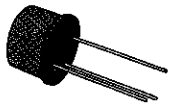
SGS-THOMSON MICROELECTRONICS

BSS26

HIGH -VOLTAGE, HIGH-CURRENT SWITCH

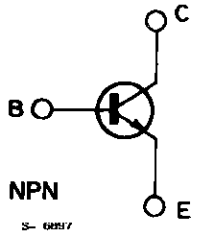
DESCRIPTION

The BSS 26 is a silicon planar epitaxial NPN transistor in Jedec TO-18 metal case. It is intended for high voltage, high current switching applications.



TO-18

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage (I_E = 0)	60	V
V_{CES}	Collector-emitter Voltage (V_{BE} = 0)	60	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	40	V
V_{EBO}	Emitter-base Voltage (I_C = 0)	6	V
I_C	Collector Current	1	A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25$ °C at $T_{case} \leq 25$ °C	0.36 1.2	W W
T_{stg}, T_j	Storage and Junction Temperature	– 55 to 200	°C

THERMAL DATA

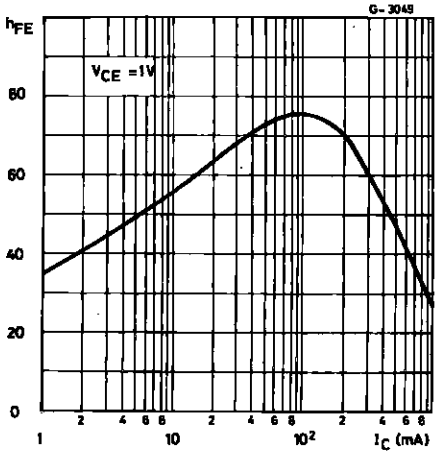
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	146	°C/W
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max	486	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C unless otherwise specified)

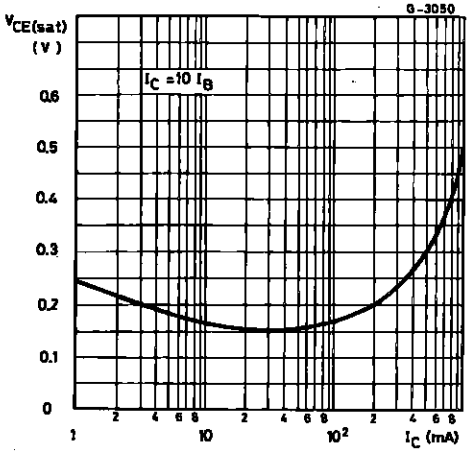
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = 40 V V_{CB} = 40 V T_{amb} = 100 °C			1.7 120	µA µA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage (I_E = 0)	I_C = 10 µA	60			V
$V_{(BR)CES}$	Collector-emitter Breakdown Voltage (V_{BE} = 0)	I_C = 10 µA	60			V
$V_{(BR)CEO}$*	Collector-emitter Breakdown Voltage (I_B = 0)	I_C = 10 mA	40			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage (I_C = 0)	I_E = 10 µA	6			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 100 mA I_B = 10 mA I_C = 500 mA I_B = 50 mA I_C = 1 A I_B = 0.1 A		0.17 0.3 0.5	0.3 0.5 0.95	V V V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 100 mA I_B = 10 mA I_C = 500 mA I_B = 50 mA I_C = 1 A I_B = 0.1 A	 0.8 	0.78 0.95 1.05	0.9 1.2 1.7	V V V
h_{FE}*	DC Current Gain	I_C = 10 mA V_{CE} = 1 V I_C = 100 mA V_{CE} = 1 V I_C = 500 mA V_{CE} = 1 V I_C = 1 A V_{CE} = 5 V	25 40 25 	55 75 45 45	 	
f_T	Transition Frequency	I_C = 50 mA V_{CE} = 10 V f = 100 MHz	 250	 400	 	 MHz
C_{EBO}	Emitter-base Capacitance	I_C = 0 V_{EB} = 0.5 V f = 1 MHz	 	 40	 55	 pF
C_{CBO}	Collector-base Capacitance	I_E = 0 V_{CB} = 10 V f = 1 MHz	 	 4.8	 12	 pF
t_{on}**	Turn-on Time	I_C = 500 mA V_{CC} = 30 V I_{B1} = 50 mA	 	 15	 35	 ns
t_{off}**	Turn-off Time	I_C = 500 mA V_{CC} = 30 V I_{B1} = – I_{B2} = 50 mA	 	 40	 60	 ns

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

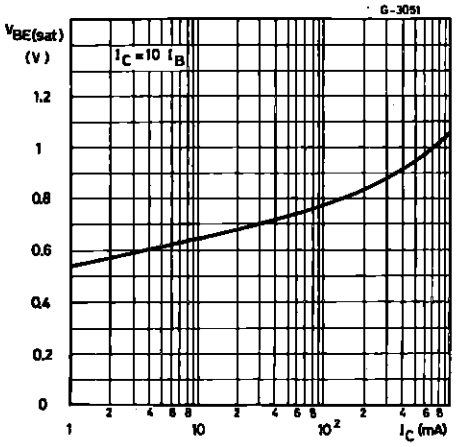
DC Current Gain.



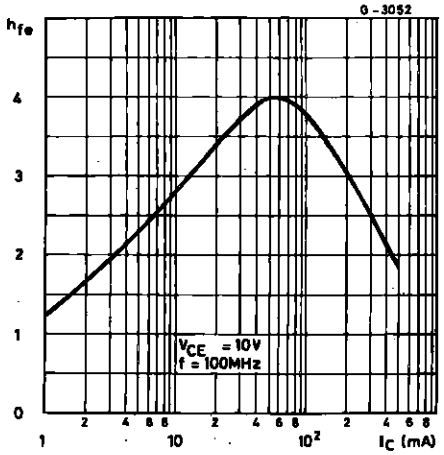
Collector-emitter Saturation Voltage.



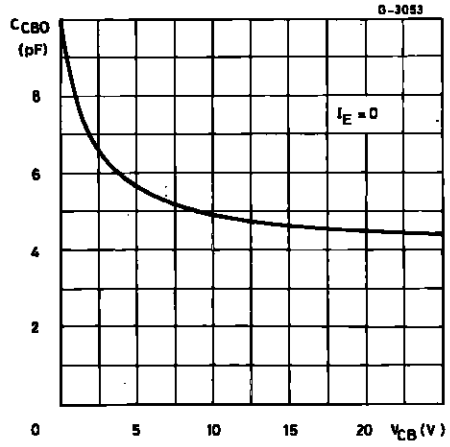
Base-emitter Saturation Voltage.



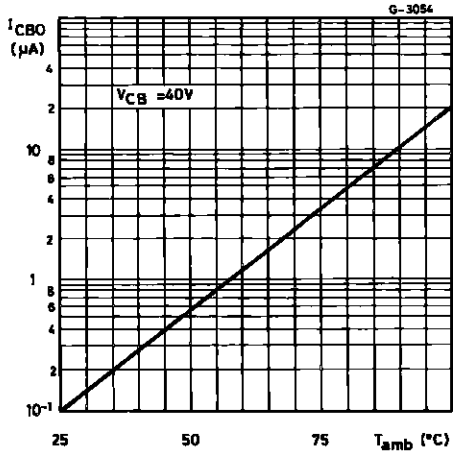
High Frequency Current Gain.



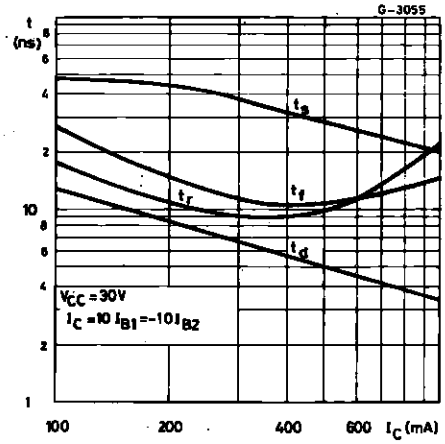
Collector-base Capacitance.

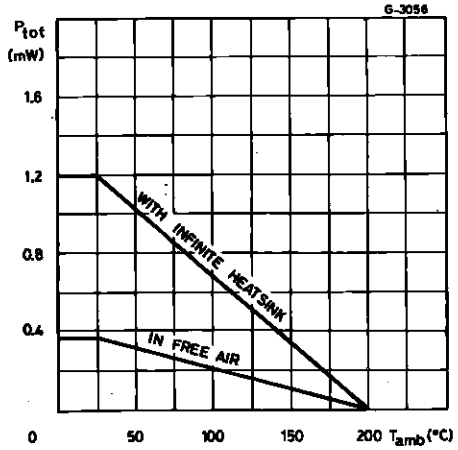


Collector Cutoff Current.

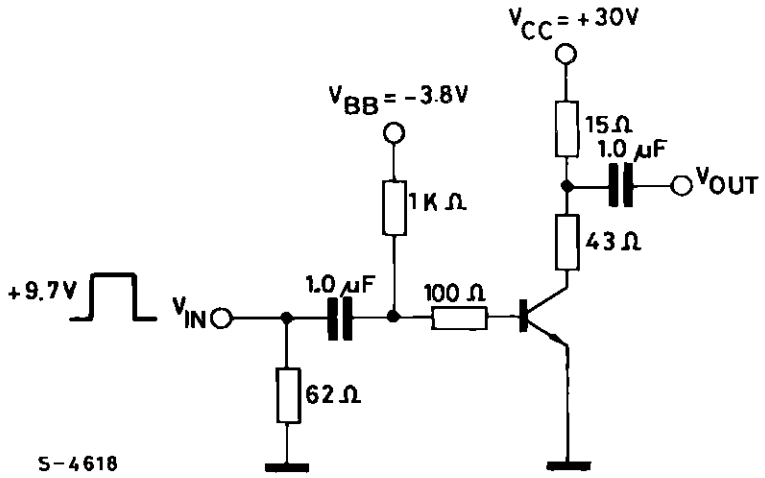


Switching Characteristics.





Test Circuit for t_{on}, t_{off}.

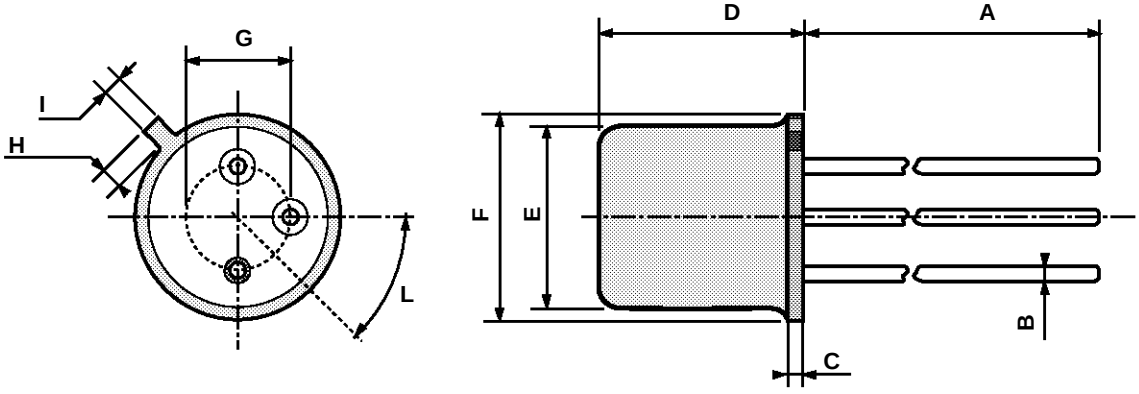


Pulse generator :
t_r, $t_f \leq$ 1.0 ns
PW ≈ 10 µs
Z_{IN} = 50 Ω
DC < 2 %

To oscilloscope :
t_r < 1.0 ns
$Z_{IN} \geq$ 100 kΩ.

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^o			45^o		



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