

42094

POSITIVE HIGH TEMPERATURE REGULATOR

Mii

HYBRID MICROELECTRONICS
PRODUCTS DIVISION

Features:

- Output current to 1.5 amps
- Input voltage to 38V
- Internal short circuit protection, foldback and current limiting
- Storage Temperature 225°C
- 200°C Operating Temperature
- Output voltage to 30 VDC

Applications:

- Logging while drilling
- Measuring while drilling (down-hole applications)
- Other harsh environments
- Designed to use in high temperature environments 200°C

DESCRIPTION

The 42094 series of regulators covers the voltage range from 5 VDC through 30 VDC. These regulators are fabricated using hybrid techniques and will operate at temperatures up to 200°C case. These devices are complete with internal short circuit protection which includes voltage shutdown and current foldback. The 42094 series regulators normally do not require any additional components. However, for good design practice, an external filter cap should be installed at the input, as close to the case as possible.

ABSOLUTE MAXIMUM RATINGS AT 200°C

Output Current (I _{OUT})	1.5A
Input Voltage (V _{IN})	+38VDC
Operating Temperature (T _C)	200°C
Storage Temperature	-65°C to 200°C
Power Dissipation (P _d)	25W

TABLE 1 (see note)

TYPE	V _{OUT} VDC	MAX I _{OUT} A	TYP I _{KNEE} A
42094-005	5	1.5	2.0
42094-012	12	1.5	2.0
42094-015	15	1.5	2.0
42094-018	18	1.5	2.0
42094-024	24	1.5	2.0
42094-030	30	1.5	2.0

NOTE: Under condition (V_{IN} - V_{OUT}) x I_{OUT} ≤ 25 watts at 200°C case. Micropac can provide custom output voltages between 5VDC and 30VDC.

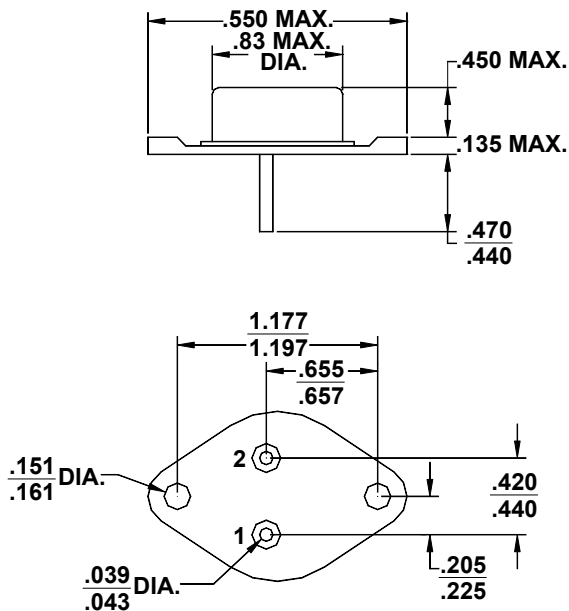
Micropac Industries cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement. Micropac reserves the right to make changes at any time in order to improve design and to supply the best product possible.

ELECTRICAL CHARACTERISTICS

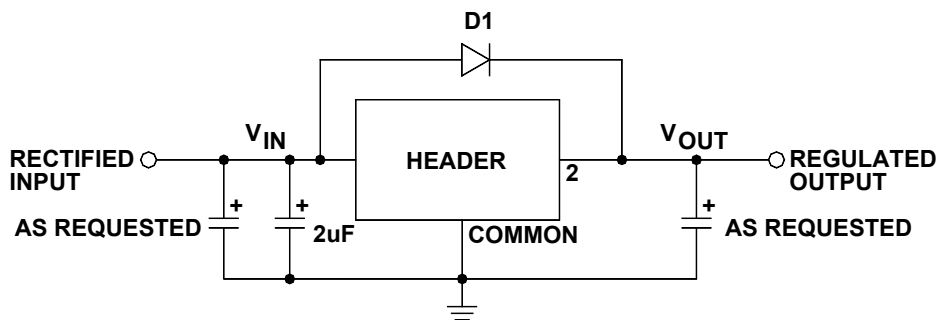
PARAMETER	TEST CONDITIONS	TEMPERATURE CASE TEMP	TYPICAL
*Output Voltage	$I_{OUT} = 300 \text{ mA}$ $V_{IN} = V_{OUT} + 3\text{VDC}$	+25°C to +200°C	$V_{OUT} \pm 1.0\%$
*Line Regulation	$V_{IN} = V_{OUT} + 3\text{VDC}$ to $V_{IN} = 38 \text{ VDC}$ $I_{OUT} = 50 \text{ mA}$	+25°C to +200°C	$V_{OUT} \pm 0.3\%$
Load Regulation	$V_{IN} = V_{OUT} + 5\text{VDC}$ $I_{OUT} = 50 \text{ to } 300\text{mA}$	+25°C to +200°C	$V_{OUT} \pm 0.5\%$
Ripple Rejection at 120 Hz	$V_{IN} = V_{OUT} + 5\text{VDC}$	+25°C	-60db
Standby Current	$V_{IN} = V_{OUT} + 5\text{VDC}$ $I_{OUT} = 0$	+25°C	30mA
Short Circuit Current	$V_{IN} = V_{OUT} + 5\text{VDC}$	+25°C	400mA
Short Circuit Current	$V_{IN} = V_{OUT} + 5\text{VDC}$	+200°C	200mA
Foldback Current (knee)	$V_{IN} = V_{OUT} + 5\text{VDC}$	+25°C	2A
Foldback Current (knee)	$V_{IN} = V_{OUT} + 5\text{VDC}$	+200°C	1.5A
Noise Output	$V_{IN} = V_{OUT} + 5\text{VDC}$ $I_{OUT} = 300 \text{ mA}$	+25°C	2mVRMS
Differential Voltage * ($\Delta V = V_{IN} - V_{OUT}$)	$I_{OUT} = 300 \text{ mA}$	+25°C to +200°C	3VDC MIN

* $V_{IN} = 10\text{V Min}$

Mechanical Configuration



Typical Connection Diagram



Note: D1 should be installed for input safety.

Electrical Conncetions	
Case	V _{IN}
Pin 1	Ground
Pin 2	V _{OUT}

Micropac Industries cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement. Micropac reserves the right to make changes at any time in order to improve design and to supply the best product possible.