

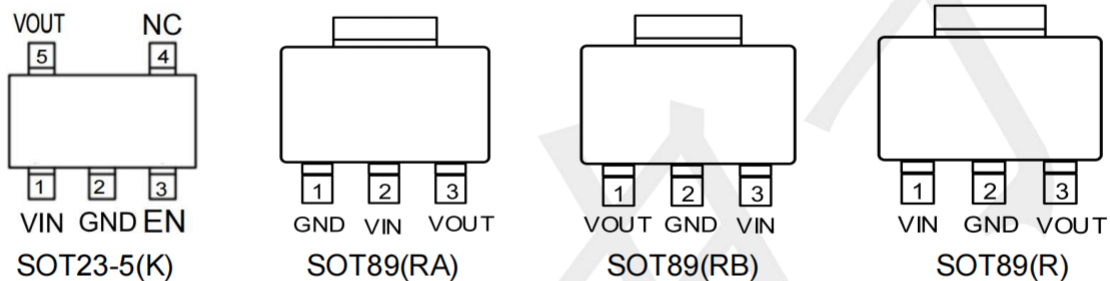
Features

- 5 μ A Current at no Load
- $\pm 2\%$ Output Accuracy
- 150mA Output Current
- Current Limit Protection

Applications

- Industrial Controls
- Home Automation
- Modules (Wireless, Camera, etc.)
- Portable, Battery Powered Equipment

PIN CONFIGURATION



Pin Number				Pin Name	Pin Function
SOT23-5(K)	SOT89(RA)	SOT89(RB)	SOT89(R)		
2	1	2	2	GND	Ground
1	2	3	1	VIN	Input of Supply Voltage
5	3	1	3	VOUT	Output of the Regulator
3	--	--	--	EN	Enable Control Input
4	--	--	--	NC	No Internal Connection

Ordering Information

AP2204X-X X X

PACKAGE TYPE
K: SOT23-5
R: SOT89-3
RA: SOT89-3
RB: SOT89-3

RoHS/Green
G1: Green

Packing
TR: Tape & Reel

OUTPUT VOLTAGE

1.5: 1.5V
1.8: 1.8
2.5: 2.5V
2.8: 2.8V
3.0: 3.0V
3.3: 3.3V
5.0: 5.0V

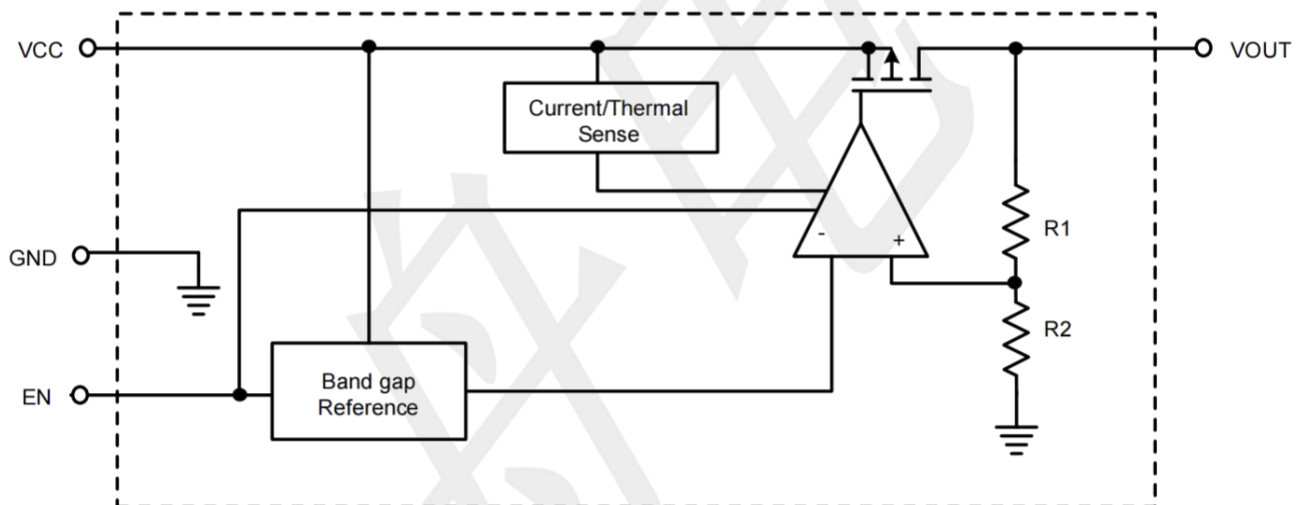
Example: AP2204K-3.0TRG1
→ 3.3V Version, in SOT23-5 Package & Tape & Reel Packing Type

Absolute Maximum Ratings

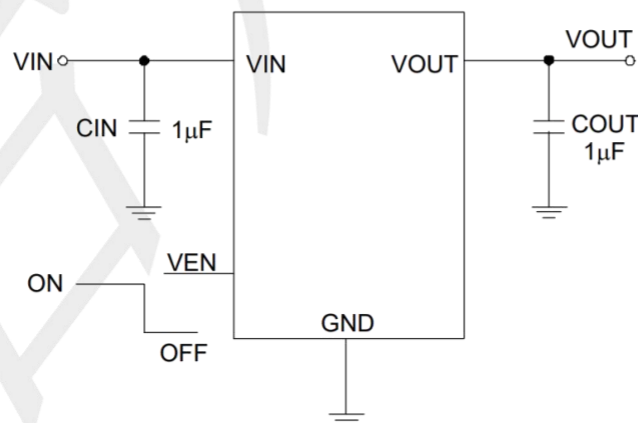
over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
VIN	Continuous input voltage range	-0.3	29	V
VOUT	Output voltage range	-0.3	6	
EN	EN pin voltage range	-0.3	VOUT+0.3	
IOUT	Output pin current	Internally limited		mA
Temperature	Operating junction, TJ	-25	85	°C
	Storage, Tstg	-40	125	

BLOCK DIAGRAM



Typical Application Circuit



AP2204K-3.0TRG1

WIDE INPUT VOLTAGE RANGE, LDO REGULATOR

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Electrical Characteristics

(VIN=15V, VEN=5V, TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
Supply Voltage	VIN		1.7	--	27	V
Output current	IOUT		0	250	300	mA
DC Output Voltage Accuracy		IOUT = 0.1mA	-2	--	2	%
Dropout Voltage (VIN-VOUT)	IOUT = 100mA	VOUT = 2.8V	--	480	--	mV
		VOUT = 3.0V	--	450	--	
		VOUT = 3.3V	--	420	--	
		VOUT = 5.0V	--	350	--	
Maximum output current	Ioutmax	VIN= VOUT+1V	--	500	--	mA
Ground Current (IOUT = 0mA)	IQ	VOUT = 3.3V	--	5	--	uA
Shutdown Ground Current	ISD	VEN = 0V, VOUT = 0V	--	0.01	0.5	
VOUT Shutdown Leakage Current	ILEAK		--	0.01	0.5	
Enable Threshold Voltage	VIH	EN Rising	1.3	--	--	V
	VIL	EN Falling	--	--	0.7	
EN Input Current	IEN	VEN = 5V	--	10	100	nA
Line Regulation	ΔLINE	IOUT = 1mA, 2≤VIN≤18V	--	0.3	--	%
Load Regulation	ΔLOAD	10mA≤ IOUT ≤ 100mA	--	0.3	--	
Output Current Limit	ILIM	VOUT=0.9× VOUT(NOM)	300	450		mA
Power Supply Rejection Ratio	PSRR	VOUT = 3.3V, IOUT = 30mA, VIN = 6V, f = 1kHz	--	65	--	dB
Thermal Shutdown Temperature	TSD	IOUT = 10mA	--	160	--	°C
Thermal Shutdown Hysteresis	ΔTSD		--	15	--	
Package Thermal Resistance θJA (Note 1)	SOT23-5	Thermal Resistance Junction-toAmbient	--	220	--	°C/W
	SOT23-3L		--	210	--	
	SOT89-3		--	120	--	
Total Power Dissipation Tc=25°C	SOT23-5	PDTOT	--	0.25	--	W
	SOT23-3L		--	0.3	--	
	SOT89-3		--	0.5	--	

Note: 1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

AP2204K-3.0TRG1

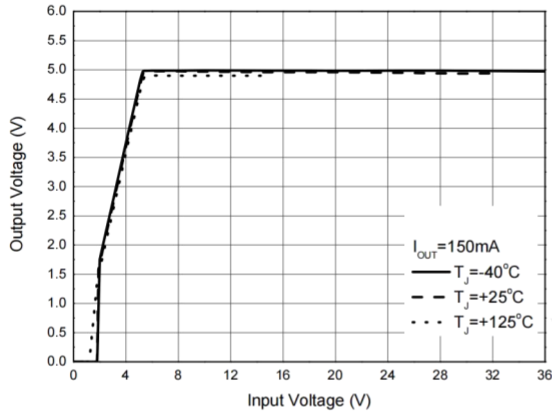
WIDE INPUT VOLTAGE RANGE, LDO REGULATOR

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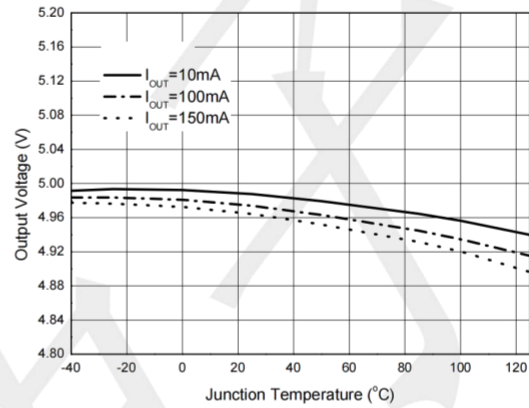
Typical Operating Characteristics (25 °C, unless otherwise noted)

Unless otherwise specified: $T_A = 25^\circ\text{C}$, $V_{IN} = V_O(\text{NOM}) + 1\text{V}$, $C_{OUT} = 1\mu\text{F}$, $C_{IN} = 1\mu\text{F}$ all voltage options, EN pin tied to V_{IN} .

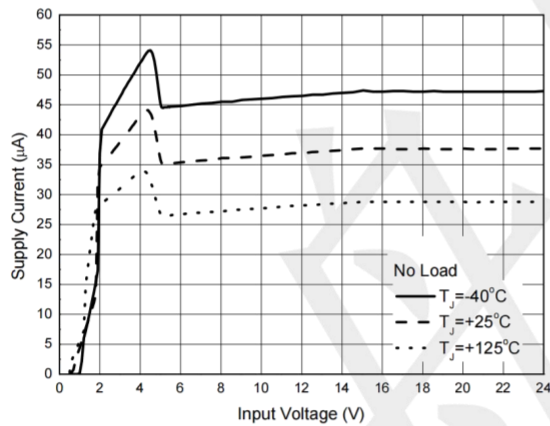
Output Voltage vs. Input Voltage



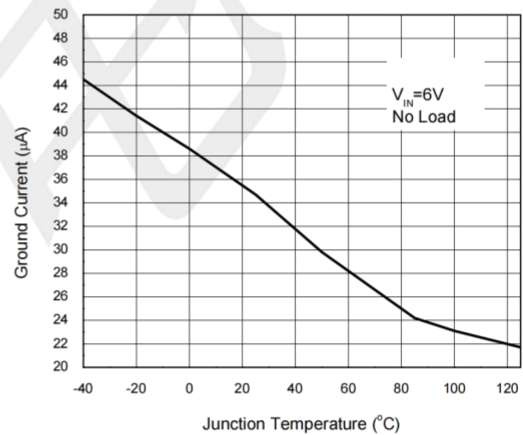
Output Voltage vs. Junction Temperature



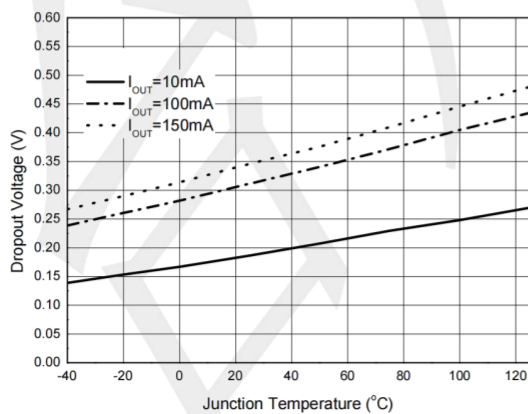
Supply Current vs. Input Voltage



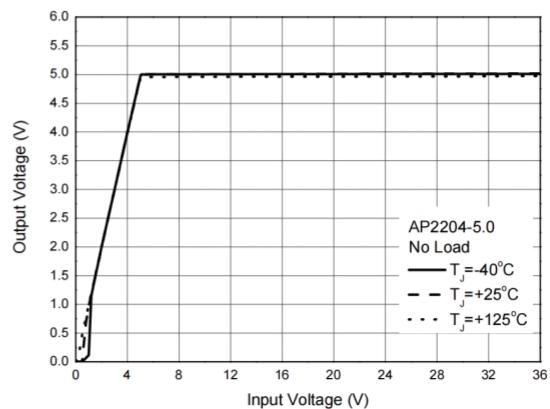
Ground Current vs. Junction Temperature



Dropout Voltage vs. Junction Temperature

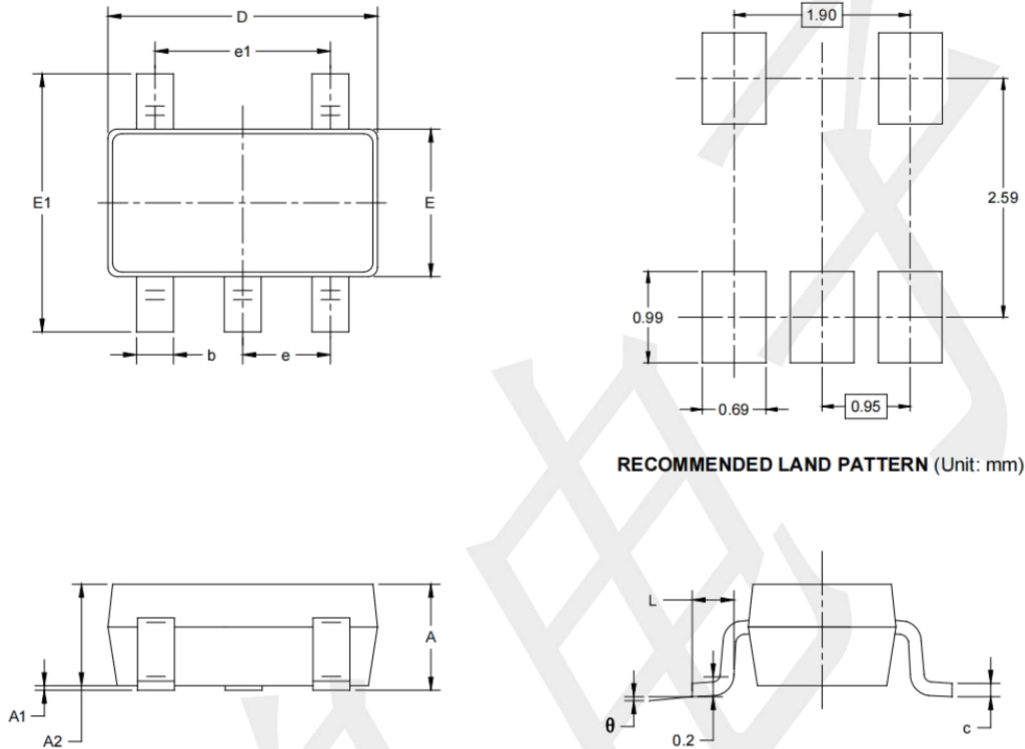


Output Voltage vs. Input Voltage



Package informantion

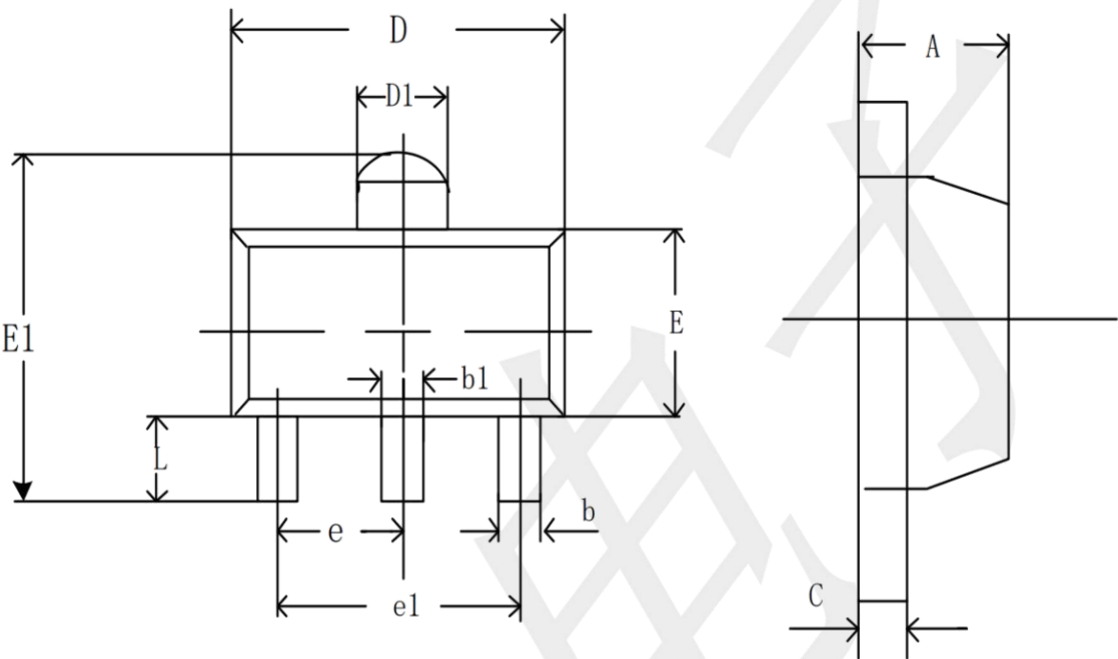
SOT23-5



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950 BSC		0.037 BSC	
e1	1.900 BSC		0.075 BSC	
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Package informantion

SOT89-3



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.350	0.520	0.013	0.197
b	0.400	0.580	0.016	0.023
c	0.350	0.450	0.014	0.018
D	4.400	4.600	0.173	0.181
D	1.550	1.750	0.061	0.069
E	2.350	2.600	0.091	0.102
E	3.720	4.530	0.146	0.178
e	1.500TYP		0.060TYP	
e	3.000TYP		0.118TYP	
L	0.820	1.100	0.032	0.047

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