Negative Voltage Regulator

FEATURES

- Low Power Consumption.
- Low Temperature Coefficient.
- Output Short Circuit Protected.
- Wide Operating Voltage Range.
- Good Input Stability.
- Space-Saving Package: TO-92 or SOT-89

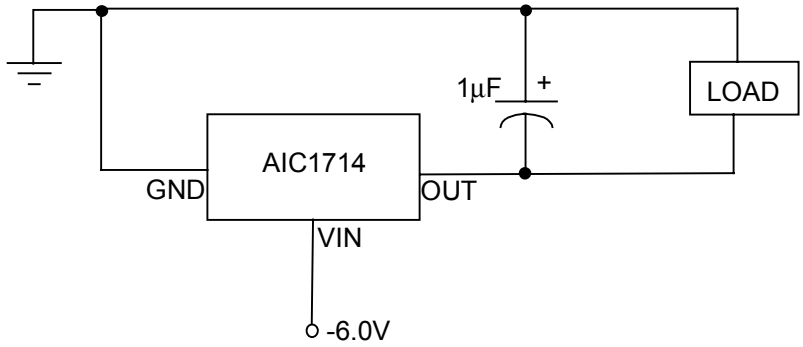
APPLICATIONS

- LCD for Printing Calculators
- Cameras
- Voltage References for Instrumentation

DESCRIPTION

The AIC1714 is a series of 3-terminal negative voltage regulators with output voltages internally set below the positive supply voltage. Since the AIC1714 consumes less current and only requires a small input/output voltage difference than existing industry standard 3-terminal voltage regulators, a battery-powered portable equipment is afforded a high capacity and longer service life. The AIC1714 is ideal for power source of liquid crystal displays.

TYPICAL APPLICATION CIRCUIT

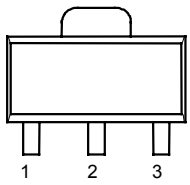
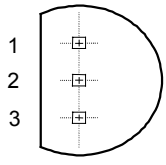


Negative Voltage Regulator

ORDERING INFORMATION

AIC1714-XX-XX

- PACKAGING TYPE
  X: SOT-89
  Z: TO-92
- TEMPERATURE RANGE
  C: 0°C~+70°C
- OUTPUT VOLTAGE
  30: -3.0V
  33: -3.3V
  50: -5.0V

ORDER NUMBER	PIN CONFIGURATION
AIC1714-30CX AIC1714-33CX AIC1714-50CX (SOT-89)	FRONT VIEW 1: VIN 2: GND 3: VOUT 
AIC1714-30CZ AIC1714-33CZ AIC1714-50CZ (TO-92)	TOP VIEW 1: GND 2: VIN 3: VOUT 

ABSOLUTE MAXIMUM RATINGS

Supply Voltage ..... -13V

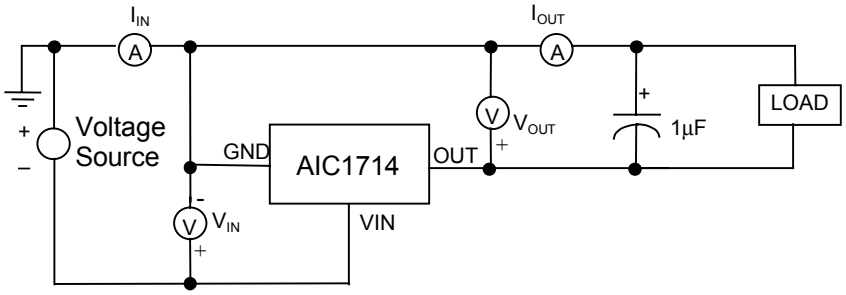
Operating Temperature Range ..... - 20°C~80°C

Storage Temperature Range ..... - 65°C~150°C

Power Dissipation SOT-89 Package 0. 80W

TO-92 Package 0.78W

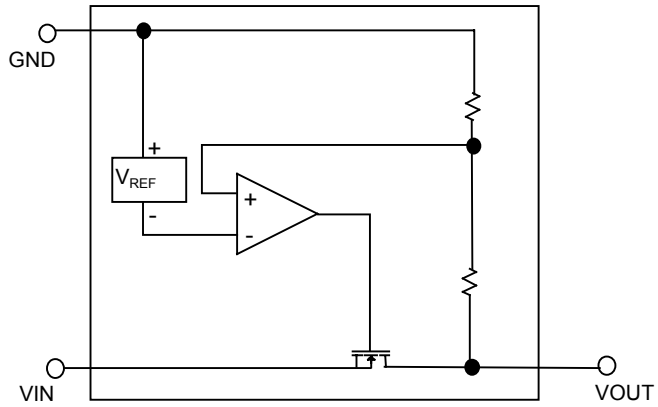
TEST CIRCUIT



ELECTRICAL CHARACTERISTICS (V_{IN}= -6.0V, Ta=25°C, unless otherwise specified.)

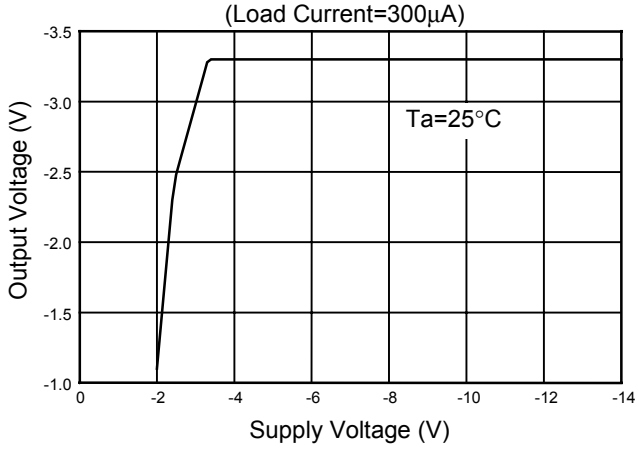
PARAMETER	TEST CONDITIONS		SYMBOL	MIN.	TYP.	MAX.	UNIT
Output Voltage	I_{OUT}=300μA	AIC1714-30	V_{OUT}	-2.95	-3.0	-3.05	V
		AIC1714-33		-3.25	-3.3	-3.35	V
		AIC1714-50		-4.93	-5.0	-5.07	V
Load Regulation	I_{OUT}=0~5mA		ΔV_{OUT}		20	100	mV
I/O Voltage Difference	I_{OUT}=300μA		V_{DIFF}		50	200	mV
Supply Current	I_{OUT}=0		I_{IN}		6	12	μA
Input Stability			$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$		0.05		%/ V
Temperature Coefficient	-25°C~85°C		T_C		50		ppm
Output Short Circuit Current	R_{LOAD}=0			15	24		mA

BLOCK DIAGRAM

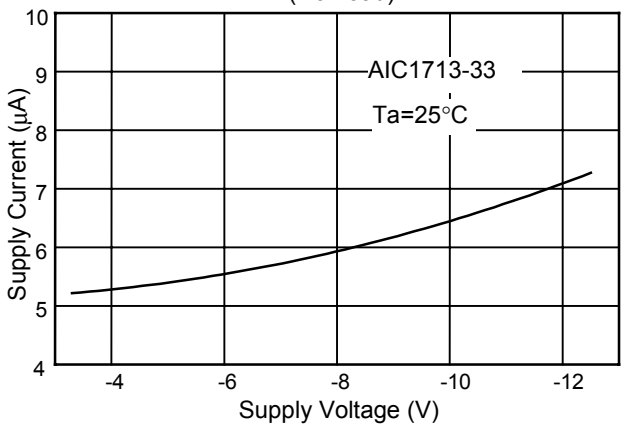


TYPICAL PERFORMANCE CHARACTERISTICS

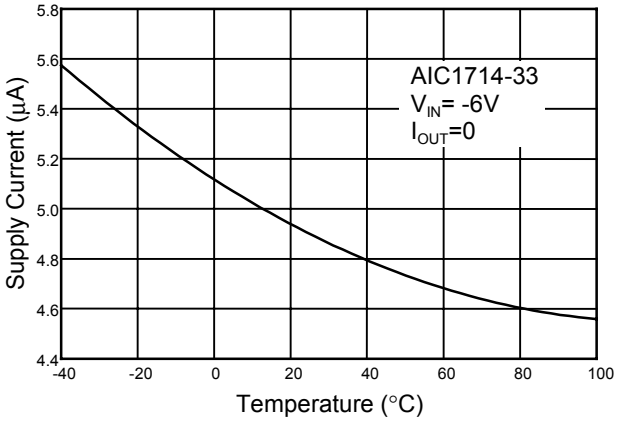
Output Voltage vs. Supply Voltage
(Load Current=300μA)



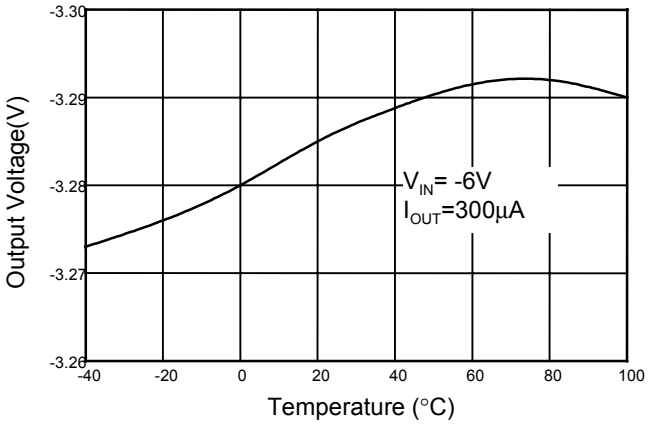
Output Voltage vs. Supply Voltage
(No Load)



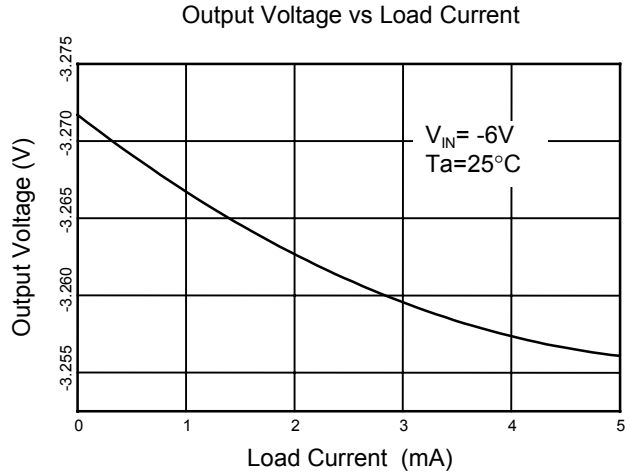
Supply Current vs Temperature



Output Voltage vs Temperature

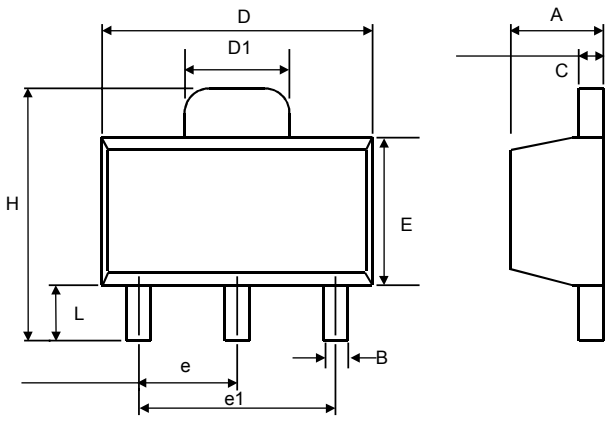


TYPICAL PERFORMANCE CHARACTERISTICS (Continued)



PHYSICAL DIMENSIONS

- **SOT-89 (unit: mm)**

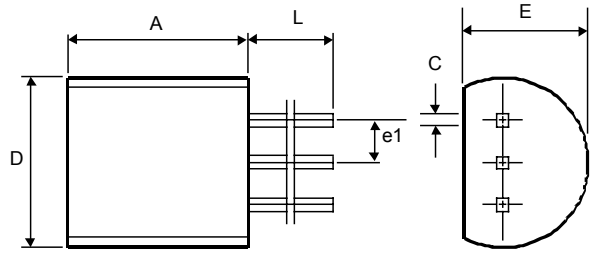


SYMBOL	MIN	MAX
A	1.40	1.60
B	0.36	0.48
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 (TYP.)	
e1	3.00 (TYP.)	
H	3.94	4.25
L	0.89	1.20

- **SOT89 Marking**

Part No.	Marking
AIC1714-30	AP30
AIC1714-33	AP33
AIC1714-50	AP50

- **TO-92 (unit: mm)**



SYMBOL	MIN	MAX
A	4.32	5.33
C	0.38 (TYP.)	
D	4.40	5.20
E	3.17	4.20
e1	1.27 (TYP.)	
L	12.7	-