

42050

POSITIVE VOLTAGE REGULATORS
Commercial or Military

Mii
MICROCIRCUITS DIVISION

Features:

- Output Current To 10 Amps
- Output Voltage To 34 V
- Internal Short Circuit Protection
- Custom Output Voltages available

Applications:

- Designed for use in general purpose applications.
- Military And Hi Rel Industrial Applications Where Hermetically Sealed Product Is Required

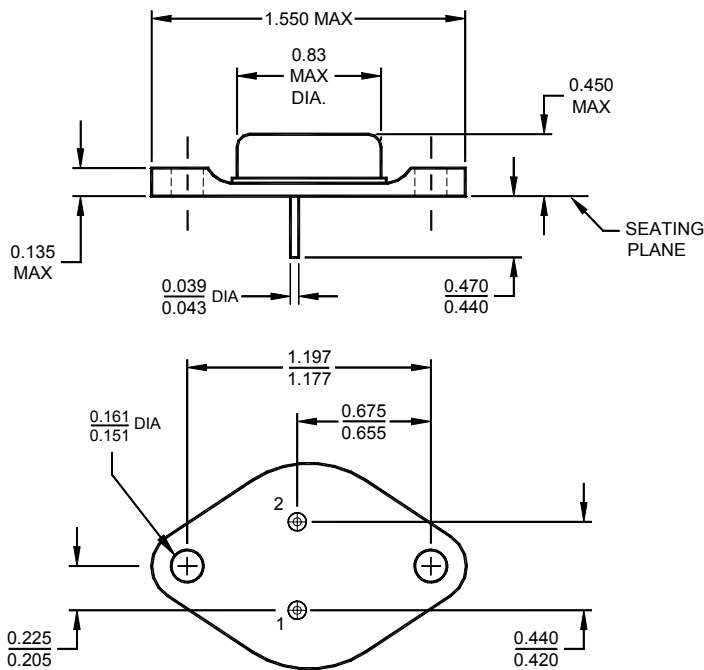
DESCRIPTION

The 42050 series of regulators covers the output voltage range from 5 VDC through 34 VDC. These regulators are fabricated using hybrid techniques. The devices are complete with internal short circuit protection, which includes voltage shutdown and current fold back. The 42050 series regulators are complete and normally do not require any additional components. However, if the regulator is far from the power source a .2 μ f capacitor on the input is suggested.

ABSOLUTE MAXIMUM RATINGS

| | |
|---------------------------------------------------------|------------------|
| Output Current - I_{OUT} | 10 A |
| Power Dissipation @ 25°C Case Temperature - P_D | 120 W |
| Input Voltage - V_{IN} | 40 V |
| Operating Temperature | -55°C to +125°C |
| Storage Temperature | -65°C to + 150°C |

Mechanical Configuration



| PIN | FUNCTION |
|------|-----------|
| 1 | GROUND |
| 2 | V_{OUT} |
| CASE | V_{IN} |

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ELECTRICAL CHARACTERISTICS (Note 1)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------------|---------------|-------------------------------------------------------------------|------------------|-----------|------------------|---------------|
| Output Voltage | V_{OUT} | $I_{OUT} = 1A, V_{IN} - V_O = 5V$ | $V_{OUT} - 0.1V$ | V_{OUT} | $V_{OUT} + 0.1V$ | VDC |
| Differential Voltage $V_{IN} - V_{OUT}$ | ΔV | $I_{OUT} = I_{MAX}$ | 5 | | | VDC |
| Line Regulation (Note 3) | | $V_{IN} - V_O = 5V$ to $V_{IN} = 40V$ $I_{OUT} = .5A$ | | | 0.1 | % V_{OUT} |
| Load Regulation (Note 2) | | $I_{OUT} = .5A$ to $I_{OUT} = I_{MAX}$ $V_{IN} = V_{OUT} + 5V$ | | | 40 | mV |
| Ripple Rejection | | $f = 50$ to 500 Hz 1.0Vpp $V_{IN} - V_O = 5V$ | 60 | | | dB |
| Temperature Coefficient | TC | $0^\circ C \leq T_C \leq 100^\circ C$ | | .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.

42050 HYBRID VOLTAGE REGULATOR DEVICES Standards Available

| TYPE | V_{OUT} (VDC) | MAX I_{OUT} (A) | I_{KNEE} TYP(A) | I_{SC} TYP(A) |
|-------------|-----------------|-------------------|-------------------|-----------------|
| 42050 - 055 | 5 | 5 | 6.5 | 2.5 |
| 510 | 5 | 10 | 13 | 3.5 |
| 610 | 6 | 10 | 13 | 3.5 |
| 710 | 7 | 10 | 13 | 3.5 |
| 810 | 8 | 10 | 13 | 3.5 |
| 910 | 9 | 10 | 13 | 3.5 |
| 109 | 10 | 9 | 13 | 3.5 |
| 128 | 12 | 8 | 10 | 3 |
| 148 | 14 | 8 | 10 | 3 |
| 158 | 15 | 8 | 10 | 3 |
| 168 | 16 | 8 | 10 | 3 |
| 188 | 18 | 8 | 10 | 3 |
| 208 | 20 | 8 | 10 | 3 |
| 224 | 22 | 4 | 5.5 | 2 |
| 244 | 24 | 4 | 5.5 | 2 |
| 264 | 26 | 4 | 5.5 | 2 |
| 284 | 28 | 4 | 5.5 | 2 |
| 304 | 30 | 4 | 5.5 | 2 |
| 324 | 32 | 4 | 5.5 | 2 |
| 344 | 34 | 4 | 5.5 | 2 |

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Figure 1. Power Derating

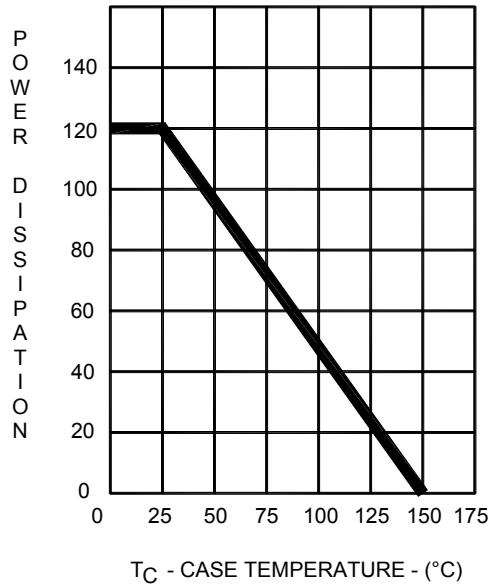
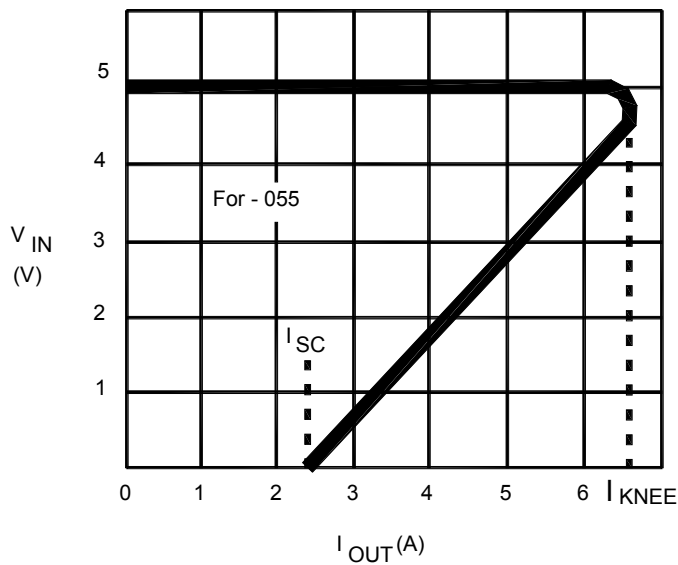


Figure 2. Typical Output Characteristics



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