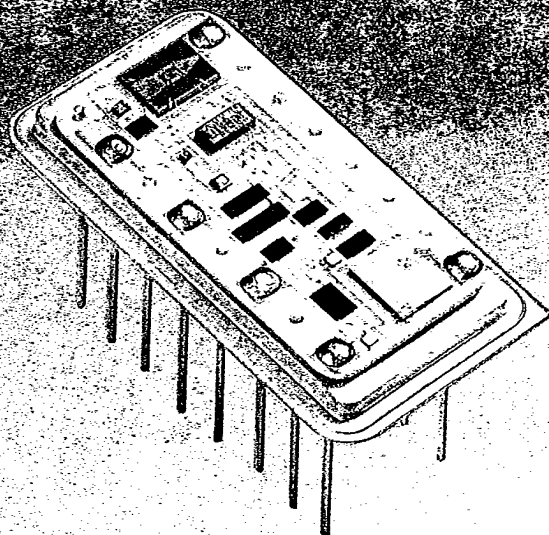


White Technology, Inc.

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HYBRID VOLTAGE REGULATORS SERIES 8000 AND 8001



FEATURES

- Provides $\pm 1\%$ Temperature Stability from -55°C to $+200^{\circ}\text{C}$
- Dissipates up to 1 Watt at $+200^{\circ}\text{C}$ in Still Air Without Heatsink
- Withstands Short Circuit Load at Any Temperature Indefinitely
- Has Provisions For External Pass Device to Boost Output Capability
- Withstands Severe Mechanical and Thermal Shock
- Internally Compensated, Does Not Require By-pass Capacitors
- Withstands Momentary Voltage Surges up to 100 Volts

DESCRIPTION

The 8000 and 8001 Series Hybrid Voltage Regulators are designed to operate over very wide temperature ranges. They can regulate voltages from 5V to 24V with $\pm 1\%$ stability. Although designed at a fixed voltage, the regulators operation can be enhanced by using external circuitry as illustrated in Figures 5, 6, 7, and Fig. 8 for 50mA operation.

To insure performance results, 100% screening procedures are utilized. The 8000 and 8001 are constructed in rugged 16-pin dual in line packages.

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HYBRID VOLTAGE REGULATORS—SERIES 8000 & 8001**WE CAN PROVIDE ANY VOLTAGE BETWEEN 5-24V****ABSOLUTE MAXIMUM RATINGS**

Input Voltage/Output Voltage: 45 Volts

Power Dissipation: 1 Watt @ $T_{CASE} < 240^{\circ}\text{C}$ Operating Case Temperature: -55°C to $+240^{\circ}\text{C}$

Absolute Maximum Input Voltage: 100 Volts

POSITIVE REGULATORS 8000-XX

MODEL NO.	REGULATED VOLTAGE	INPUT VOLTAGE RANGE	OUTPUT CURRENT AT 200°C $\Delta V = 10\text{V}$
8000-5	+5.0V	12V to 55V	50mA
8000-6	+6.0V	13V to 56V	50mA
8000-8	+8.0V	15V to 58V	50mA
8000-12	+12V	19V to 62V	50mA
8000-15	+15V	22V to 65V	50mA
8000-18	+18V	25V to 68V	50mA
8000-24	+24V	31V to 74V	50mA

NEGATIVE REGULATORS 8001-XX

MODEL NO.	REGULATED VOLTAGE	INPUT VOLTAGE RANGE	OUTPUT CURRENT AT 200°C $\Delta V = 10\text{V}$
8001-5	- 5.0V	12V to 55V	50mA
8001-6	- 6.0V	13V to 56V	50mA
8001-8	- 8.0V	15V to 58V	50mA
8001-12	- 12V	19V to 62V	50mA
8001-15	- 15V	22V to 65V	50mA
8001-18	- 18V	25V to 68V	50mA
8001-24	- 24V	31V to 74V	50mA

ELECTRICAL CHARACTERISTICS

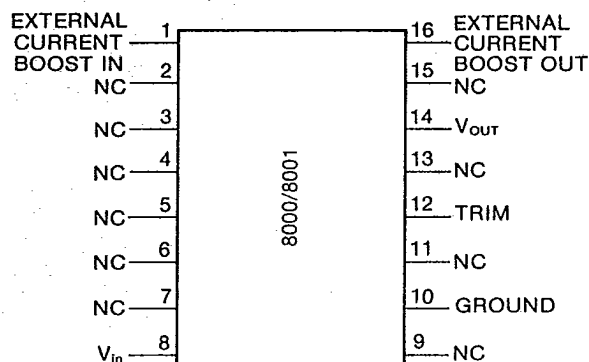
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$T_A = 25^{\circ}\text{C}$ No Load $V_{OUT} - V_{IN} = 8.0\text{V}$	- 1		+1	% of Initial
Output Voltage Temp Coefficient	$P_D = 1$ Watt $T_A = 25^{\circ}\text{C}$ to 200°C		± 20	± 30	mV
Line Regulation	$T_A = 25^{\circ}\text{C}$ to 200°C $8.0\text{V} \leq V_{IN} - V_{OUT} < 45\text{V}$		± 20	± 100	mV
Load Regulation	$T_A = 25^{\circ}\text{C}$ to 200°C $10\text{mA} \leq I_{OUT} \leq I_{MAX}$ $P_D \leq 1$ Watt	- 1		+1	% of Initial
Quiescent Current	$8.0\text{V} \leq V_{IN} - V_{OUT} \leq 45\text{V}$		9.0	11	mA

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HYBRID VOLTAGE REGULATORS—SERIES 8000 & 8001

PIN DESCRIPTION



CASE OUTLINE

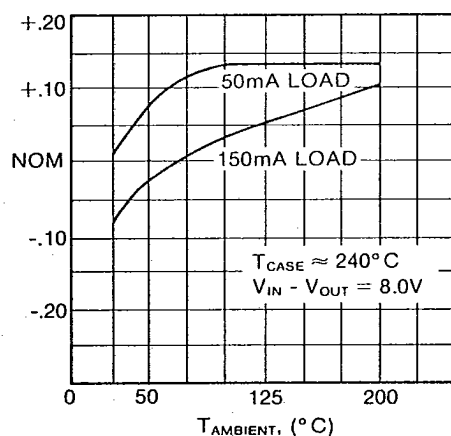
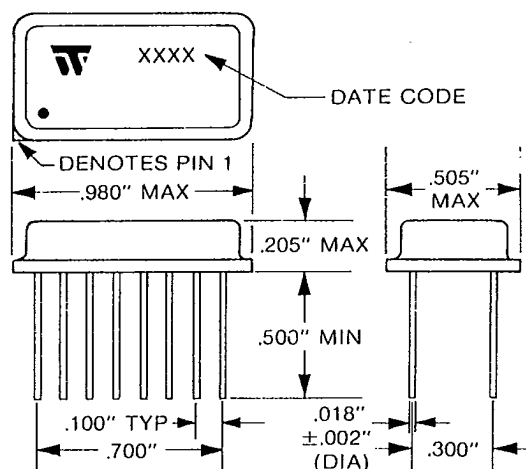


FIGURE 1—Output Voltage

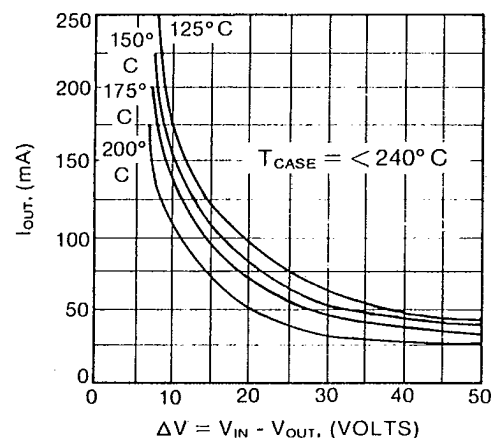


FIGURE 2—Output Current Capability

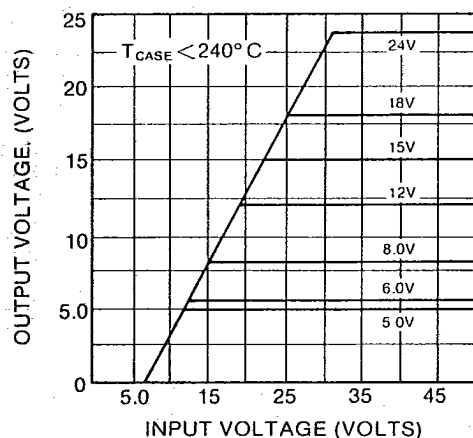


FIGURE 3—Dropout Characteristics

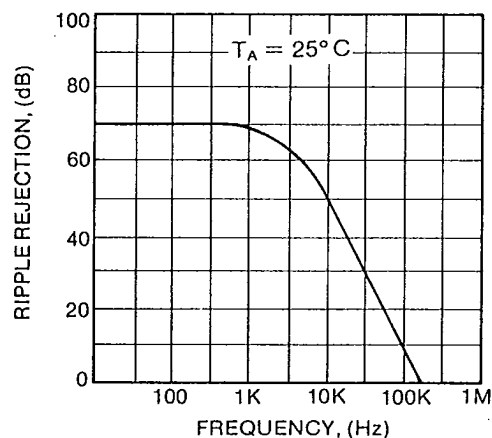


FIGURE 4—Ripple Rejection

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Product Warranty: Complete warranty statement available upon request

HYBRID VOLTAGE REGULATORS—SERIES 8000 & 8001

EXTERNAL CURRENT & VOLTAGE LIMIT ADJUSTMENT

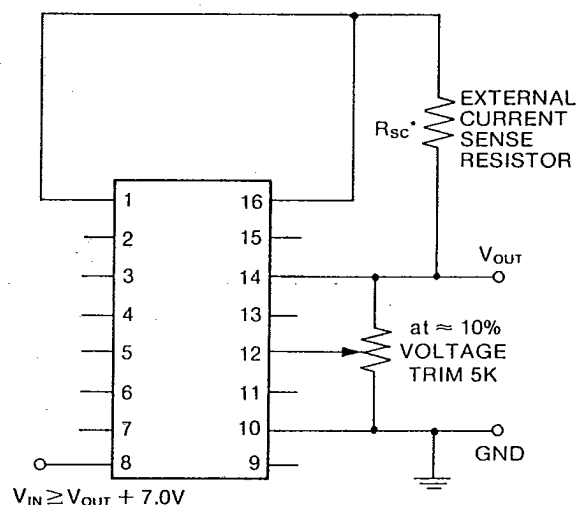


FIGURE 5

VMOS FET BOOSTER

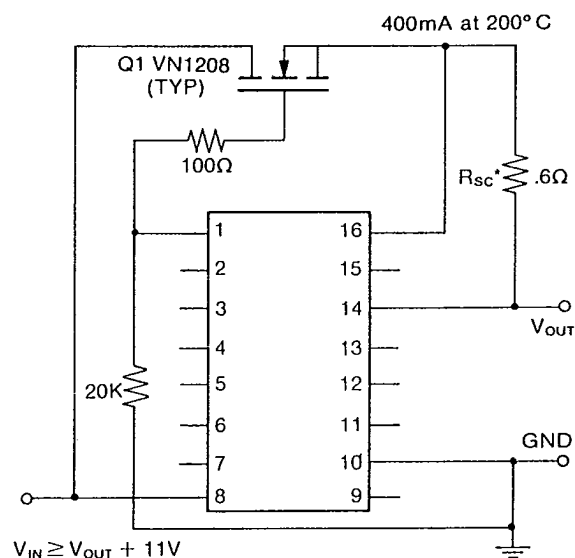


FIGURE 6

NPN BOOSTER

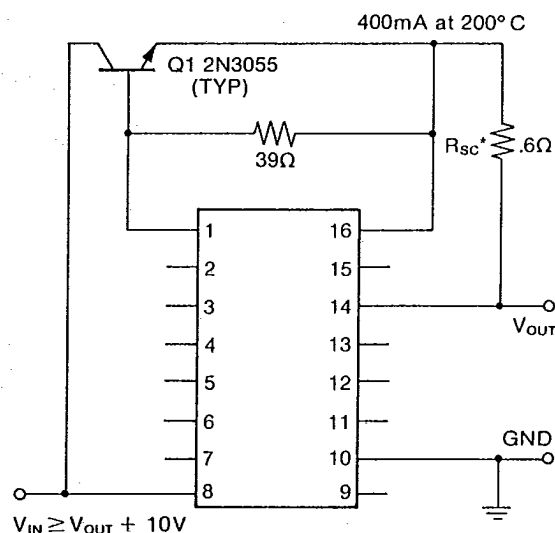


FIGURE 7

MINIMUM CONFIGURATION 50mA OPERATION

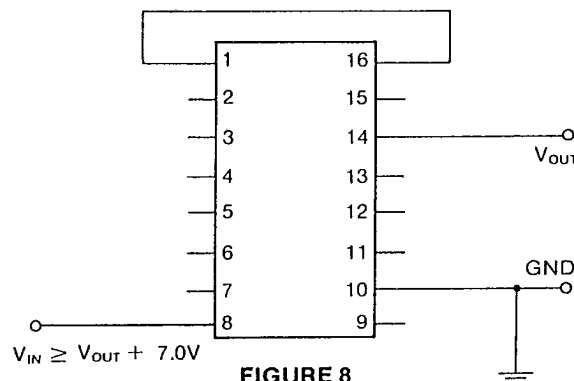


FIGURE 8

I = OUTPUT CURRENT

T = TEMPERATURE OF OPERATION

$$R_{sc} = \frac{3.5 \times \left\{ \frac{(.672) - [(T-25) \times (.0023)]}{I} \right\}}{3.5 - \left\{ \frac{(.672) - [(T-25) \times (.0023)]}{I} \right\}}$$

FIGURE 9

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