

**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  $-34\text{ V}$
- 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  $-5\text{ V}$  through  $-34\text{ V}$ . 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  $2.0\text{ }\mu\text{F}$  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 @ $25^{\circ}\text{C}$ Case Temperature	120W
Operating Temperature	$-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
Storage Temperature	$-65^{\circ}\text{C}$ to $+150^{\circ}\text{C}$
Input Voltage - $V_{IN}$	$-40\text{ V}$

NOTE: Lead Temperature (Soldering, 10 sec.)  $300^{\circ}\text{C}$

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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 $V_{IN} - V_{OUT}$	$\Delta V$	$I_{OUT} = I_{MAX}$	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	$\theta_{JC}$			1		$^\circ C/W$
Long Term Stability				0.1		%/1000 hrs

Note 1: Case temperature  $25^\circ C$  unless otherwise specified.

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

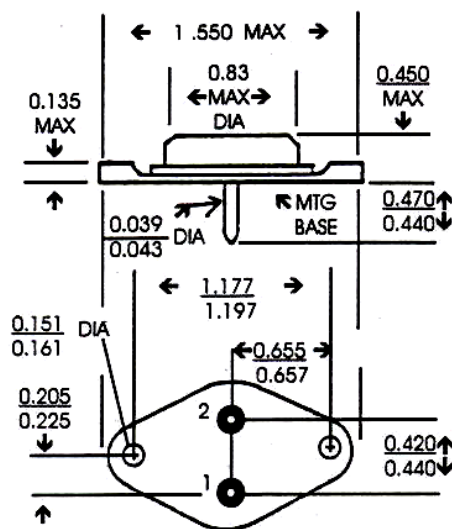
Note 3: Instantaneous regulation, average chip temperature changes must be accounted for separately.

## 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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## NEGATIVE VOLTAGE REGULATORS



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

Figure 1, Power Derating

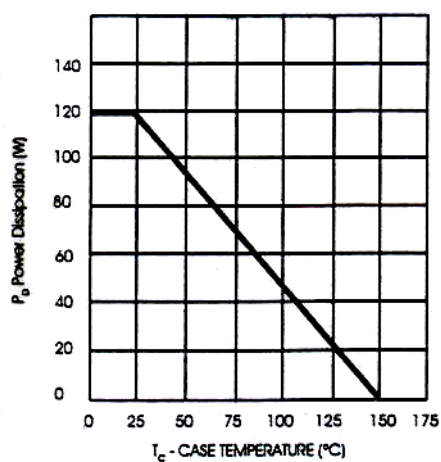
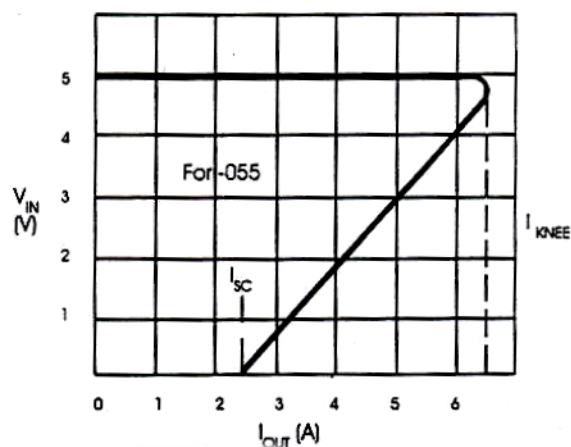


Figure 2, Typical Output Characteristics



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