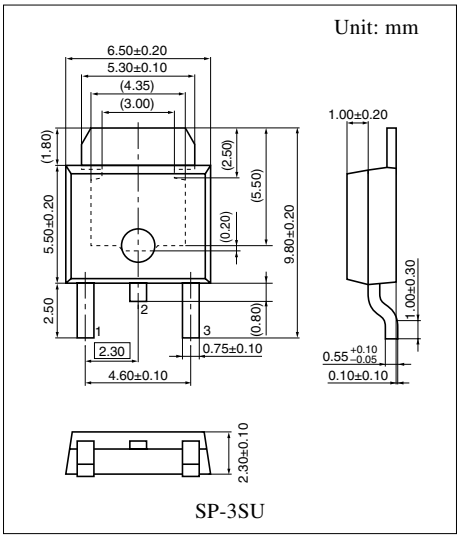
AN78xxNSP Series

3-pin positive output voltage regulator (1 A type)

■ Overview

The AN78xxNSP series is a 3-pin fixed positive output type monolithic voltage regulator housed in surface mounting package. Stabilized fixed output voltage is obtained from unstable DC input voltage with using minimum external components. 9 types of fixed output voltage are available; 5 V, 6 V, 7 V, 8 V, 9 V, 10 V, 12 V, 15 V and 18 V. They can be used widely in power circuits with current capacity up to 1 A.

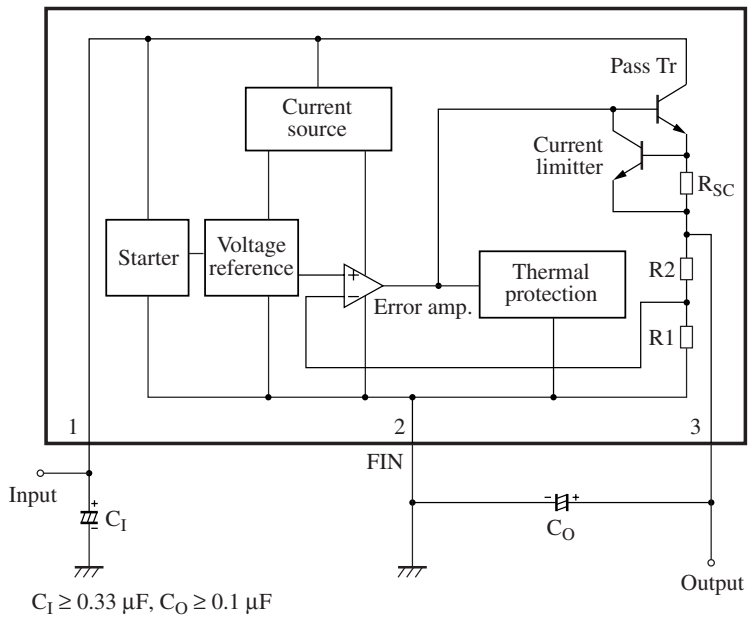


Note) The package of this product will be changed to lead-free type (SP-3SUA). See the new package dimensions section later of this datasheet.

■ Features

- Output voltage: 5 V, 6 V, 7 V, 8 V, 9 V, 10 V, 12 V, 15 V, 18 V
- Built-in overcurrent limit circuit
- Built-in thermal overload protection circuit
- Built-in ASO (area of safe operation) protection circuit

■ Block Diagram



$C_I \geq 0.33\ \mu F$, $C_O \geq 0.1\ \mu F$

■ Pin Descriptions

Pin No.	Description	
1	Input	Input voltage pin
2	GND	Ground pin (FIN)
3	Output	Output voltage pin

■ Absolute Maximum Ratings

Parameter	Symbol	Range	Unit
Supply voltage	V_{CC}	35	V
Supply current	I_{CC}	—	mA
Power dissipation *2	P_D	364	mW
Operating ambient temperature *1	T_{opr}	−30 to +85	°C
Storage temperature *1	T_{stg}	−55 to +150	°C

Note) 1. *1: Except for the operating ambient temperature and storage temperature, all ratings are for T_a = 25°C.
*2: The power dissipation shown is the value for the independent IC without a heat sink at T_a = 85°C.
When Tj exceeds 150°C (designed value), the internal circuit cuts off the output.
2. This IC is not suitable for car electronics equipment.

■ Electrical Characteristics at T_a = 25°C

• AN7805NSP (5 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.
Unless otherwise specified, V_I = 10 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	4.8	5	5.2	V
Output voltage tolerance	V_{O2}	V_I = 8 V to 20 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	4.75	—	5.25	V
Line regulation 1	REG_{IN1}	V_I = 7.5 V to 25 V, T_j = 25°C	—	3	100	mV
Line regulation 2	REG_{IN2}	V_I = 8 V to 12 V, T_j = 25°C	—	1	50	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	15	100	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	5.0	50	mV
Bias current	I_{Bias}	T_j = 25°C	—	3.9	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 7.5 V to 25 V, T_j = 25°C	—	—	1.3	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 8 V to 18 V, I_O = 100 mA, f = 120 Hz	62	—	—	dB

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	40	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
Output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	− 0.3	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

■ Electrical Characteristics at T_a = 25°C (continued)

• AN7806NSP (6 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.

Unless otherwise specified, V_I = 11 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	5.75	6	6.25	V
Output voltage tolerance	V_{O2}	V_I = 9 V to 21 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	5.7	—	6.3	V
Line regulation 1	REG_{IN1}	V_I = 8.5 V to 25 V, T_j = 25°C	—	5	120	mV
Line regulation 2	REG_{IN2}	V_I = 9 V to 13 V, T_j = 25°C	—	1.5	60	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	14	120	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	4.0	60	mV
Bias current	I_{Bias}	T_j = 25°C	—	3.9	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 8.5 V to 25 V, T_j = 25°C	—	—	1.3	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 9 V to 19 V, I_O = 100 mA, f = 120 Hz	59	—	—	dB

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	40	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
Output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	− 0.4	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

■ Electrical Characteristics at T_a = 25°C (continued)

• AN7807NSP (7 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.

Unless otherwise specified, V_I = 12 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	6.7	7	7.3	V
Output voltage tolerance	V_{O2}	V_I = 10 V to 22 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	6.6	—	7.4	V
Line regulation 1	REG_{IN1}	V_I = 9.5 V to 25 V, T_j = 25°C	—	5	140	mV
Line regulation 2	REG_{IN2}	V_I = 10 V to 15 V, T_j = 25°C	—	1.5	70	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	14	140	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	4.0	70	mV
Bias current	I_{Bias}	T_j = 25°C	—	3.9	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 9.5 V to 25 V, T_j = 25°C	—	—	1.0	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 10 V to 20 V, I_O = 100 mA, f = 120 Hz	57	—	—	dB

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	46	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
Output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	− 0.5	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

■ Electrical Characteristics at T_a = 25°C (continued)

• AN7808NSP (8 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.

Unless otherwise specified, V_I = 14 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	7.7	8	8.3	V
Output voltage tolerance	V_{O2}	V_I = 11 V to 23 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	7.6	—	8.4	V
Line regulation 1	REG_{IN1}	V_I = 10.5 V to 25 V, T_j = 25°C	—	6	160	mV
Line regulation 2	REG_{IN2}	V_I = 11 V to 17 V, T_j = 25°C	—	2	80	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	12	160	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	4.0	80	mV
Bias current	I_{Bias}	T_j = 25°C	—	3.9	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 10.5 V to 25 V, T_j = 25°C	—	—	1.0	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 11.5 V to 21.5 V, I_O = 100 mA, f = 120 Hz	56	—	—	dB

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	52	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
Output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	− 0.5	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

■ Electrical Characteristics at T_a = 25°C (continued)

• AN7809NSP (9 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.

Unless otherwise specified, V_I = 15 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	8.65	9	9.35	V
Output voltage tolerance	V_{O2}	V_I = 12 V to 24 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	8.55	—	9.45	V
Line regulation 1	REG_{IN1}	V_I = 11.5 V to 26 V, T_j = 25°C	—	7	180	mV
Line regulation 2	REG_{IN2}	V_I = 12 V to 18 V, T_j = 25°C	—	2	90	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	12	180	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	4.0	90	mV
Bias current	I_{Bias}	T_j = 25°C	—	3.9	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 11.5 V to 26 V, T_j = 25°C	—	—	1.0	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 11.5 V to 21.5 V, I_O = 100 mA, f = 120 Hz	56	—	—	dB

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	57	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	− 0.5	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

■ Electrical Characteristics at T_a = 25°C (continued)

• AN7810NSP (10 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.

Unless otherwise specified, V_I = 16 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	9.6	10	10.4	V
Output voltage tolerance	V_{O2}	V_I = 13 V to 25 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	9.5	—	10.5	V
Line regulation 1	REG_{IN1}	V_I = 12.5 V to 27 V, T_j = 25°C	—	8	200	mV
Line regulation 2	REG_{IN2}	V_I = 13 V to 19 V, T_j = 25°C	—	2.5	100	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	12	200	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	4.0	100	mV
Bias current	I_{Bias}	T_j = 25°C	—	3.9	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 12.5 V to 27 V, T_j = 25°C	—	—	1.0	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 13 V to 23 V, I_O = 100 mA, f = 120 Hz	56	—	—	dB

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	56	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
Output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	– 0.6	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

■ Electrical Characteristics at T_a = 25°C (continued)

• AN7812NSP (12 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.

Unless otherwise specified, V_I = 19 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	11.5	12	12.5	V
Output voltage tolerance	V_{O2}	V_I = 15 V to 27 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	11.4	—	12.6	V
Line regulation 1	REG_{IN1}	V_I = 14.5 V to 30 V, T_j = 25°C	—	10	240	mV
Line regulation 2	REG_{IN2}	V_I = 16 V to 22 V, T_j = 25°C	—	2	120	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	12	240	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	4.0	120	mV
Bias current	I_{Bias}	T_j = 25°C	—	4.0	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 14.5 V to 30 V, T_j = 25°C	—	—	1.0	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 15 V to 25 V, I_O = 100 mA, f = 120 Hz	55	—	—	dB

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	75	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
Output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	− 0.8	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

■ Electrical Characteristics at T_a = 25°C (continued)

• AN7815NSP (15 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.

Unless otherwise specified, V_I = 23 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	14.4	15	15.6	V
Output voltage tolerance	V_{O2}	V_I = 18 V to 30 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	14.25	—	15.75	V
Line regulation 1	REG_{IN1}	V_I = 17.5 V to 30 V, T_j = 25°C	—	11	300	mV
Line regulation 2	REG_{IN2}	V_I = 20 V to 26 V, T_j = 25°C	—	3	150	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	12	300	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	4.0	150	mV
Bias current	I_{Bias}	T_j = 25°C	—	4.0	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 17.5 V to 30 V, T_j = 25°C	—	—	1.0	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 18.5 V to 28.5 V, I_O = 100 mA, f = 120 Hz	54	—	—	dB

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	90	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
Output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	−1.0	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

■ Electrical Characteristics at T_a = 25°C (continued)

• AN7818NSP (18 V type)

The specified condition T_j = 25°C means that the test should be carried out within so short a test time (within 10 ms) that the characteristic value drift due to the chip junction temperature rise can be ignored.

Unless otherwise specified, V_I = 27 V, I_O = 500 mA, C_I = 0.33 µF and C_O = 0.1 µF

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage	V_{O1}	T_j = 25°C	17.3	18	18.7	V
Output voltage tolerance	V_{O2}	V_I = 21 V to 33 V, I_O = 5 mA to 1 A T_j = 25°C, P_D < 5 W	17.1	—	18.9	V
Line regulation 1	REG_{IN1}	V_I = 21 V to 33 V, T_j = 25°C	—	14	360	mV
Line regulation 2	REG_{IN2}	V_I = 24 V to 30 V, T_j = 25°C	—	4	180	mV
Load regulation 1	REG_{L1}	I_O = 5 mA to 1.5 A, T_j = 25°C	—	14	360	mV
Load regulation 2	REG_{L2}	I_O = 250 mA to 750 mA, T_j = 25°C	—	4.0	180	mV
Bias current	I_{Bias}	T_j = 25°C	—	4.1	8	mA
Bias current fluctuation to input	$\Delta I_{Bias(IN)}$	V_I = 21 V to 33 V, T_j = 25°C	—	—	1.0	mA
Bias current fluctuation to load	$\Delta I_{Bias(L)}$	I_O = 5 mA to 1 A, T_j = 25°C	—	—	0.5	mA
Ripple rejection ratio	RR	V_I = 22 V to 32 V, I_O = 100 mA, f = 120 Hz	53	—	—	dB

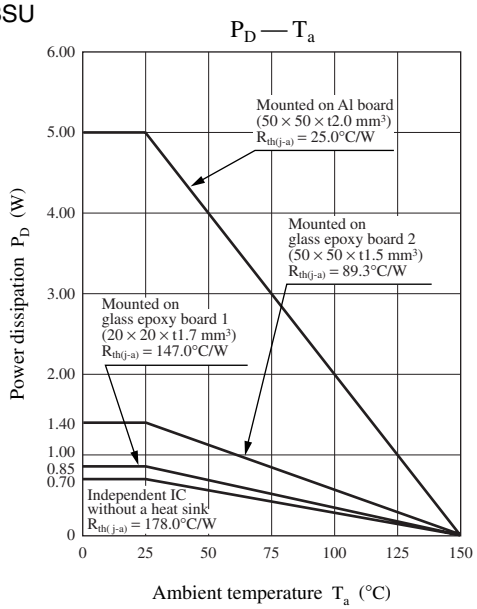
• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output noise voltage	V_{NO}	f = 10 Hz to 100 kHz	—	110	—	µV
Minimum input/output voltage difference	$V_{DIF(min)}$	I_O = 1 A, T_j = 25°C	—	2	—	V
Output short-circuit current	$I_{O(Short)}$	V_I = 35 V, T_j = 25°C	—	700	—	mA
Peak output current	$I_{O(Peak)}$	T_j = 25°C	—	2.0	—	A
Output voltage temperature coefficient	$\Delta V_O / T_a$	I_O = 5 mA, T_j = 0°C to 125°C	—	−1.1	—	mV/°C
Thermal protection operating temperature	$T_{j(TH)}$	I_O = 5 mA	—	150	—	°C

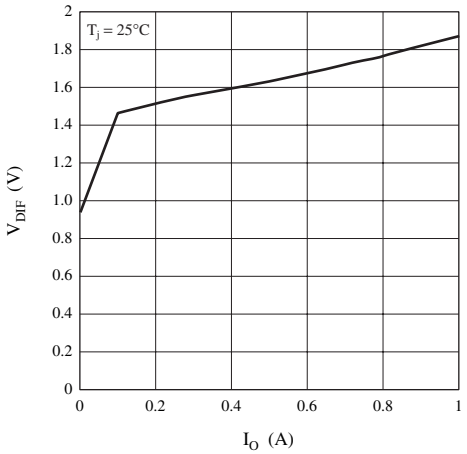
■ Application Notes

1. P_D — T_a curves of SP-3SU

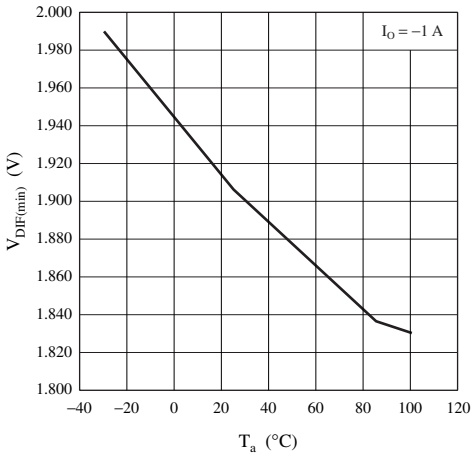


2. Main Characteristics

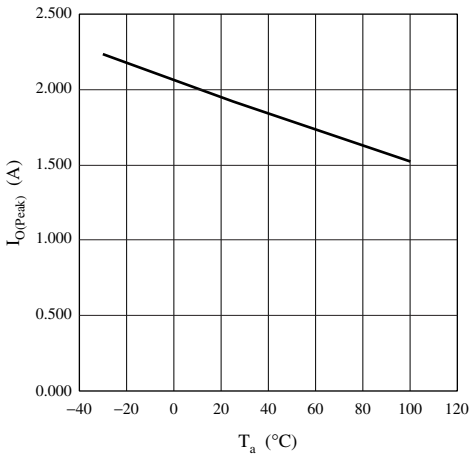
Minimum input/output voltage difference vs. load current characteristic



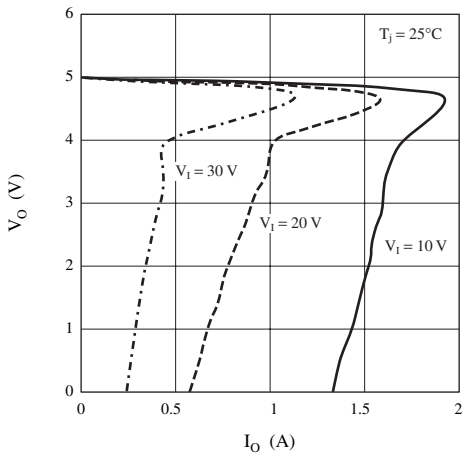
Minimum input/output voltage difference temperature characteristic



Peak output current temperature characteristic

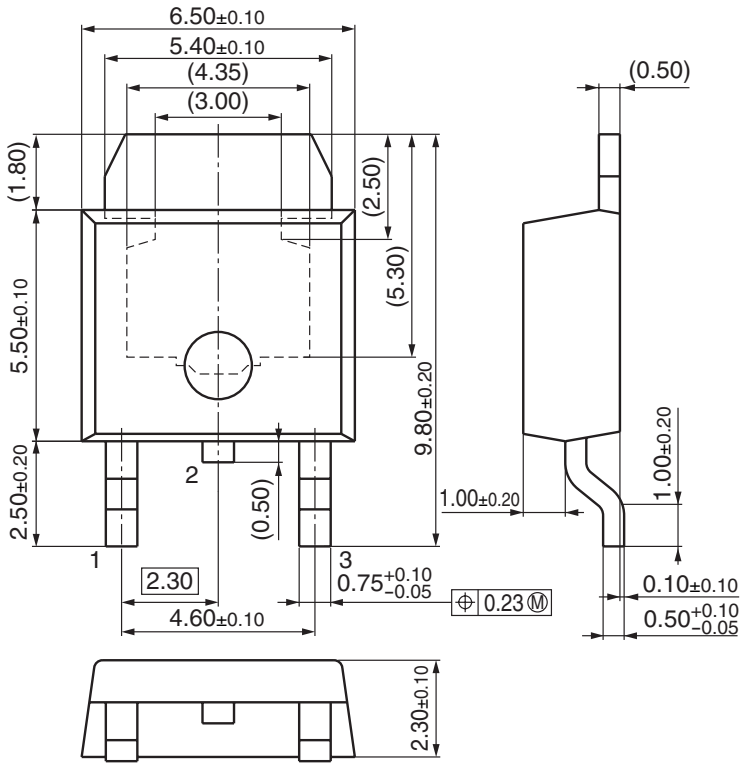


Current limit characteristics



■ New Package Dimensions (Unit: mm)

• SP-3SUA (Lead-free package)



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