

SILICON MESA NPN

GENERAL INFORMATION

TYPICAL APPLICATION: MEDIUM POWER AMPLIFIER

The BSS 15/2N 5320 is a silicon planar epitaxial NPN transistor in a Jedec TO-39 metal case. It is especially intended for high-voltage medium power applications in industrial and commercial equipments.

The complementary PNP type is the 2N 5322.

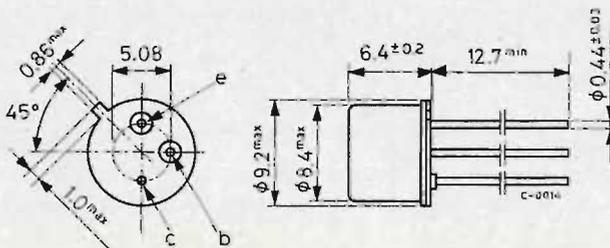
ABSOLUTE MAXIMUM RATINGS

V_{CBO}	Collector-base voltage ($I_E = 0$)	100	V
$V_{CEO (sus)}$	Collector-emitter voltage ($I_B = 0$)	75	V
$V_{CEV (sus)}$	Collector-emitter voltage ($V_{BE} = -1.5$ V)	100	V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	7	V
I_C	Collector current	2	A
I_B	Base current	1	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



BSS 15 2N5320

THERMAL DATA

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

ELECTRICAL CHARACTERISTICS ($T_c = 25^{\circ}\text{C}$ unless otherwise specified)

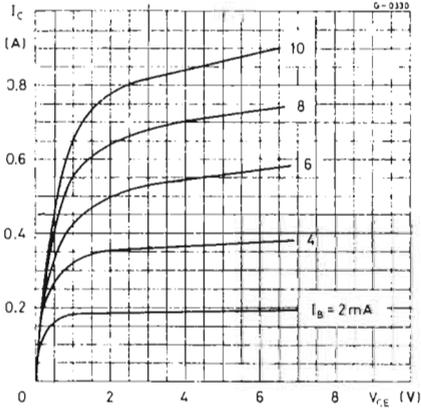
Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector cutoff current ($I_E = 0$)			0.5	μA
I_{EBO}	Emitter cutoff current ($I_C = 0$)			0.1	μA
V_{EBO}	Emitter-base voltage ($I_C = 0$)		7		V
$V_{CEO(sus)}$	Collector-emitter voltage ($I_B = 0$)		75		V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C = 500\text{ mA}$	$I_B = 50\text{ mA}$	0.5	V
V_{CEV}	Collector-emitter voltage ($V_{BE} = -1.5\text{ V}$)	$I_C = 0.1\text{ mA}$		100	V
V_{BE}	Base-emitter voltage	$I_C = 500\text{ mA}$	$V_{CE} = 4\text{ V}$	1.1	V
h_{FE}	DC current gain	* $I_C = 500\text{ mA}$ * $I_C = 1\text{ A}$	$V_{CE} = 4\text{ V}$ $V_{CE} = 2\text{ V}$	30 130	— —
f_T	Transition frequency	$I_C = 50\text{ mA}$	$V_{CE} = 4\text{ V}$	50	MHz
t_{on}	Turn on time	$I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$	$V_{CE} = 30\text{ V}$	80	ns
t_{off}	Turn off time	$I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$	$V_{CE} = 30\text{ V}$	800	ns
$I_{S/B}^{**}$	Second breakdown collector current	$V_{CE} = 50\text{ V}$		200	mA

* Pulse conditions

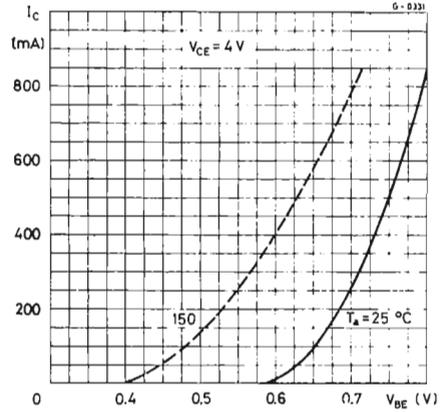
** 0.4 s non repetitive pulse

BSS 15 2N5320

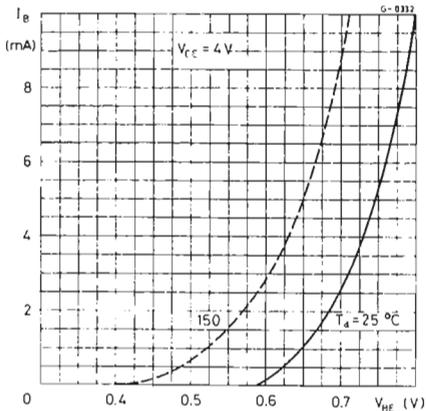
Typical output characteristics



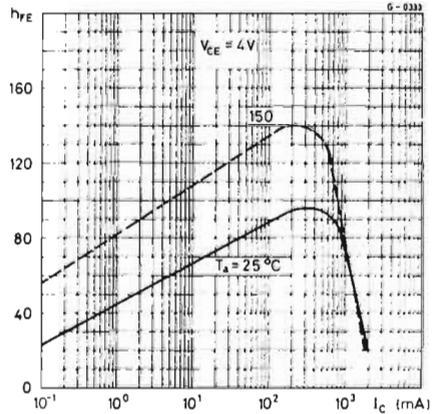
Typical DC transconductance



Typical input characteristics

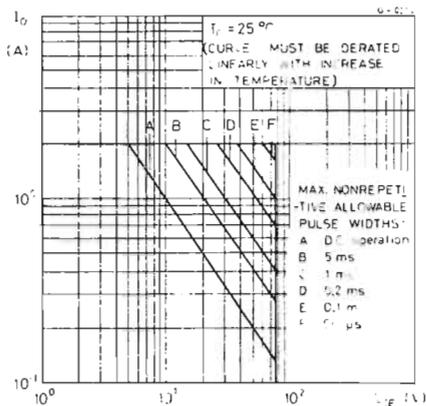


Typical DC current gain



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Maximum operating areas



TEST CIRCUIT

Switching times test circuit

