

42117

NEGATIVE HIGH TEMPERATURE FIXED VOLTAGE REGULATOR

Designed to use in high temperature environments

Mii

HYBRID MICROELECTRONICS
PRODUCTS DIVISION

Features:

- Operating temperature +200°C
- Output current to 1.0 A
- Output voltage to -30 V
- Internal short circuit protection, foldback and current limiting
- Isolated TO-258 package

Applications:

- Down hole
- Harsh environment application

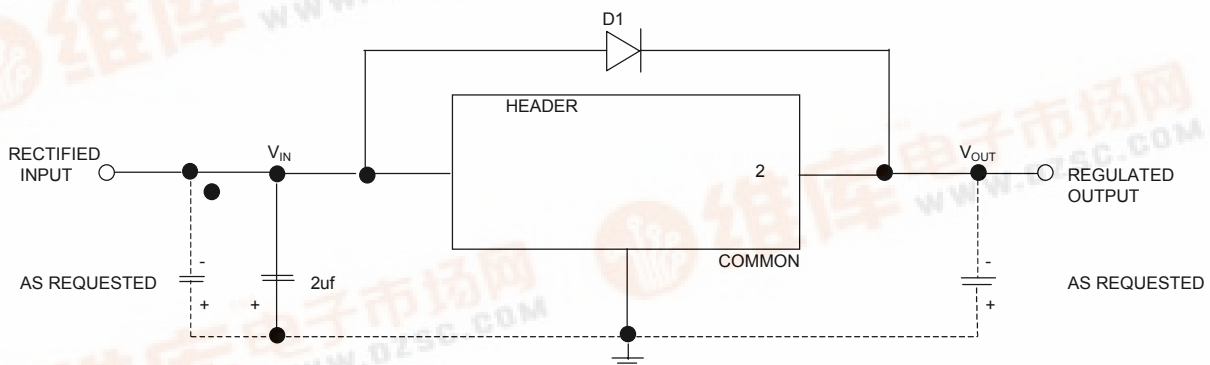
DESCRIPTION

The 42117 series of fixed voltage regulators covers the output voltage range from -5 VDC through -30 VDC. These voltage regulators are fabricated using hybrid techniques and will operate at case temperatures up to +200°C. These devices are complete with internal short circuit protection which includes voltage shutdown and current foldback. The 42117 series voltage regulators normally do not require any additional components. However, for good design practice, an external filter cap of 2μF 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})	1.0 A
Input Voltage (V_{IN})	-38 VDC
Storage Temperature (T_{STG})	+250°C
Power Dissipation P_d	8 W

Typical Connection Diagram



Note: D1 should be installed for input safety

NEGATIVE HIGH TEMPERATURE, FIXED VOLTAGE REGULATOR**ELECTRICAL CHARACTERISTICS**

PARAMETER	TEST CONDITIONS	TEMPERATURE	TYPICAL
*Output Voltage Note 1	$I_{OUT} = 1.0 \text{ A}$ $V_{IN} = V_{OUT} + 3 \text{ VDC}$	+25°C to +200°C	$V_{OUT} \pm 1.0\%$
*Line Regulation Note 2	$V_{IN} = V_{OUT} - 3 \text{ VDC}$ to -38 VDC $I_{OUT} = 50 \text{ mA}$	+25°C to +200°C	$V_{OUT} \pm 0.5\%$
Load Regulation	$V_{IN} = V_{OUT} - 5 \text{ VDC}$ $I_{OUT} = 0.05 \text{ to } 1.0 \text{ A}$	+25°C to +200°C	$V_{OUT} \pm 0.5\%$ at 25°C $\pm 1.0\%$ at 200°C
Ripple Rejection at 120 Hz	$V_{IN} = V_{OUT} - 5 \text{ VDC}$ $I_L = 300 \text{ mA}$	+25°C	-50 dB
Standby Current	$V_{IN} = V_{OUT} - 5 \text{ VDC}$ $I_{OUT} = 0$	+25°C	30 mA
Short Circuit Current	$V_{IN} = V_{OUT} - 5 \text{ VDC}$	+25°C	400 mA
Short Circuit Current	$V_{IN} = V_{OUT} - 5 \text{ VDC}$	+200°C	200 mA
Foldback Current (knee)	$V_{IN} = V_{OUT} - 5 \text{ VDC}$	+25°C	2 A
Foldback Current (knee)	$V_{IN} = V_{OUT} - 5 \text{ VDC}$	+200°C	1.5 A
Noise Output	$V_{IN} = V_{OUT} - 5 \text{ VDC}$ $I_{OUT} = 300 \text{ mA}$	+25°C	2 mVRMS
Differential Voltage * ($\Delta V = V_{IN} - V_{OUT}$)	$I_{OUT} = 300 \text{ mA}$	+25°C to +200°C	3 VDC MIN

Note 1. V_{OUT} for 5 volt $\pm 2\%$ Note 2. Line regulation for 5 volt devices $\pm 1\%$ * $V_{IN} = -10 \text{ V Min}$ **TABLE 1 (see note)**

TYPE	$V_{OUT} \text{ VDC}$	$MAX I_{OUT} \text{ A}$	TYP I_{KNEE} (A at 25°C)
42117-005	-5	1.0	2.0
42117-012	-12	1.0	2.0
42117-015	-15	1.0	2.0
42117-018	-18	1.0	2.0
42117-024	-24	1.0	2.0
42117-030	-30	1.0	2.0

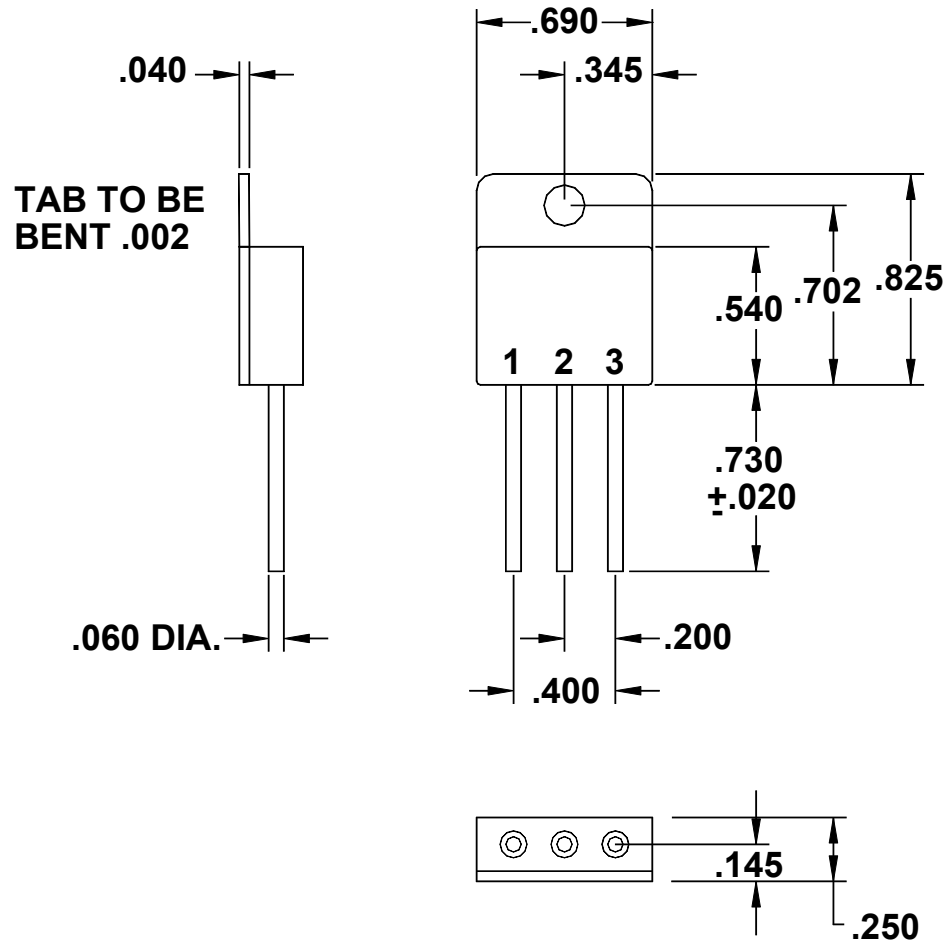
NOTE: Under condition ($V_{IN} - V_{OUT}$) $\times I_{OUT} \leq 8 \text{ watts}$ at 200°C

Option: 1) Other output voltage available
2) MIL-STD-883 type screening available

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Mechanical Configuration



Pin	Function
1	V _{OUT}
2	Common
3	V _{IN}

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