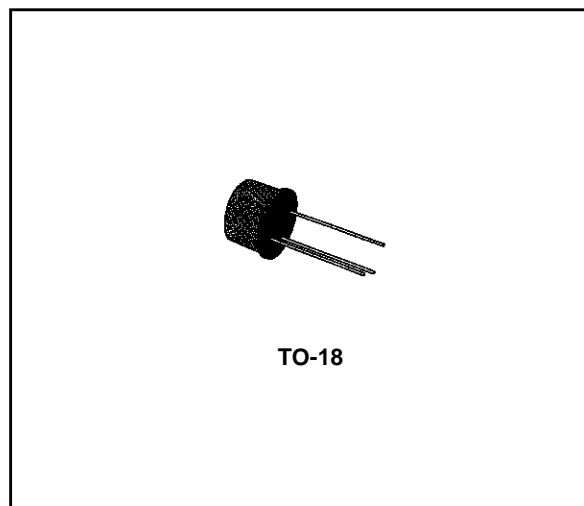


## HIGH VOLTAGE AMPLIFIER

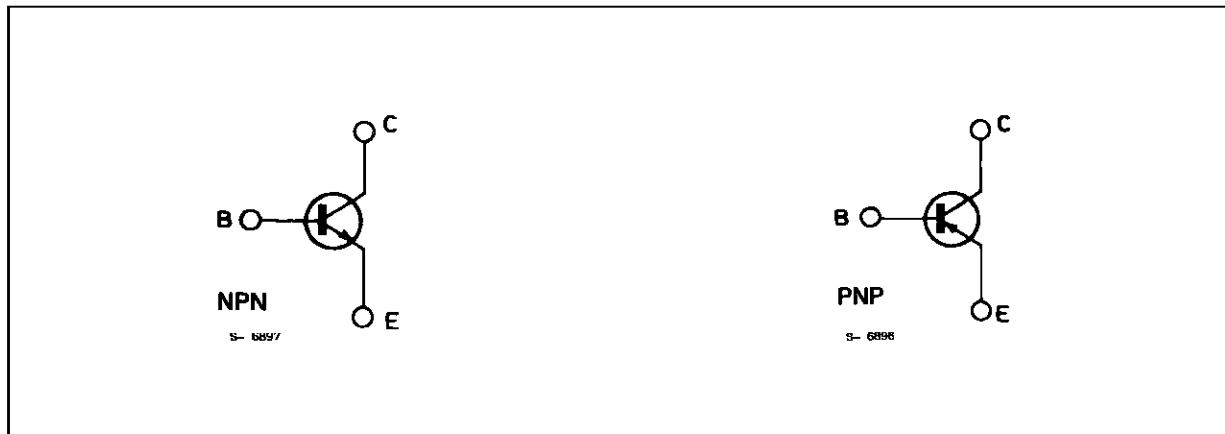
PRELIMINARY DATA

### DESCRIPTION

The BSS72S 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 BSS75S.



### 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	- 65 to 200	$^\circ\text{C}$

# BSS72S

## THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	70	$^{\circ}C/W$
------------------	----------------------------------	-----	----	---------------

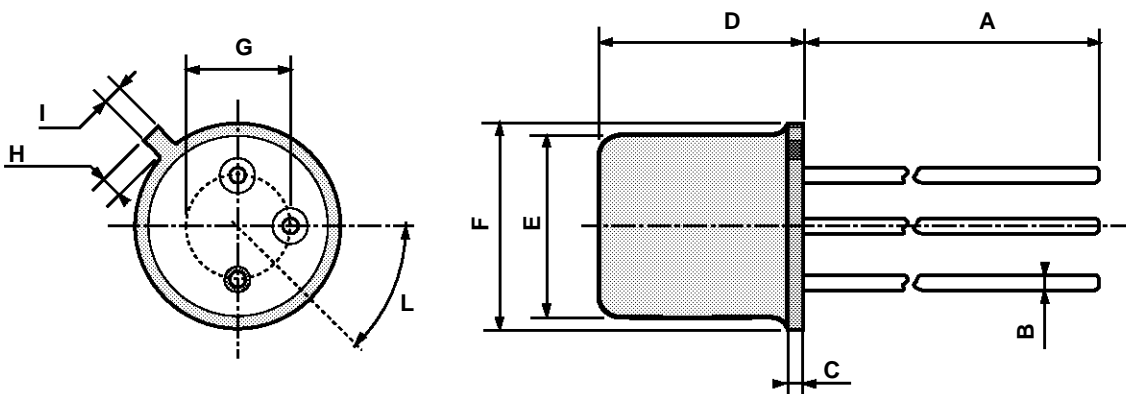
## ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\ ^{\circ}C$ unless otherwise specified)

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

\* Pulsed: pulse duration = 300  $\mu s$ , 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°		



0016043

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -  
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A