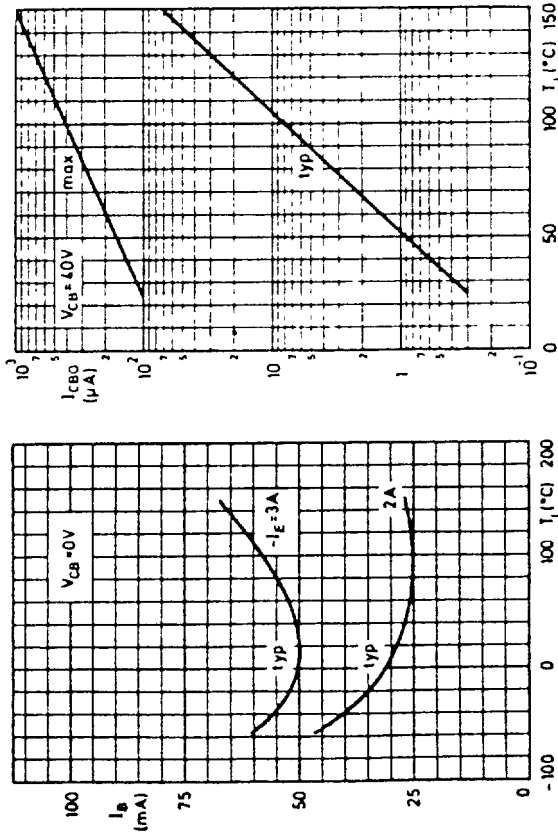


**N-P-N SILICON EPITAXIAL-BASE
A.F. POWER TRANSISTORS**

**BD201
BD203**



N-P-N silicon epitaxial-base power transistors in a plastic envelope. With their p-n-p complements BD202 and BD204 they are primarily intended for use in hi fi equipment delivering an output of 15 to 25W into 4 or 8 Ω load.

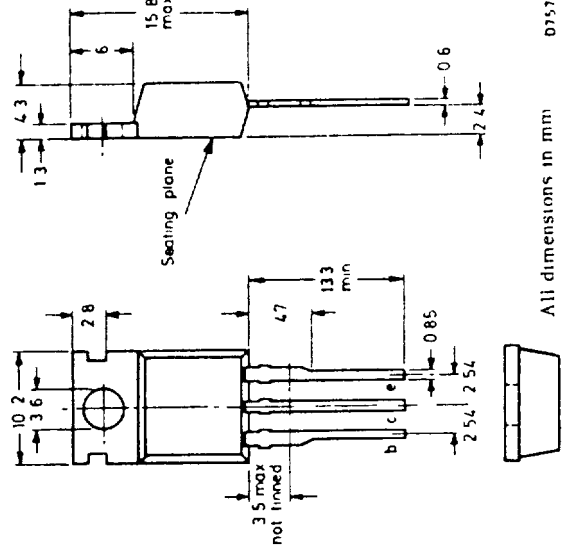
QUICK REFERENCE DATA

V_{CEO} max.	60	60	V
V_{CEQ} max.	45	60	V
I_C max.	5.0	5.0	A
P_{Tot} max. ($T_{mb} \approx 25^\circ C$)	60	60	W
T_J max.	150	150	$^\circ C$
h_{FE} min. ($I_C = 3A, V_{CE} = 2V$)	30	-	-
h_{FE} min. ($I_C = 2A, V_{CE} = 2V$)	-	30	-
f_{hfc} min. ($I_C = 0.3A, V_{CE} = 3V$)	25	25	kHz

Unless otherwise stated data are applicable to both types

OUTLINE AND DIMENSIONS Similar to J.E.D.E.C. TO-220

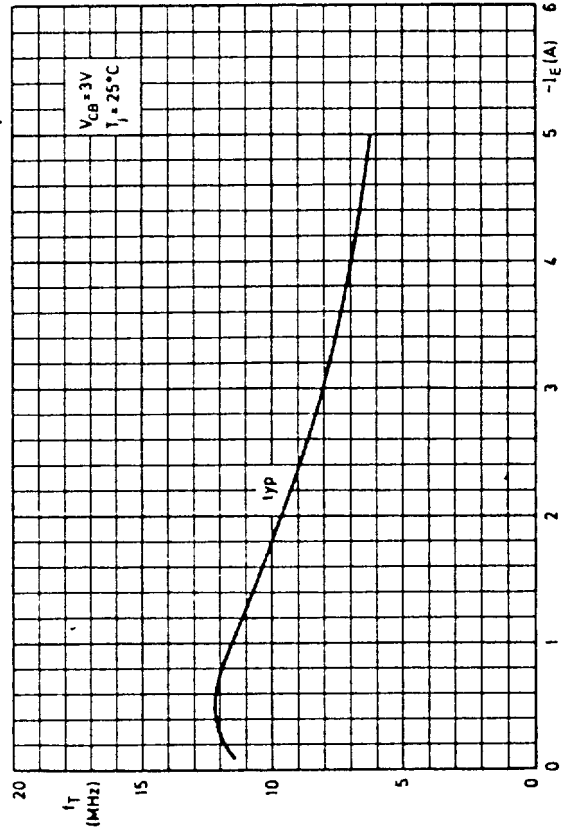
Collector connected to the metal part of the mounting surface.



All dimensions in mm

07576

Accessories available: 56338 (insulating bush), 56325 (mica washer)



**BD201
BD203**

**N-P-N SILICON EPITAXIAL-BASE
A.F. POWER TRANSISTORS**

RATINGS

Limiting values of operation according to the absolute maximum system.

Electrical

	BD201	BD203
V_{CE} max.	60	60
$V_{CE(sat)}$ max.	45	60
V_{EB} max.	5.0	5.0
I_C max. (d. c.)	8.0	8.0
I_{CM} max. (peak value, $t_p \approx 10\mu s$)	12	12
I_{CSM} max. (non repetitive peak value, $t_p \approx 2ms$)	25	25
P_{tot} max. ($T_{mb} \approx 25^\circ C$)	60	60

Temperature

T_{stg}	-65 to +150	$^\circ C$
T_J max.	150	$^\circ C$

THERMAL CHARACTERISTICS

$R_{th(j-c)}$	2.08	$^\circ C/W$
---------------	------	--------------

ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ C$ unless otherwise stated)

	Min.	Typ.	Max.
I_{CBO}	-	-	1.0
I_{CBO}	-	-	1.0
I_{LEO}	-	-	5.0
V_{BL}	-	-	1.5
V_{CLK}	-	-	1.0
$V_{CE(sat)}$	-	-	1.0

Collector cut-off current

$I_B = 0, V_{CE} = 30V$
 $I_L = 0, V_{CB} = 40V, T_J = 150^\circ C$

Emitter cut-off current

$I_C = 0, V_{EB} = 5V$
 Base emitter voltage

Base emitter voltage

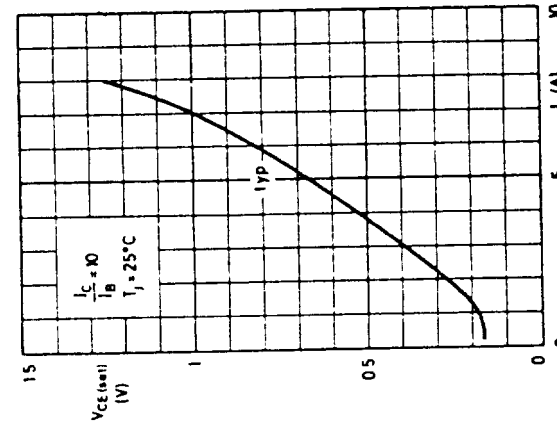
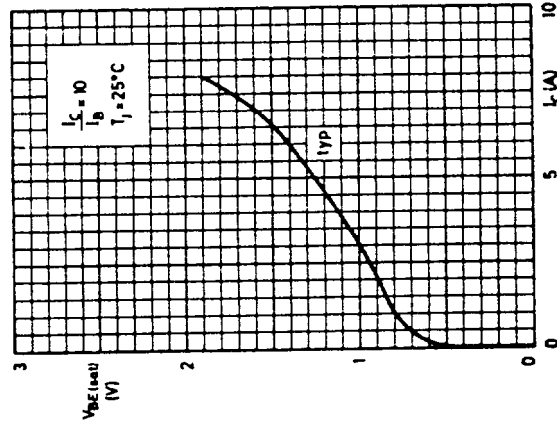
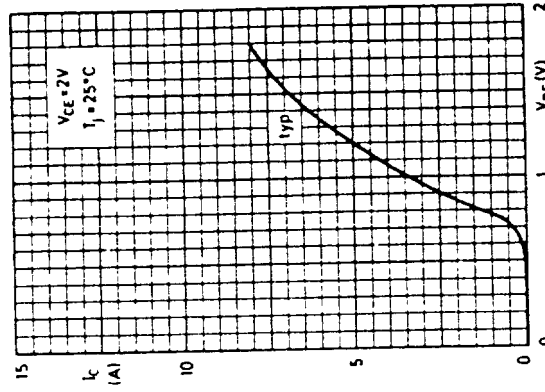
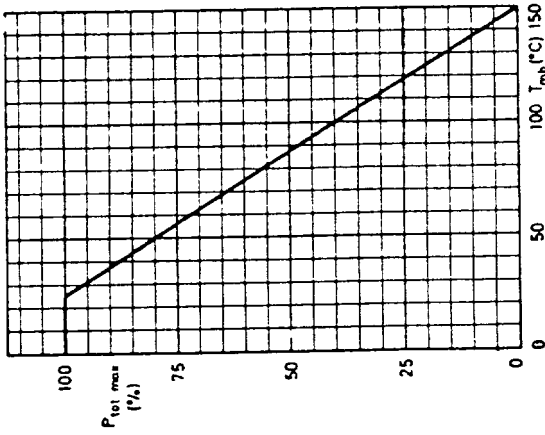
$I_C = 3A, V_{CE} = 2V$
 Base voltage

Collector-emitter saturation voltage

$I_C = 3A, I_B = \text{the value for which } I_C = 3.3A \text{ at } V_{CE} = 2V$
 (collector-emitter saturation voltage)

Collector-emitter saturation voltage

$I_C = 3A, I_B = 0.3A$
 *Measured with pulses of 300 μs and with 2% duty cycle.



N-P-N SILICON EPITAXIAL-BASE A.F. POWER TRANSISTORS

**BD201
BD203**

ELECTRICAL CHARACTERISTICS (Cont'd)

	Static forward current transfer ratio	Min.	Typ.	Max.
* h_{FE}	$I_C = 1A, V_{CE} = 2V$	30	-	-
	$I_C = 3A, V_{CE} = 2V$ BD201	30	-	-
	$I_C = 2A, V_{CE} = 2V$ BD203	30	-	-
f_{hfe}	Cut-off frequency	25	-	kHz
f_T	Transition frequency	3.0	-	MHz

$I_C = 1A, V_{CE} = 2V$

$I_C = 3A, V_{CE} = 2V$ BD201

$I_C = 2A, V_{CE} = 2V$ BD203

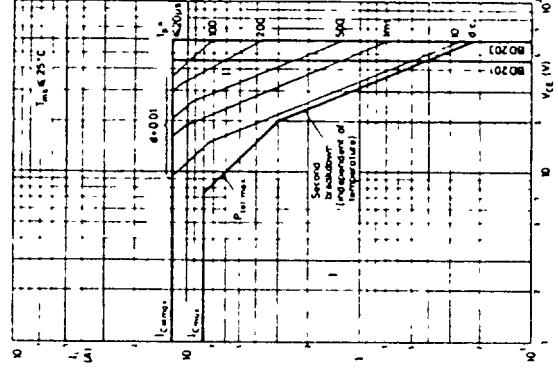
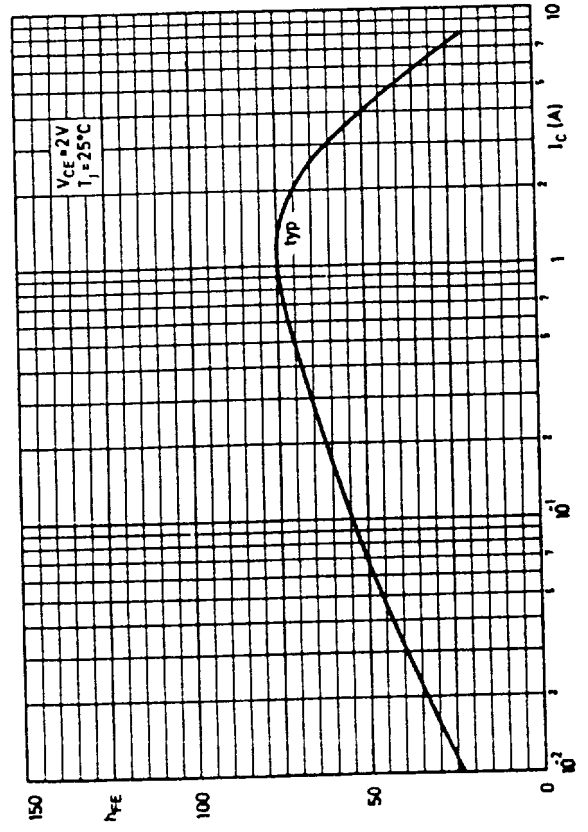
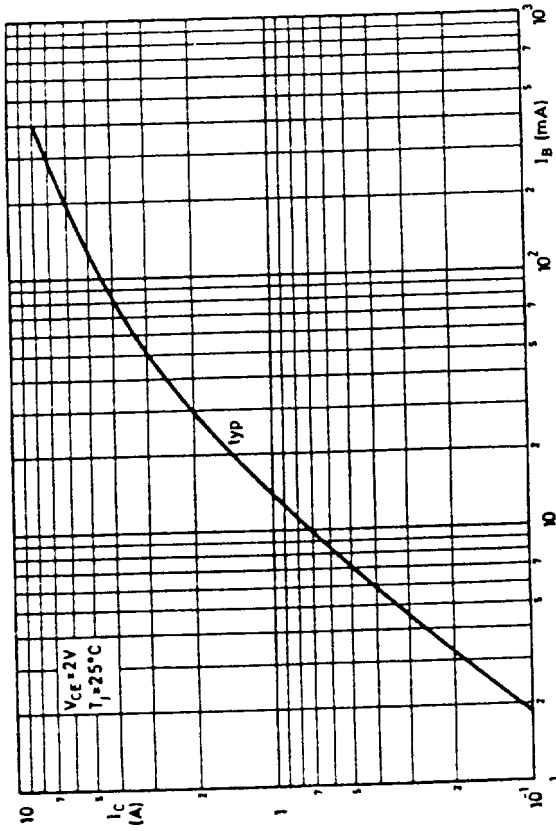
Cut-off frequency

$I_C = 0.3A, V_{CE} = 3V$

Transition frequency

$I_C = 0.3A, V_{CE} = 3V, f = 1MHz$

* Measured with pulses of 300 μ s and with 2% duty cycle.



SAFE OPERATING AREAS WITH THE TRANSISTOR FORWARD BIASED

- I Region of permissible extension for repetitive pulse operation
- II Permissible extension for repetitive pulse operation (for $P_{tot \text{ max}}$ versus $T_{n,b}$ see page 7)

N-P-N SILICON EPITAXIAL-BASE A.F. POWER TRANSISTORS

BD201
BD203

