

FIXED OUTPUT HYBRID VOLTAGE REGULATORS

± 20V

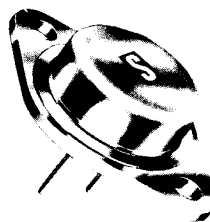
3 AMPERES

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	$T_C = 25^\circ\text{C}$	$+20 \pm .5\%$	$-20 \pm .5\%$	$+20 \pm .5\%$	$-20 \pm .5\%$	$+20 \pm .5\%$	$-25 \pm .5\%$
	$-55^\circ\text{C} \leq T_A \leq +125^\circ\text{C}$	$\pm 3\%$	$\pm 3\%$	$\pm 2\%$	$\pm 2\%$	$\pm 1\%$	$\pm 1\%$

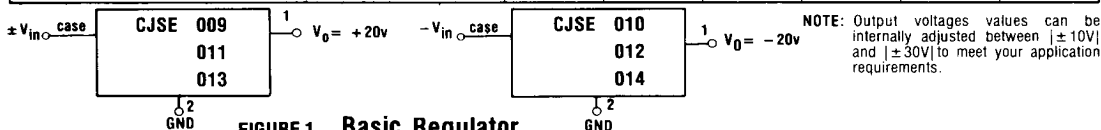


FIGURE 1. Basic Regulator

HYBRID VOLTAGE REGULATORS

CJSE009 CJSE010 CJSE011 CJSE012 CJSE013 CJSE014

ELECTRICAL CHARACTERISTICS

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

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

HYBRID VOLTAGE REGULATORS

CJSE009 CJSE010 CJSE011 CJSE012 CJSE013 CJSE014

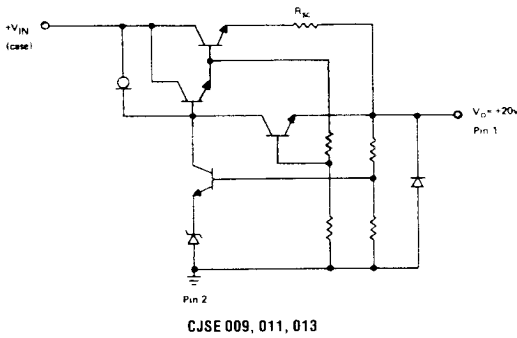


FIGURE 2

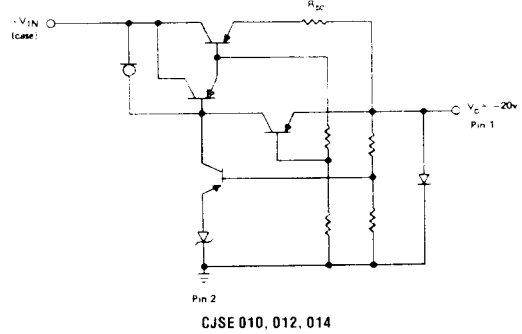


FIGURE 3

POWER DERATING

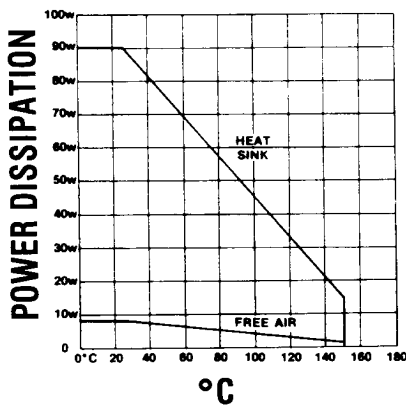


FIGURE 4

D.C. SAFE OPERATING AREA FOR PASS TRANSISTORS

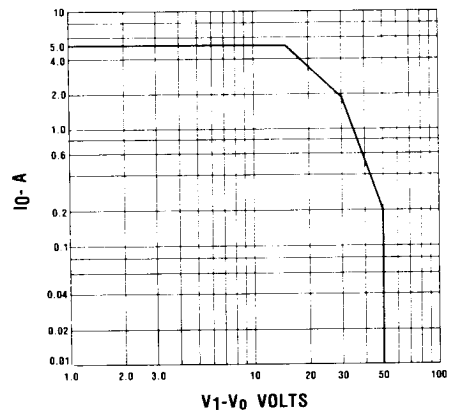


FIGURE 5

NOTES:

- 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.

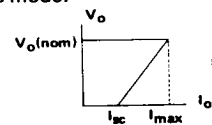


FIGURE 6