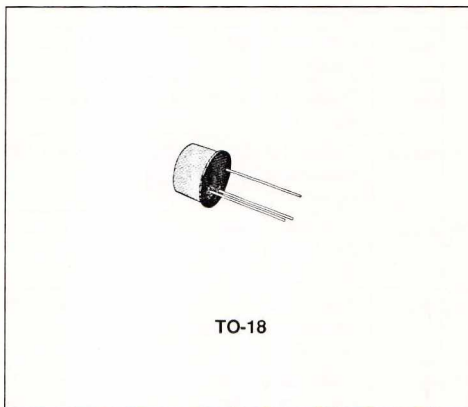


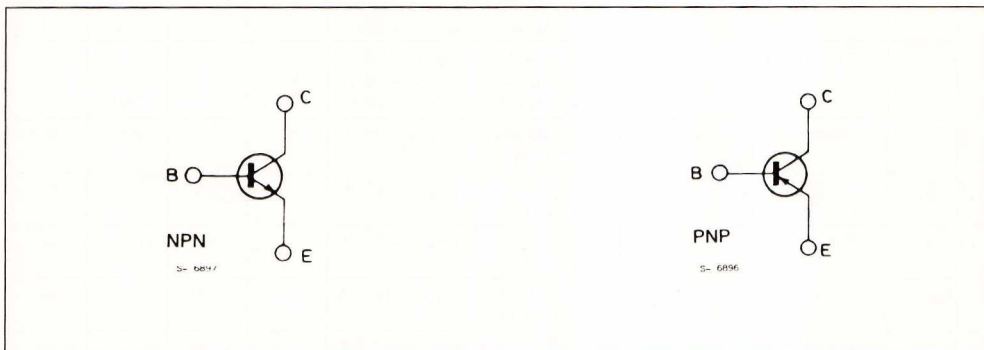
HIGH VOLTAGE AMPLIFIER

DESCRIPTION

The BSS71S is a silicon planar epitaxial NPN transistor in Jedec TO-18 metal case. It is designed for high voltage amplifier and switching applications at current levels from 100 μ A to 100 mA. The complementary PNP type is the BSS74S.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage	200	V
V_{CEO}	Collector-emitter Voltage	200	V
V_{EBO}	Emitter-base Voltage	6	V
I_C	Collector Current	200	mA
I_B	Base Current	50	mA
P_{Tot}	Total Device Dissipation at $T_{amb} \leq 25^\circ\text{C}$ at $T_{case} \leq 25^\circ\text{C}$	0.5	W
		2.5	W
T_{stg}, T_J	Storage and Junction Temperature	200	$^\circ\text{C}$

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	70	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = -150\text{ V}$			- 50	nA
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	$V_{CE} = -150\text{ V}$			- 500	nA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{BE} = 5\text{ V}$			- 50	nA
$V_{(BR)CBO}$	Collector-emitter Saturation Voltage ($I_E = 0$)	$I_C = -100\text{ }\mu\text{A}$	- 200			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = -2\text{ mA}$	- 200			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = -100\text{ }\mu\text{A}$	- 6			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = -10\text{ mA}$ $I_B = -1\text{ mA}$ $I_C = -30\text{ mA}$ $I_B = -3\text{ mA}$ $I_C = -50\text{ mA}$ $I_B = -5\text{ mA}$			- 0.3 - 0.4 - 0.5	V V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = -10\text{ mA}$ $I_B = -1\text{ mA}$ $I_C = -30\text{ mA}$ $I_B = -3\text{ mA}$ $I_C = -50\text{ mA}$ $I_B = -5\text{ mA}$			- 0.8 - 0.9 - 1	V V V
h_{FE}^*	DC Current Gain	$I_C = -1\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -10\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -30\text{ mA}$ $V_{CE} = -10\text{ V}$	30 50 40		250	
f_T	Transition Frequency	$I_C = -20\text{ mA}$ $V_{CE} = -20\text{ V}$ $f = 20\text{ MHz}$	50		200	MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -20\text{ V}$ $f = 1\text{ MHz}$		3.5		pF
C_{EBO}	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = -0.5\text{ V}$ $f = 1\text{ MHz}$		45		pF
t_{on}	Turn-on Time	$I_C = -50\text{ mA}$ $I_{B1} = -10\text{ mA}$ $V_{CC} = -100\text{ V}$		100		ns
t_{off}	Turn-off Time	$I_C = -50\text{ mA}$ $I_{B1} = -I_{B2} = -10\text{ mA}$ $V_{CC} = -100\text{ V}$		400		ns

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.