SILICON PLANAR PNP

BSV 82

PRELIMINARY DATA

GENERAL INFORMATION

TYPICAL APPLICATION: MEDIUM POWER AMPLIFIER

The BSV 82 is a silicon planar epitaxial PNP transistor in a Jedec TO-39 metal case. It is designed for a wide variety of applications, this device features minimum $V_{(BR)CEO}$ of 80 V, current gain specified from 100 μA to 500 mA and low saturation voltage for currents up to 1 A. It is particularly useful as complementary driver, in output stage applications and as medium speed switch, where high voltage and high current are required.

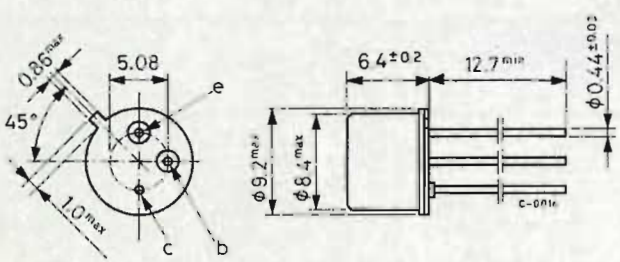
ABSOLUTE MAXIMUM RATINGS

V_{CBO}	Collector-base voltage ($I_E = 0$)	-80	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	-80	V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	-5	V
I_C	Collector current	-2	A
I_{CM}	Collector peak current	-3	A
P_{tot}	Total power dissipation at $T_a \leq 25$ °C	1	W
	at $T_c \leq 25$ °C	10	W
T_s	Storage temperature	-65÷200	°C
T_j	Junction temperature	200	°C

MECHANICAL DATA

Dimensions in mm

Collector connected to case



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THERMAL DATA

$R_{th\ j-c}$	Thermal resistance junction-case	max	17.5	°C/W
$R_{th\ j-a}$	Thermal resistance junction-ambient	max	175	°C/W

ELECTRICAL CHARACTERISTICS (T_c = 25 °C unless otherwise specified)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector cutoff current (I_E = 0)	V_{CB} = -50 V V_{CB} = -50 V T_C = 150 °C			-100 -100	nA μA
V_{CBO}	Collector-base voltage (I_E = 0)	I_C = -10 mA	-80			V
V_{CEO}	Collector-emitter voltage (I_B = 0)	I_C = -10 mA	-80			V
V_{EBO}	Emitter-base voltage (I_C = 0)	I_E = -10 μA	-5			V
$V_{CE\ (sat)}$	Collector-emitter saturation voltage	I_C = -500 mA I_B = -50 mA I_C = -1 A I_B = -100 mA			-0.5 -1	V V
$V_{BE\ (sat)}$	Base-emitter saturation voltage	I_C = -500 mA I_B = -50 mA			-1.1	V
h_{FE}	DC current gain	I_C = -0.1 mA V_{CE} = -0.5 V I_C = -50 mA V_{CE} = -1 V I_C = -50 mA V_{CE} = -0.5 V I_C = -150 mA V_{CE} = -1 V I_C = -150 mA V_{CE} = -0.5 V I_C = -500 mA V_{CE} = -1 V I_C = -500 mA V_{CE} = -0.5 V	25 45 40 40 30 15 10			— — — — — — —

ELECTRICAL CHARACTERISTICS (continued)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
h_{fe}	Small signal current gain	$I_C = -50$ mA $V_{CE} = -20$ V $f = 100$ MHz	100			—
C_{ob}	Output capacitance	$I_E = 0$ $V_{CB} = -10$ V			35	pF
t_{on}*	Turn-on-time	$I_C = -500$ mA $I_{B1} \cong 50$ mA $V_{BE\ (off)} \cong 1.6$ V		50		ns
t_{off}*	Turn-off-time	$I_C = -500$ mA $I_{B1} \cong -I_{B2} = -50$ mA		250	400	ns

* See switching circuit for exact values of I_C, I_{B1} and I_{B2}

TEST CIRCUIT

Switching times (t_{on} and t_{off}) test circuit