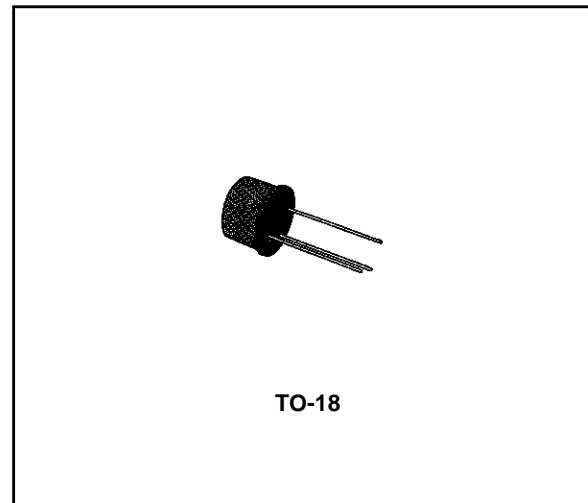


## HIGH VOLTAGE AMPLIFIER

### 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  $\mu$ 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 $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	0.5	W
		2.5	W
$T_{stg}, T_j$	Storage and Junction Temperature	200	$^\circ\text{C}$

# BSS71S

## THERMAL DATA

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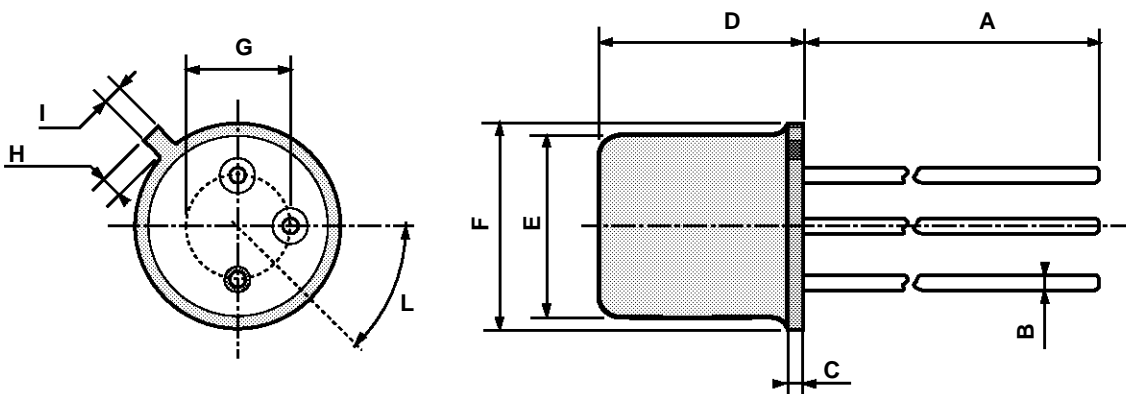
## ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ °C}$ unless otherwise specified)

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-base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100\text{ }\mu\text{A}$	200			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = 10\text{ mA}$	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	$I_C = 100\text{ }\mu\text{A}$ $V_{CE} = 1\text{ V}$ $I_C = 1\text{ mA}$ $V_{CE} = 10\text{ V}$ $I_C = 10\text{ mA}$ $V_{CE} = 10\text{ V}$ $I_C = 30\text{ mA}$ $V_{CE} = 10\text{ V}$	20 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  $\mu\text{s}$ , duty cycle = 1 %.

## TO-18 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45°			45°		



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