

42095**NEGATIVE HIGH TEMPERATURE REGULATOR****Mii****HYBRID MICROELECTRONICS
PRODUCTS DIVISION****Features:**

- Output current to 1.5 amps
- Input voltage to -30V
- Internal short circuit protection, foldback and current limiting
- Storage Temperature +250°C
- 200°C Operating temperature

Applications:

- Logging while drilling
- Measuring while drilling (down-hole applications)
- Other harsh environments
- Used as military and industrial devices
- Designed for use in high temperature environments

DESCRIPTION

The 42095 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 42095 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 Case temperature

| | |
|--------------------------------------|----------------|
| 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 | I_{KNEE} TYP A |
|-----------|---------------|-----------------|------------------|
| 42095-005 | -5 | 1.5 | 2.0 |
| 42095-012 | -12 | 1.5 | 2.0 |
| 42095-015 | -15 | 1.5 | 2.0 |
| 42095-018 | -18 | 1.5 | 2.0 |
| 42095-024 | -24 | 1.5 | 2.0 |
| 42095-030 | -30 | 1.5 | 2.0 |

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

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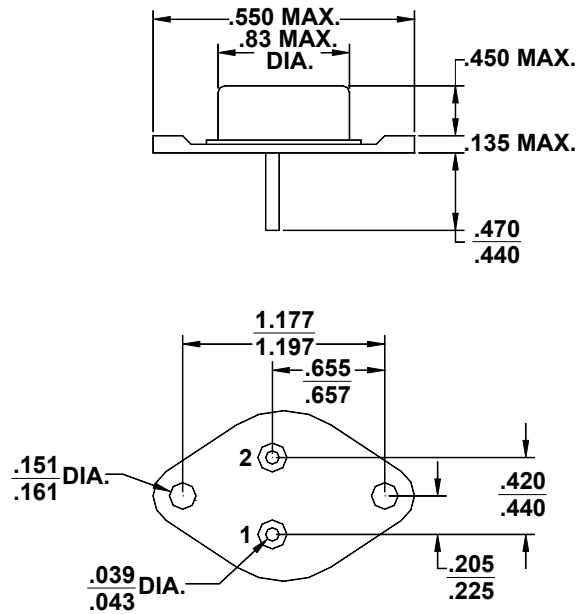
ELECTRICAL CHARACTERISTICS

| 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 $V_{IN} = 38 \text{ V}$ $I_{OUT} = 50 \text{ mA}$ | +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 | 3 VDC MIN |

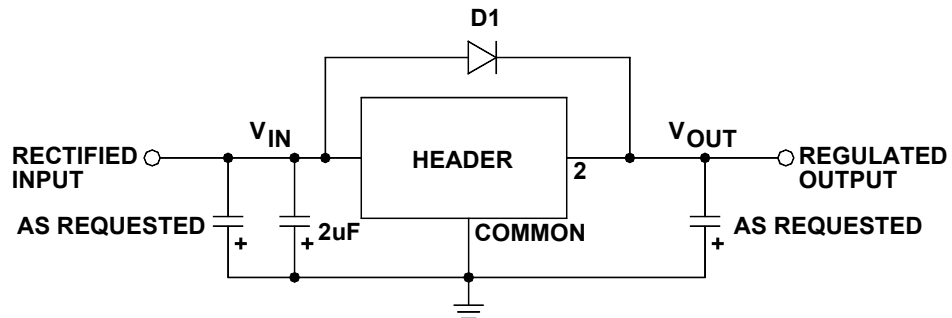
* $V_{IN} = 10\text{V Min}$

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Mechanical Configuration



Typical Connection Diagram



| Electrical Connection | |
|-----------------------|-----------|
| Case | V_{IN} |
| Pin 1 | Ground |
| Pin 2 | V_{OUT} |

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