

## SH1705

## 5 VOLT, 5 AMP REGULATOR WITH BRIDGE

FAIRCHILD HYBRID PRODUCTS

**GENERAL DESCRIPTION** — The SH1705 is a 5 V, 5 A regulator with a 5 A diode bridge rectifier contained in the same TO-3 package. With the addition of a power transformer, a filter capacitor and a small bypass capacitor, the SH1705 forms a complete power supply. The regulator section is identical with the  $\mu$ A78H05A and may be used separately from the rectifier.

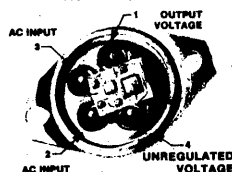
- BUILT IN RECTIFIER BRIDGE
- 5 A OUTPUT CURRENT
- INTERNAL CURRENT AND THERMAL LIMITING
- LOW DROPOUT VOLTAGE
- 50 W POWER DISSIPATION
- HERMETICALLY SEALED

## ABSOLUTE MAXIMUM RATINGS

|                                                        |                     |
|--------------------------------------------------------|---------------------|
| Input Voltage                                          | 23 V <sub>RMS</sub> |
| Internal Power Dissipation (25°C Case)                 | 50 W                |
| Regulator Section Input To Output Differential Voltage | 25 V <sub>OC</sub>  |
| Input Current Peak-Cycle                               | 20 A                |
| Input Current Repetitive                               | 14 A                |
| Operating Junction Temp. Range                         | 0 to 150°C          |
| Storage Temperature Range                              | -65 to +150°C       |
| Lead Solder Temperature (10 s)                         | 300°C               |

## - CONNECTION DIAGRAM

TO-3 PACKAGE  
(TOP VIEW)  
PACKAGE CODE K



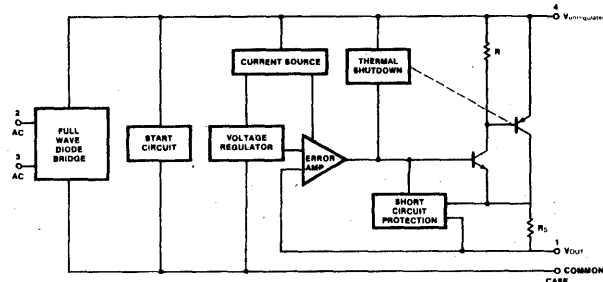
## PIN FUNCTION

| PIN  | FUNCTION       |
|------|----------------|
| 1    | Output Voltage |
| 2    | AC Input       |
| 3    | AC Input       |
| 4    | Unregulated    |
| Case | Ground         |

## ORDER INFORMATION

| Output Voltage | Temp. Range   | Order Code |
|----------------|---------------|------------|
| 5 V            | 0°C to +150°C | SH1705     |

## BLOCK DIAGRAM

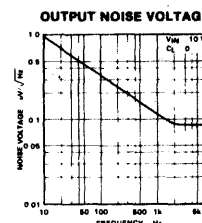
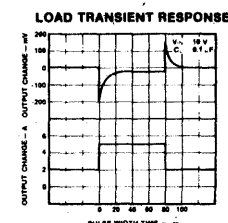
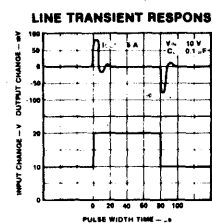
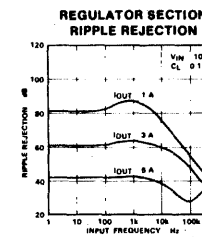
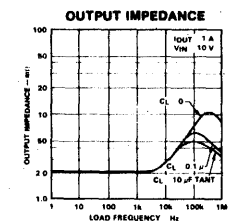
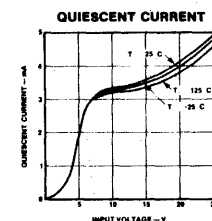
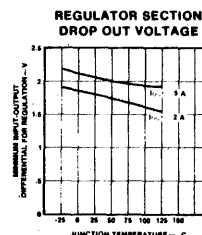
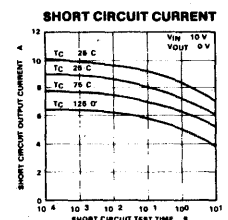
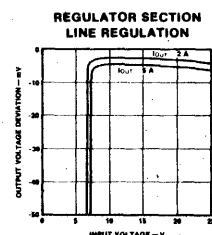
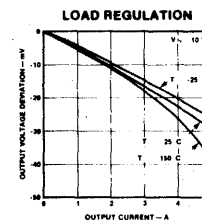
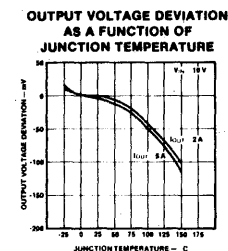
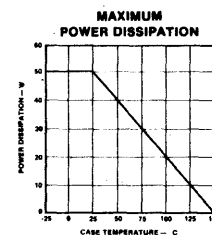


**ELECTRICAL CHARACTERISTICS:** Filt. Cap. = 6000  $\mu$ F,  $V_{IN}$  = 12 V<sub>RMS</sub>,  $C_{OUT}$  = 0.2  $\mu$ F, 25°C,  $I_{OUT}$  = 2 A unless otherwise specified.

| SYMBOL           | CHARACTERISTICS       | CONDITIONS                                           | MIN  | TYP | MAX | UNITS            |
|------------------|-----------------------|------------------------------------------------------|------|-----|-----|------------------|
| $V_{OUT}$        | Output Voltage        | $I_{OUT} = 2$ A                                      | 4.8  | 5.0 | 5.2 | V                |
| $\Delta V_{OUT}$ | Line Regulation       | $V_{IN}$ 8.6 V <sub>RMS</sub> to 23 V <sub>RMS</sub> |      | 10  | 30  | mV               |
| $\Delta V_{OUT}$ | Load Regulation       | 10 mA $\leq I_{OUT} \leq 5$ A                        |      | 10  | 50  | mV               |
|                  | Input Voltage         | $I_{OUT} = 0$ to 3 A                                 | 8.6  |     | 23  | V <sub>RMS</sub> |
|                  |                       | $I_{OUT} = 3$ to 5 A                                 | 11.4 |     | 15  | V <sub>RMS</sub> |
| $I_Q$            | Quiescent Current     | $I_{OUT} = 0$                                        |      | 3   | 10  | mA               |
| $R_R$            | Ripple Rejection      | 60 Hz Line                                           | 60   |     |     | db               |
| $I_{OS}$         | Short Circuit Current |                                                      |      | 7   |     | A                |
|                  | Droput Voltage        | $I_{OUT} = 5.0$ A - Note 1                           |      | 2.0 |     | V                |
|                  |                       | $I_{OUT} = 3$ A - Note 1                             |      | 1.8 |     | V                |

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## TYPICAL PERFORMANCE CHARACTERISTICS



LINEAR

Fairchild