

42051

**5 A FIXED THREE TERMINAL
NEGATIVE VOLTAGE REGULATORS**
Commercial or Military

Mii

HYBRID MICROELECTRONICS
PRODUCTS DIVISION

Features:

- Output current to 5 Amps
- Output voltage To -34 V
- Internal short circuit protection

Applications:

- Military and Hi Rel industrial applications where hermetically sealed product is required.

DESCRIPTION

The 42051 series of regulators covers the voltage range from -5 V through -34 V. These regulators are fabricated using hybrid techniques. The devices are complete with internal short circuit protection which includes voltage shutdown and current fold-back. To insure circuit stability under all load combinations it is recommended that a minimum of 2.0 μ F capacitance (solid tantalum) be connected between power ground and the input to the regulator.

ABSOLUTE MAXIMUM RATINGS

| | |
|-------------------------------------------------|-----------------|
| Output Current - I_{OUT} | 5 A |
| Power Dissipation @ 25°C Case Temperature | 120W |
| Operating Temperature..... | -55°C to +125°C |
| Storage Temperature | -65°C to +150°C |
| Input Voltage - V_{IN} | -40 V |

NOTE: Lead Temperature (Soldering, 10 sec.) 300°C

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Micropac reserves the right to make changes at any time in order to improve design and to supply the best product possible.

ELECTRICAL CHARACTERISTICS (Note 1)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------------|---------------|------------------------------------------------------------------|-----------------|-----------|-----------------|---------------|
| Output Voltage | V_{OUT} | $I_{OUT} = 1A, V_{IN} = V_O - 5V$ | $V_{OUT} + .1V$ | V_{OUT} | $V_{OUT} - .1V$ | VDC |
| Differential Voltage $V_{IN} - V_{OUT}$ | ΔV | $I_{OUT} = I_{MAX}$ | 5 | | | VDC |
| Line Regulation (Note 3) | | $-V_{IN} = V_{OUT} - 5V$ to $-V_{IN} = -40V$ | | | .1 | % V_{OUT} |
| Load Regulation (Note 2) | | $I_{OUT} = .25A$ to $-I_{OUT} = -I_{MAX}$ $V_{IN} = V_O - 5V$ | | | 40 | mV |
| Ripple Rejection | | $f = 50$ to 500 Hz 1.0V (P-P) $V_{IN} - V_{OUT} = 5V$ | 50 | | | dB |
| Temperature Coefficient | T_C | $0^\circ C \leq T_C \leq 100^\circ C$ | | .05 | | %/ $^\circ C$ |
| Standby Current | I_S | | | | 25 | mA |
| Thermal Resistance | θ_{jc} | | | 1 | | $^\circ C/W$ |
| Long Term Stability | | | | 0.1 | | %/1000 hrs |

Note 1: Case temperature 25°C unless otherwise specified.

Note 2: Voltage measured at Pin 2 within .05 inches from case.

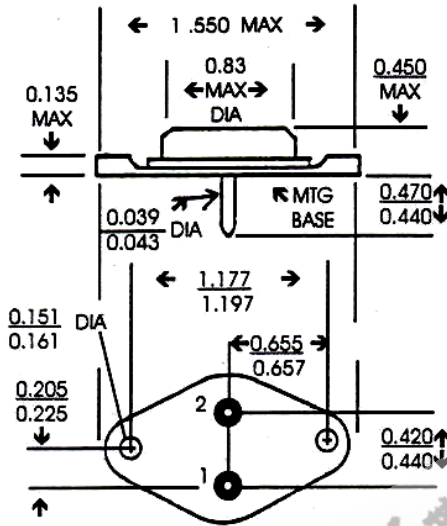
Note 3: Instantaneous regulation, average chip temperature changes must be accounted for separately.

Standard Outputs

| TYPE | V_{OUT} (VDC) | MAX I_{OUT} (A) | TYP I_{KNEE} (A) | TYP I_{SC} (A) |
|-------------|-----------------|-------------------|--------------------|------------------|
| 42051 - 055 | -5 | 5 | 6.5 | 2.5 |
| 065 | -6 | 5 | 6.5 | 2.5 |
| 075 | -7 | 5 | 6.5 | 2.5 |
| 085 | -8 | 5 | 6.5 | 2.5 |
| 095 | -9 | 5 | 6.5 | 2.5 |
| 105 | -10 | 5 | 6.5 | 2.5 |
| 124 | -12 | 4 | 5 | 2.5 |
| 144 | -14 | 4 | 5 | 2 |
| 154 | -15 | 4 | 5 | 2 |
| 164 | -16 | 4 | 5 | 2 |
| 184 | -18 | 4 | 5 | 2 |
| 204 | -20 | 4 | 5 | 2 |
| 223 | -22 | 3 | 4 | 2 |
| 243 | -24 | 3 | 4 | 1.5 |
| 263 | -26 | 3 | 4 | 1.5 |
| 283 | -28 | 3 | 4 | 1.5 |
| 303 | -30 | 3 | 4 | 1.5 |
| 323 | -32 | 3 | 4 | 1.5 |
| 343 | -34 | 3 | 4 | 1.5 |

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Mechanical Configuration



| ELECTRICAL CONNECTIONS | |
|------------------------|-----------|
| Case | V_{IN} |
| Pin 1 | Ground |
| Pin 2 | V_{OUT} |

Figure 1, Power Derating

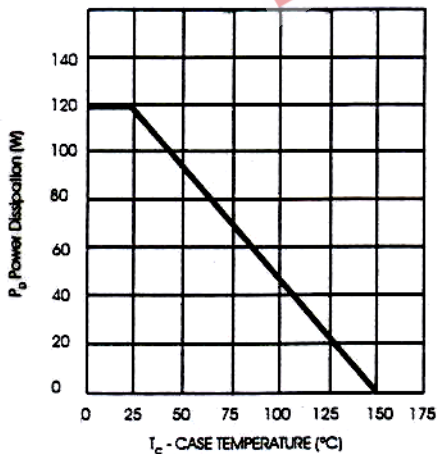
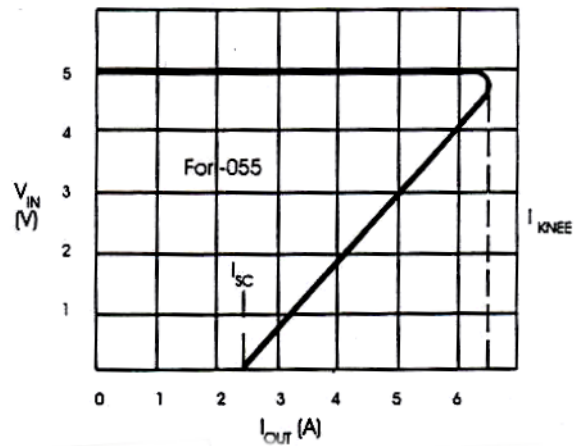


Figure 2, Typical Output Characteristics



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