

HYBRID VOLTAGE REGULATORS

CJSE009 CJSE010 CJSE011 CJSE012 CJSE013 CJSE014

www.DataSheet4U.com

FIXED OUTPUT HYBRID VOLTAGE REGULATORS
± 20V

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

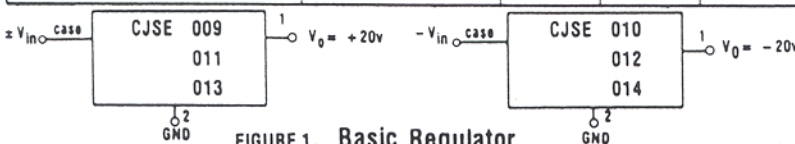


TO-3 (2 PINS)

MAXIMUM RATINGS

| | | CJSE009 CJSE012 | CJSE010 CJSE013 | CJSE011 CJSE014 |
|------------------|--------------------------------------|--------------------|--------------------|--------------------|
| $ \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 | | |

| 20 V REGULATORS | CJSE | 009 | 010 | 011 | 012 | 013 | 014 |
|---------------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|
| Regulation, Line and Load | $T_C = 25^\circ\text{C}$ | +20 ± .5% | -20 ± .5% | +20 ± .5% | -20 ± .5% | +20 ± .5% | -25 ± .5% |
| | $-55^\circ\text{C} \leq T_A \leq +125^\circ\text{C}$ | ± 3% | ± 3% | ± 2% | ± 2% | ± 1% | ± 1% |



NOTE: Output voltages values can be internally adjusted between $\pm 10\text{V}$ and $\pm 30\text{V}$ to meet your application requirements.

FIGURE 1. Basic Regulator



PRODUCT SPECIFICATION

HYBRID VOLTAGE REGULATORS

CJSE009 CJSE010 CJSE011 CJSE012 CJSE013 CJSE014

ELECTRICAL CHARACTERISTICS

($I_{in} = 30$ Vdc, $I_o = 2A$, $R_{sc} = .4\Omega$, $T_c = +25^\circ C$ unless otherwise noted)

| CHARACTERISTICS | SYMBOL | MIN. | MAX. | UNITS |
|---|-----------------------------------|------|-------------|---------------|
| INPUT VOLTAGE | $ \pm V_{in} $ | 25 | 50 | v |
| OUTPUT VOLTAGE RANGE | $ \pm V_o $ | 19.8 | 20.2 | v |
| OUTPUT VOLTAGE RANGE ($-55^\circ C \leq T_A \leq +125^\circ C$) | $ \pm V_o $ | | | |
| CJSE009 CJSE010 | | 19.4 | 20.6 | v |
| CJSE011 CJSE012 | | 19.6 | 20.4 | v |
| CJSE013 CJSE014 | | 19.8 | 20.2 | v |
| INPUT-OUTPUT VOLTAGE DIFF. | $ \pm \Delta V $ | 5.0 | | v |
| STANDBY CURRENT | $I_{in} - I_o$ | | 50 | mA |
| SHORT CIRCUIT CURRENT ($V_o = 0V$) | I_{sc} | | 500 | mA |
| RIPPLE ATTENUATION ($ \pm V_{in} = 30V$, $I_o = 1.0A$, $f = 120Hz$) | | 60 | | db |
| TEMPERATURE COEFFICIENT ($-55^\circ C \leq T_A \leq +125^\circ C$) | $\frac{\Delta V_o}{V_o \Delta T}$ | | | |
| CJSE009 CJSE010 | | | ± 0.020 | %/ $^\circ C$ |
| CJSE011 CJSE012 | | | ± 0.010 | %/ $^\circ C$ |
| CJSE013 CJSE014 | | | ± 0.005 | %/ $^\circ C$ |

www.DataSheet4U.com

HYBRID VOLTAGE REGULATORS
CJSE009 CJSE010 CJSE011 CJSE012 CJSE013 CJSE014

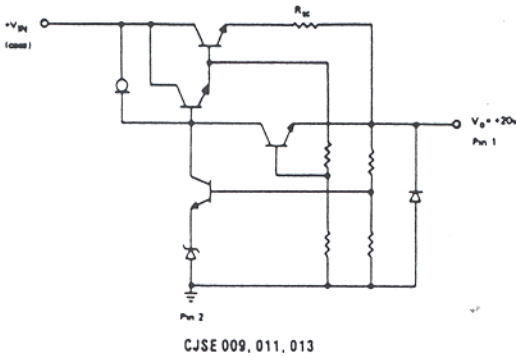


FIGURE 2

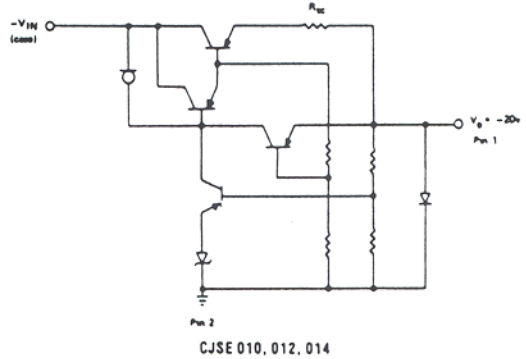


FIGURE 3

POWER DERATING

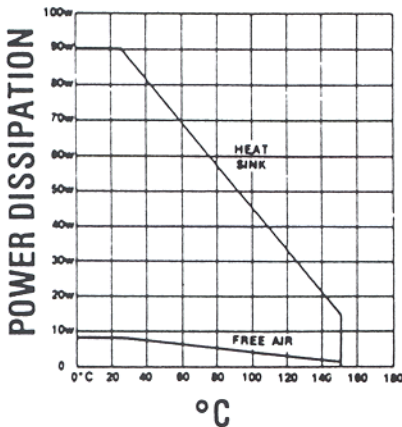


FIGURE 4

D.C. SAFE OPERATING AREA FOR PASS TRANSISTORS

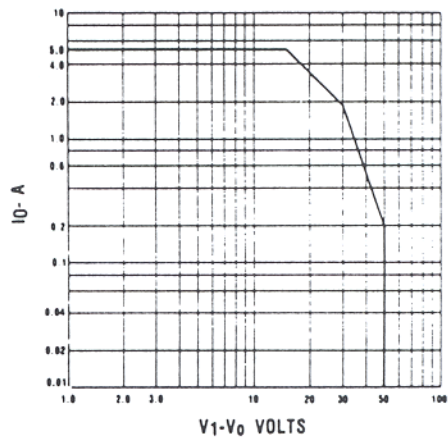


FIGURE 5

NOTES:

1. 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.
2. Foldback current limiting is accomplished in the regulators as shown in Fig. 6.
3. 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.

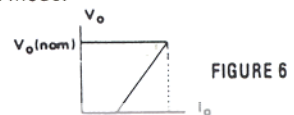


FIGURE 6