BDW 52
BDW 52A
BDW 52B
BDW 52C

EPITAXIAL-BASE PNP

POWER LINEAR AND SWITCHING APPLICATIONS

The BDW 52, BDW 52A, BDW 52B and BDW 52C are silicon epitaxial-base PNP power transistors in Jedec TO-3 metal case. They are intended for use in power linear and switching applications.
The complementary NPN types are the BDW 51, BDW 51A, BDW 51B and BDW 51C respectively.

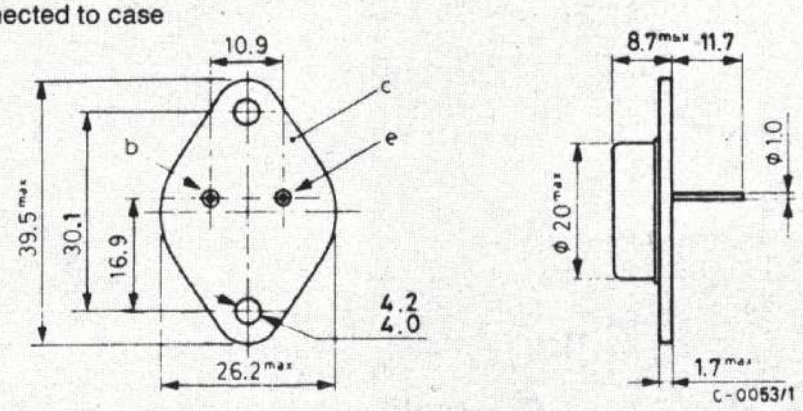
ABSOLUTE MAXIMUM RATINGS

		BDW52	BDW52A	BDW52B	BDW52C
V_{CBO}	Collector-base voltage ($I_E = 0$)	-45V	-60V	-80V	-100V
V_{CES}	Collector-emitter voltage ($V_{BE} = 0$)	-45V	-60V	-80V	-100V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	-45V	-60V	-80V	-100V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	-5V			
I_C	Collector current	-15A			
I_{CM}	Collector peak current	-20A			
I_B	Base current	-7A			
P_{tot}	Total power dissipation at $T_{case} \leq 25°C$	125W			
T_{stg}	Storage temperature	-65 to 200°C			
T_j	Junction temperature	200 °C			

MECHANICAL DATA

Dimensions in mm

Collector connected to case



TO-3

THERMAL DATA

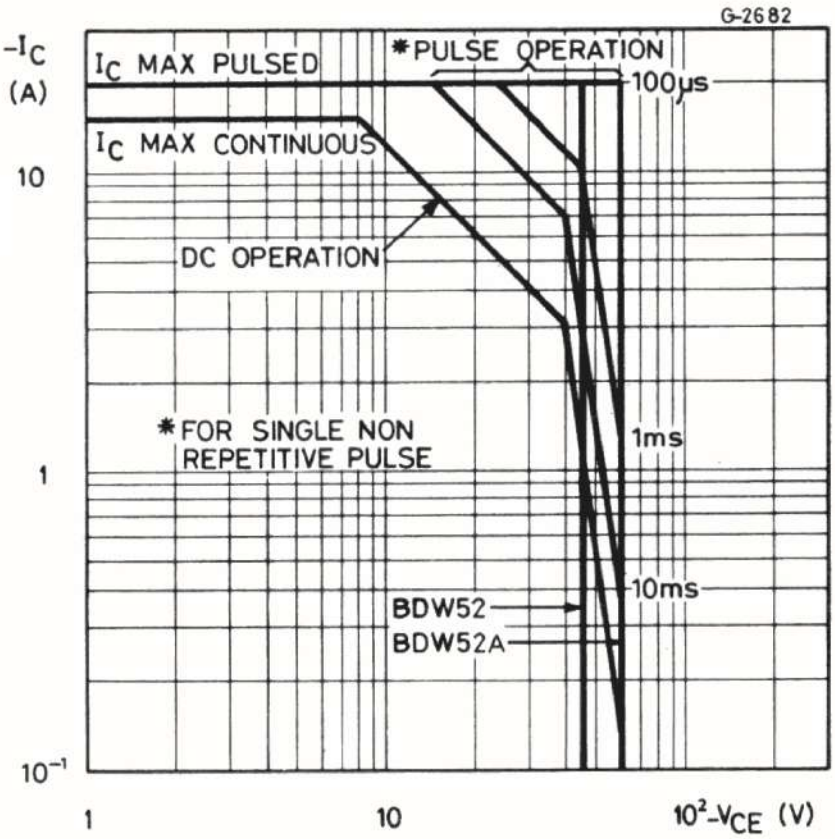
$R_{th\ j\text{-}case}$	Thermal resistance junction-case	max	1.4	°C/W

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

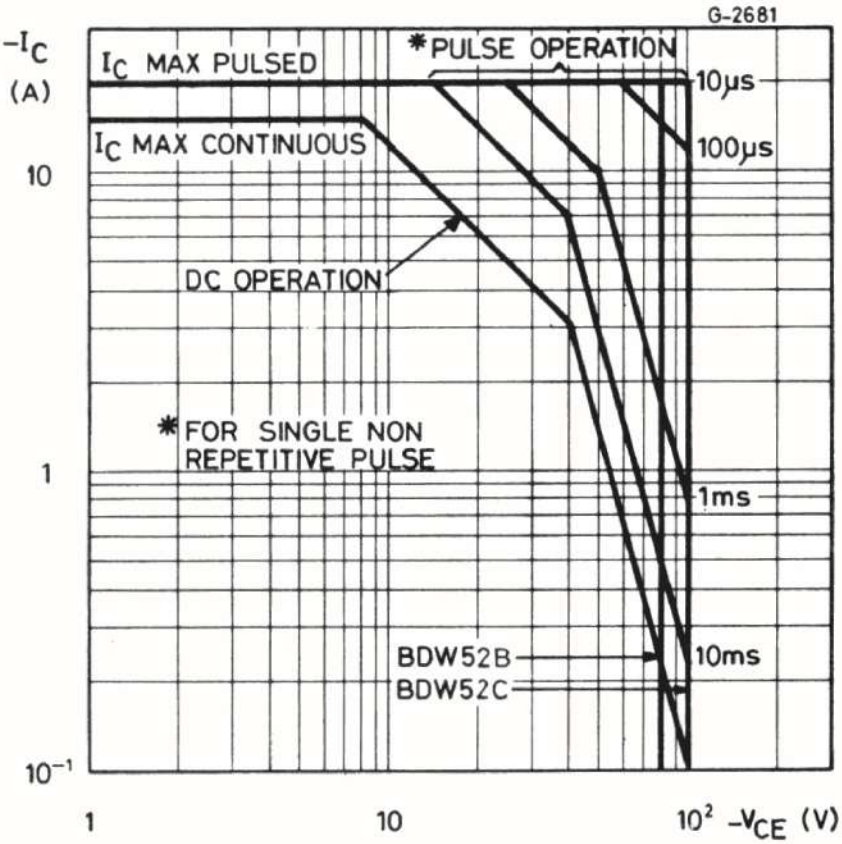
Parameter		Test conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector cutoff current (I_E = 0)	for **BDW52**	V_{CB} = -45V			-500	μA
		for **BDW52A**	V_{CB} = -60V			-500	μA
		for **BDW52B**	V_{CB} = -80V			-500	μA
		for **BDW52C**	V_{CB} = -100V			-500	μA
		T_{case} = 150°C					
		for **BDW52**	V_{CB} = -45V			-5	mA
		for **BDW52A**	V_{CB} = -60V			-5	mA
		for **BDW52B**	V_{CB} = -80V			-5	mA
		for **BDW52C**	V_{CB} = -100V			-5	mA
I_{CEO}	Collector cutoff current (I_B = 0)	for **BDW52**	V_{CE} = -22V			-1	mA
		for **BDW52A**	V_{CE} = -30V			-1	mA
		for **BDW52B**	V_{CE} = -40V			-1	mA
		for **BDW52C**	V_{CE} = -50V			-1	mA
I_{EBO}	Emitter cutoff current (I_C = 0)	V_{EB} = -5 V				-2	mA
$V_{CEO(sus)}$*	Collector-emitter sustaining voltage (I_B = 0)	I_C = -100 mA					
			for **BDW52**	-45			V
			for **BDW52A**	-60			V
			for **BDW52B**	-80			V
			for **BDW52C**	-100			V
$V_{CE(sat)}$*	Collector-emitter saturation voltage	I_C = -5A	I_B = -0.5A			-1	V
		I_C = -10A	I_B = -2.5A			-3	V
$V_{BE(sat)}$*	Base-emitter saturation voltage	I_C = -10A	I_B = -2.5A			-2.5	V
V_{BE}*	Base-emitter voltage	I_C = -5A	V_{CE} = -4V			-1.5	V
h_{FE}*	DC current gain	I_C = -5A	V_{CE} = -4V	20		150	—
		I_C = -10A	V_{CE} = -4V	5			—
f_T	Transition frequency	I_C = -0.5A	V_{CE} = -4V	3			MHz

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

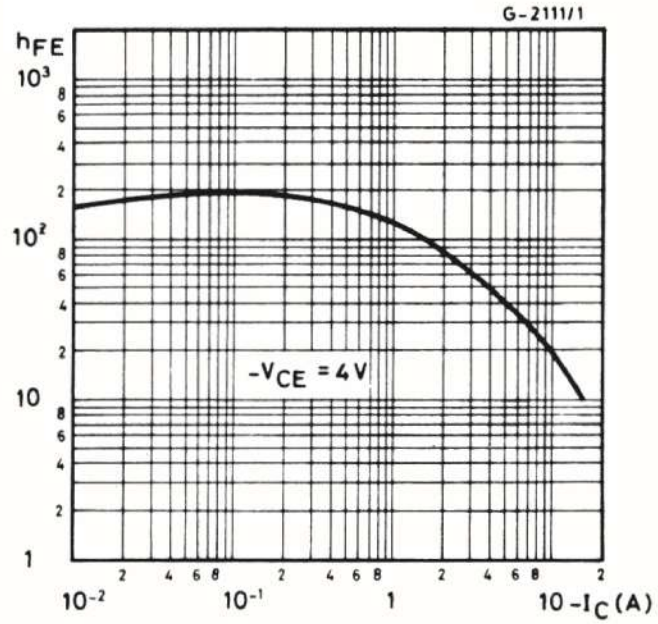
Safe operating areas
(for **BDW52** and **BDW52A**)



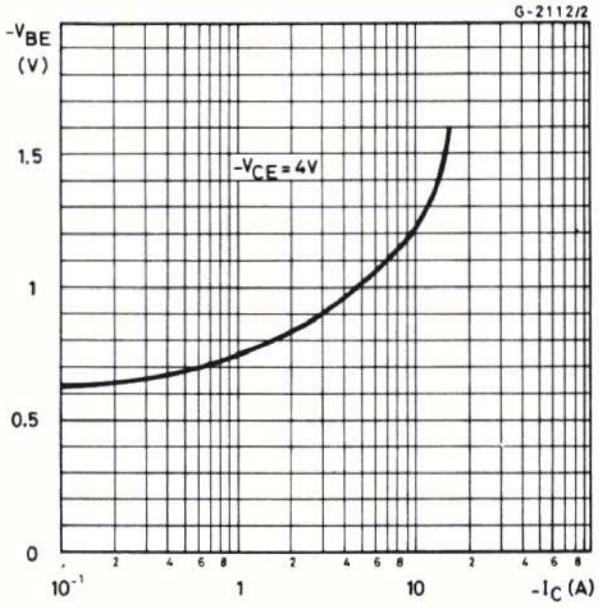
Safe operating areas
(for **BDW52B** and **BDW52C**)



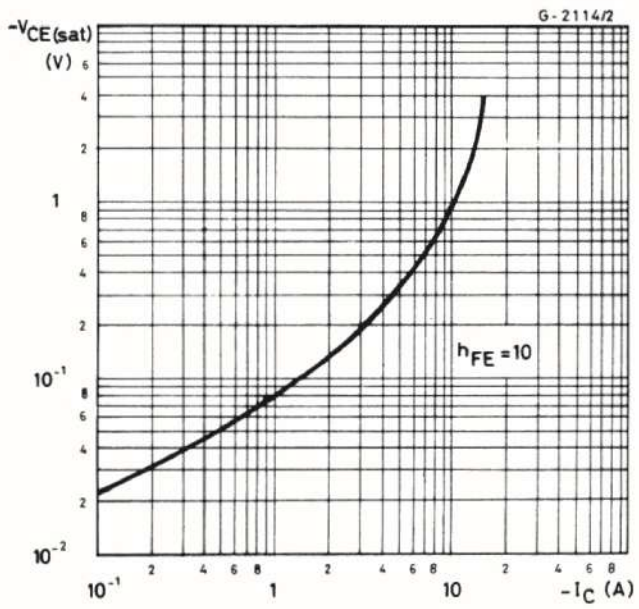
DC current gain



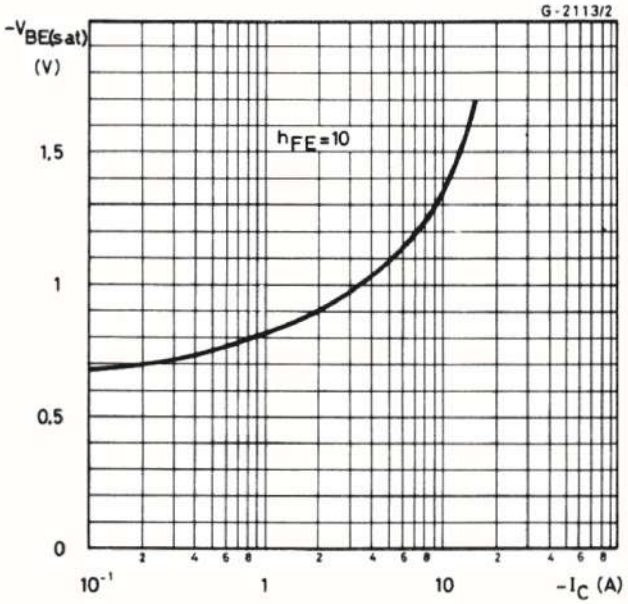
DC transconductance



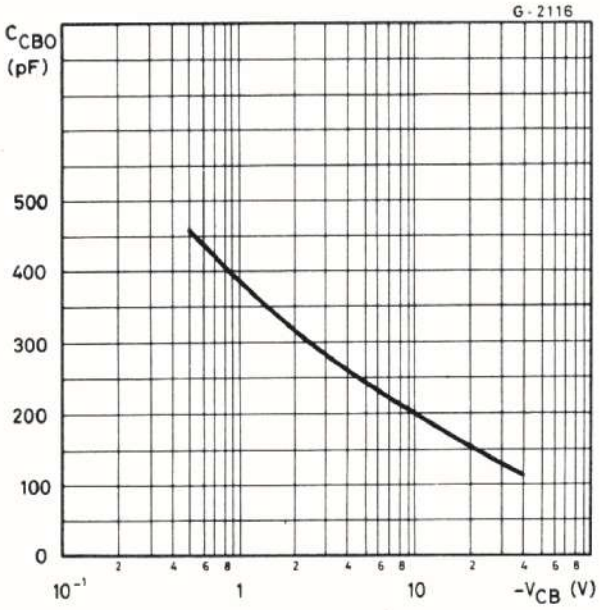
Collector-emitter saturation voltage



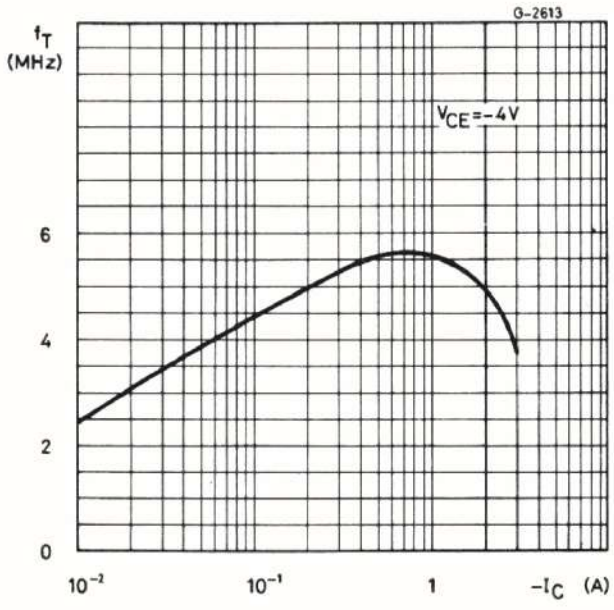
Base-emitter saturation voltage



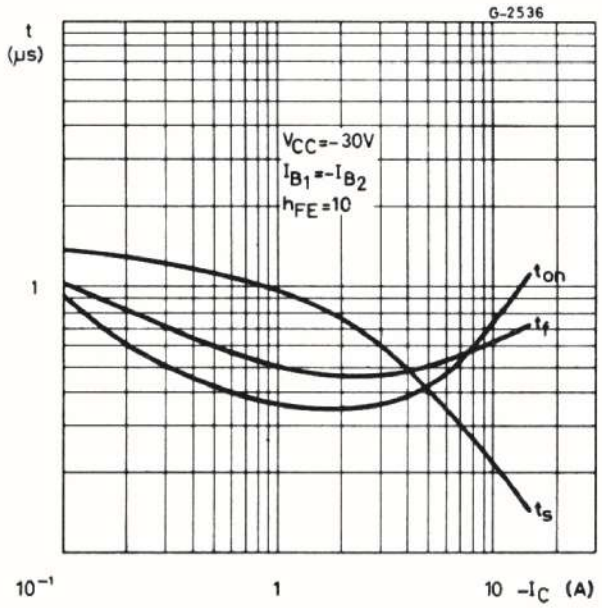
Collector-base capacitance



Transition frequency



Saturated switching characteristics



Power rating chart