Silicon NPN Transistor

BD663

Power Linear and Switching

45V / 10A

DATASHEET

OEM –SGS Ates

Source: SGS Ates Databook 1977

Datasheet Rev. 2.0 – 09/19 – data without warranty / liability

BD 663

EPITAXIAL-BASE NPN

POWER LINEAR AND SWITCHING APPLICATIONS

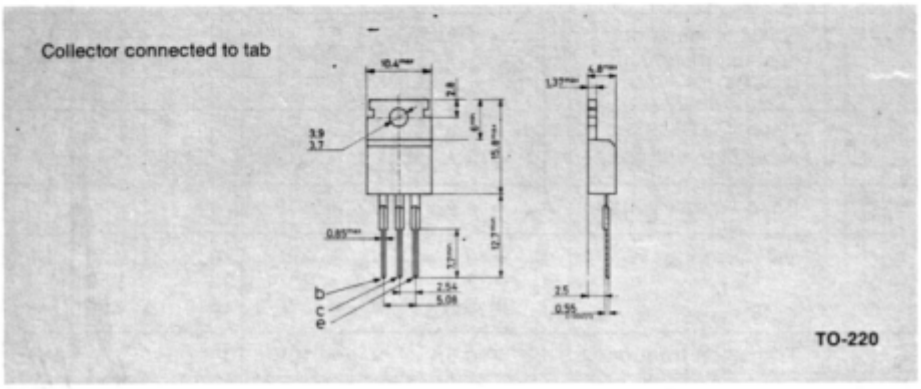
The BD 663 is a silicon epitaxial-base NPN power transistor in Jedec TO-220 plastic package intended for use in power linear and switching applications.
The complementary PNP type is the BD 664.

ABSOLUTE MAXIMUM RATINGS

V_{CBO}	Collector-base voltage ($I_E = 0$)	45	V
V_{CES}	Collector-emitter voltage ($V_{BE} = 0$)	45	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	45	V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	5	V
I_C	Collector current	10	A
I_B	Base current	5	A
P_{tot}	Total power dissipation at $T_{case} \leq 25°C$	75	W
T_{stg}	Storage temperature	-65 to 150	°C
T_j	Junction temperature	150	°C

MECHANICAL DATA

Dimensions in mm



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THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal resistance junction-case	max	1.67	°C/W

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

	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector cutoff current (V_{BE} = 0)	V_{CE} = 45 V			100	μA
I_{CEO}	Collector cutoff current (I_C = 0)	V_{CE} = 22 V			1	mA
I_{EBO}	Emitter cutoff current	V_{EB} = 5 V			1	mA
$V_{CEO\ (sus)}$*	Collector-emitter sustaining voltage (I_B = 0)	I_C = 100mA	45			V
$V_{CE\ (sat)}$*	Collector-emitter saturation voltage	I_C = 3 A I_B = 0.3A I_C = 6 A I_B = 0.6A		0.7	1	V V
V_{BE}*	Base-emitter voltage	I_C = 4 A V_{CE} = 4 V			1.5	V
h_{FE}*	DC current gain	I_C = 0.5A V_{CE} = 2 V I_C = 2 A V_{CE} = 2 V I_C = 3 A V_{CE} = 2 V	40 20 15		400 250 150	— — —
f_T	Transition frequency	I_C = 0.5A V_{CE} = 10V	3			MHz

* Pulsed: pulse duration = 300 μs, duty cycle = 1.5%

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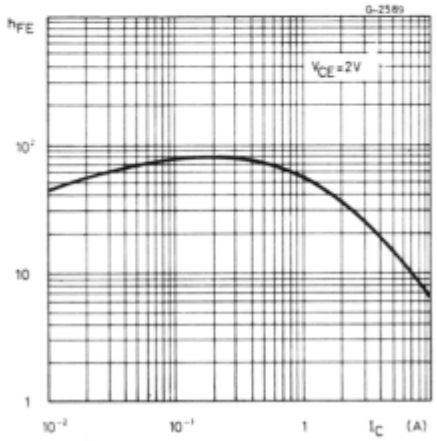
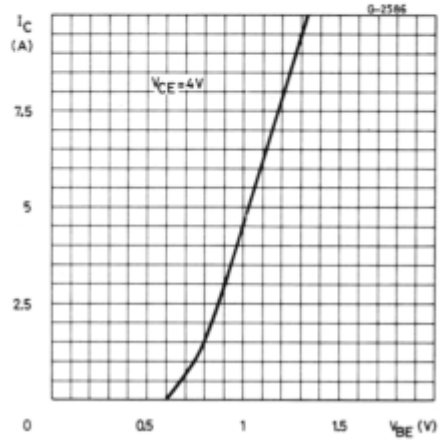
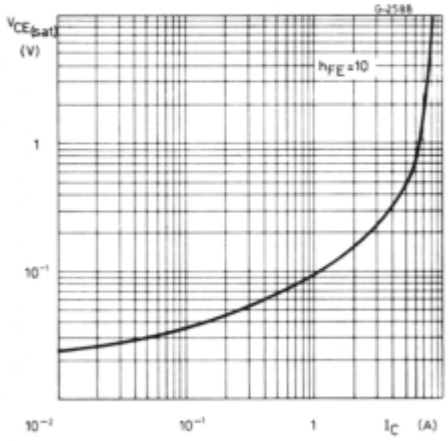
DC current gain



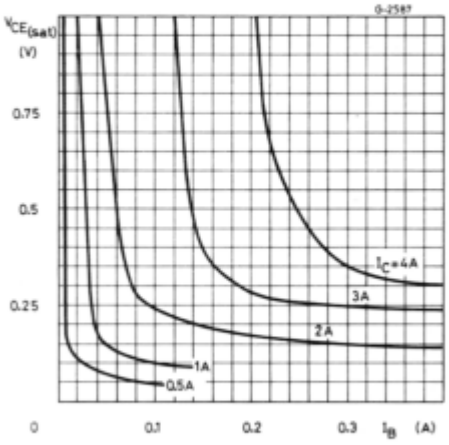
DC transconductance



Collector-emitter saturation voltage



Collector-emitter saturation voltage



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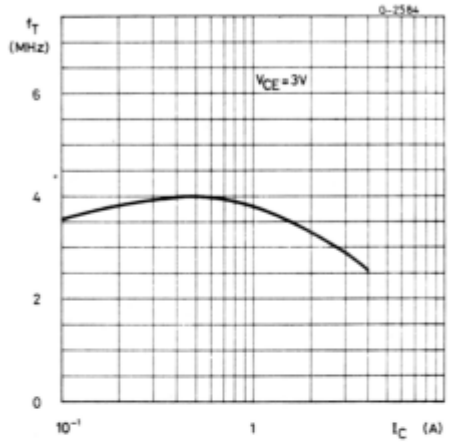
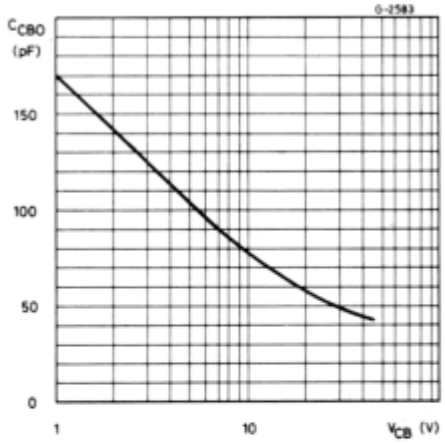
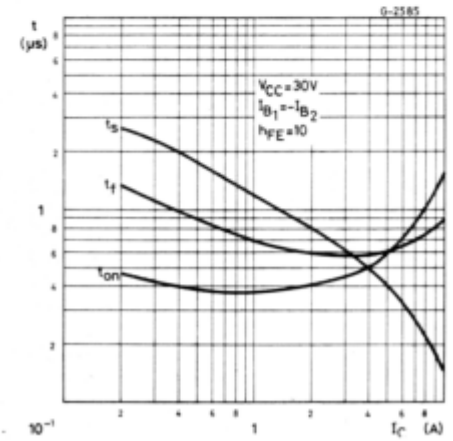
Transition frequency



Collector-base capacitance



Saturated switching characteristics



Power rating chart