-2A / -30V Bipolar transistor

2SB1714

●Applications

Low frequency amplification, driver

●**Features**

1) Collector current is high.

2) Low collector-emitter saturation voltage.

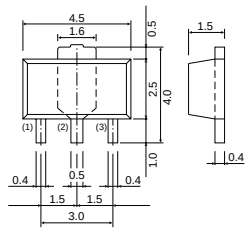
($V_{CE(sat)} \leq$ -370mV, at I_C = -1.5A, I_B = -75mA)

●**Structure**

PNP epitaxial planar silicon transistor

●**External dimensions** (Unit : mm)

MPT3



(1)Base
(2)Collector
(3)Emitter

Abbreviated symbol : XY

●**Absolute maximum ratings** (Ta=25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	–30	V
Collector-emitter voltage		V_{CEO}	–30	V
Emitter-base voltage		V_{EBO}	–6	V
Collector current	DC	I_C	–2	A
	Pulse	I_{CP}	–4 ∗1	
Power dissipation		P_C	0.5 ∗2	W
			2 ∗3	
Junction temperature		Tj	150	°C
Storage temperature		Tstg	–55 to +150	°C

∗1 Pw=1ms, Pulsed.
∗2 Each terminal mounted on a recommended land.
∗3 Mounted on a 40×40×0.7mm ceramic board.

●**Packaging specifications**

	Package	MPT3
	Packaging type	Taping
	Code	T100
Part No.	Basic ordering unit (pieces)	1000
2SB1714		◯

●**Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	–30	–	–	V	I_C= –1mA
Collector-base breakdown voltage	BV_{CBO}	–30	–	–		I_C= –10μA
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–		I_E= –10μA
Collector cut-off current	I_{CBO}	–	–	–100	nA	V_{CB}= –30V
Emitter cut-off current	I_{EBO}	–	–	–100		V_{EB}= –6V
Collector-emitter saturation voltage	$V_{CE(sat)}$ ∗	–	–180	–370	mV	I_C/I_B= –1.5A/ –75A
DC current gain	h_{FE}	270	–	680	–	V_{CE}= –2V, I_C= –200mA
Transition frequency	f_T	–	280	–	MHz	V_{CE}= –2V, I_E=200mA , f=100MHz
Collector output capacitance	Cob	–	20	–	pF	V_{CB}= –10V , I_E=0mA , f=1MHz

∗ Pulsed

●**Electrical characteristics curves**

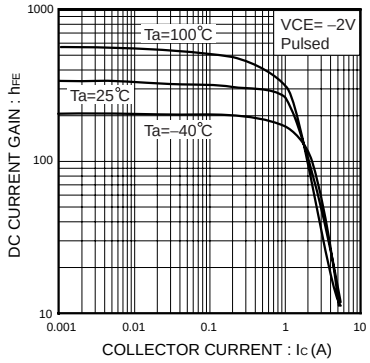


Fig.1 DV current gain vs. collector current

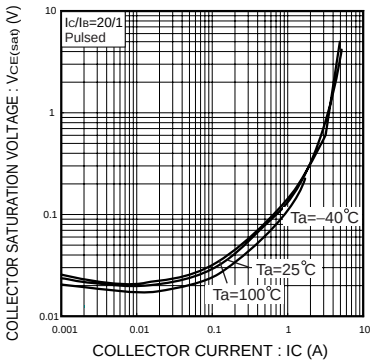


Fig.2 Collector-emitter saturation voltage vs. collector current

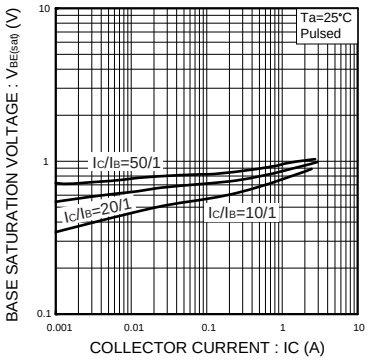


Fig.3 Base-emitter saturation voltage vs. collectir current

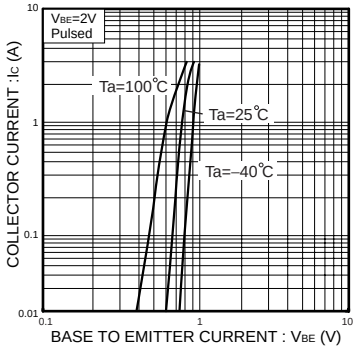


Fig.4 Grounded emitter propagation characteristics

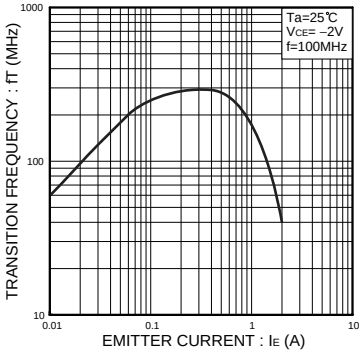


Fig.5 Gain bandwidth product vs. emitter curent

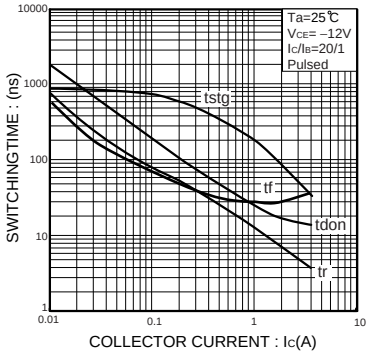


Fig.6 Switching time

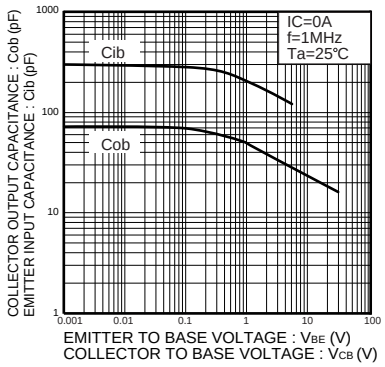


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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