

HYBRID VOLTAGE REGULATORS

CJSE001 CJSE002 CJSE003 CJSE004 CJSE005 CJSE006

FIXED OUTPUT HYBRID VOLTAGE REGULATORS

± 15V

3 AMPERES

FEATURES

POSITIVE, NEGATIVE SUPPLY OPERATION
 3A CURRENT RATING
 50V LINE VOLTAGE CAPABILITY
 LINE AND LOAD REGULATION $\leq \pm 0.5\%$
 THREE-TERMINAL SIMPLICITY

APPLICATIONS

- DC MOTOR SUPPLIES
- MEDICAL ELECTRONICS
- INDUSTRIAL CONTROLS
- DISTRIBUTED POWER SYSTEMS
- MILITARY EQUIPMENT, SPACE AND TELECOMMUNICATIONS
- COMPUTERS
- INSTRUMENTATION
- DATA TERMINALS



TO-3 (2 PINS)

MAXIMUM RATINGS

| | | CJSE001 CJSE004 | CJSE002 CJSE005 | CJSE003 CJSE006 |
|-----------------|--------------------------------------|--------------------|--------------------|--------------------|
| $ \pm V_{in} $ | INPUT VOLTAGE | 50 V | | |
| I_{opk} | PEAK LOAD CURRENT | 3 A | | |
| T_A | OPERATING TEMPERATURE | -55°C to +150°C | | |
| T_{stg} | STORAGE TEMPERATURE | -55°C to +150°C | | |
| $R_{\theta JC}$ | THERMAL RESISTANCE, JUNCTION TO CASE | 1.67°C/W | | |
| P_D | POWER DISSIPATION (25°C) | 90 W | | |

| 15 V REGULATORS | CJSE | 001 | 002 | 003 | 004 | 005 | 006 |
|---------------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|
| Regulation, Line and Load | $T_C = 25^\circ\text{C}$ | +15 ± .5% | -15 ± .5% | +15 ± .5% | -15 ± .5% | +15 ± .5% | -15 ± .5% |
| | $-55^\circ\text{C} \leq T_A \leq +125^\circ\text{C}$ | ± 3% | ± 3% | ± 2% | ± 2% | ± 1% | ± 1% |

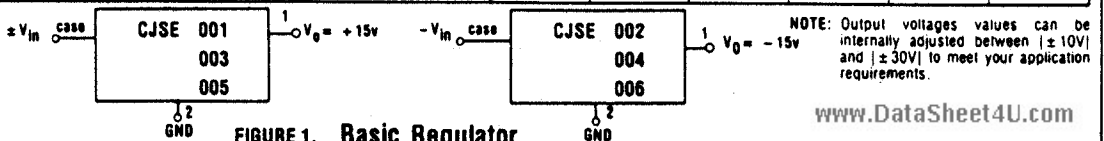


FIGURE 1. Basic Regulator

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ELECTRICAL CHARACTERISTICS

($I \pm V_{in} = 25 \text{ Vdc}$, $I \pm I_o = 2\text{A}$, $R_{sc} = .4\Omega$, $T_c = +25^\circ\text{C}$ unless otherwise noted)

| CHARACTERISTICS | | SYMBOL | MIN. | MAX. | UNITS |
|--|-----------------|-----------------------------------|-------|-------------|---------------------|
| INPUT VOLTAGE | | $I \pm V_{in}$ | 20 | 50 | V |
| OUTPUT VOLTAGE RANGE | | $I \pm V_o$ | 14.85 | 15.15 | V |
| OUTPUT VOLTAGE RANGE ($-55^\circ\text{C} \leq T_A \leq +125^\circ\text{C}$) | CJSE001 CJSE002 | $I \pm V_o$ | 14.55 | 15.45 | V |
| | CJSE003 CJSE004 | | 14.70 | 15.30 | V |
| | CJSE005 CJSE006 | | 14.85 | 15.15 | V |
| | | | | | |
| INPUT-OUTPUT VOLTAGE DIFF. | | $I \pm \Delta V$ | 5.0 | | V |
| STANDBY CURRENT | | I_{in}^{IC} | | 50 | mA |
| SHORT CIRCUIT CURRENT ($V_o = 0\text{V}$) | | I_{sc} | | 500 | mA |
| RIPPLE ATTENUATION ($I \pm V_{in} = 25\text{V}$, $I_o = 1.0\text{A}$, $f = 120\text{Hz}$) | | | 60 | | dB |
| TEMPERATURE COEFFICIENT ($-55^\circ\text{C} \leq T_A \leq +125^\circ\text{C}$) | CJSE001 CJSE002 | $\frac{\Delta V_o}{V_o \Delta T}$ | | | |
| | CJSE003 CJSE004 | | | ± 0.020 | %/ $^\circ\text{C}$ |
| | CJSE005 CJSE006 | | | ± 0.010 | %/ $^\circ\text{C}$ |
| | | | | ± 0.005 | %/ $^\circ\text{C}$ |

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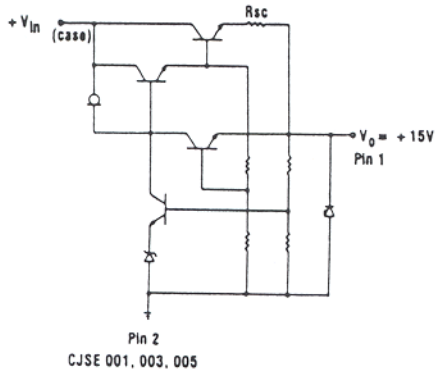


FIGURE 2

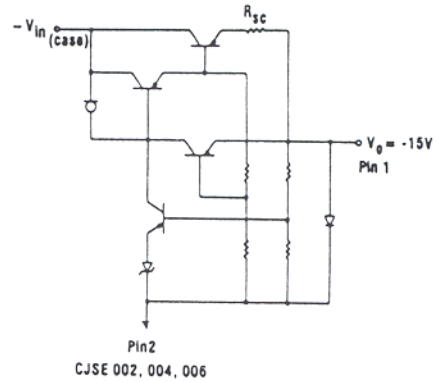


FIGURE 3

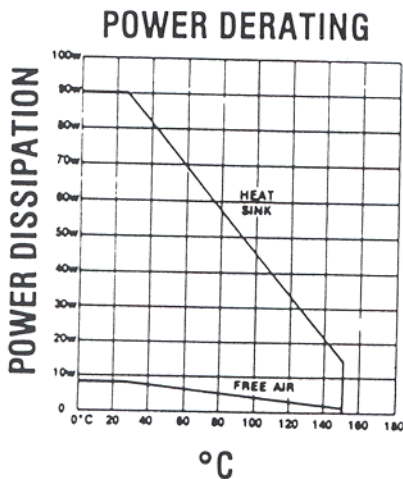


FIGURE 4

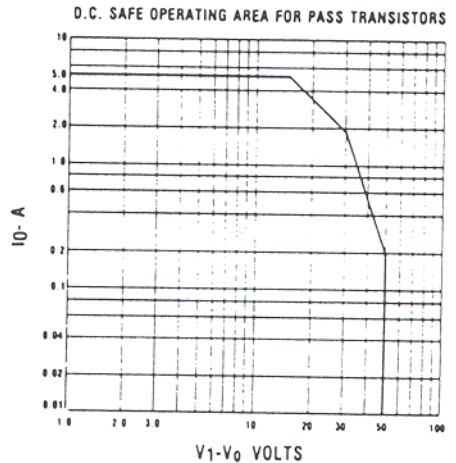


FIGURE 5

NOTES:

- Regulators incorporate a FET constant current source, which provides current mode regulation. A minimum input-output voltage differential of 5 volts is recommended to bias the FET into its constant current region. At lower voltages the FET becomes resistive, and regulation reverts to the basic mode.
- Foldback current limiting is accomplished in the regulators as shown in Fig. 6.
- Output current and power capability may be increased by driving one or more external power transistors. Maintain safe operating conditions for both regulator and the external transistor.

