-3A / -12V Bipolar transistor

2SB1713

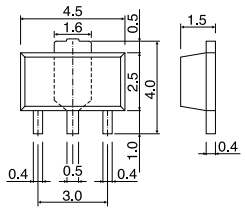
●Applications
Low frequency amplification, driver

●Features
1) Collector current is high.
2) Low collector-emitter saturation voltage.
(Typ. = -250mV, at I_C = -1.5A, I_B = -30mA)

●Structure
PNP epitaxial planar silicon transistor

●Dimensions (Unit : mm)

MPT3



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

Abbreviated symbol : XW

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	–15	V
Collector-emitter voltage		V_{CEO}	–12	V
Emitter-base voltage		V_{EBO}	–6	V
Collector current	DC	I_C	–3	A
	Pulse	I_{CP}	–6 ∗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
2SB1713		○

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	–12	–	–	V	I_C= –1mA
Collector-base breakdown voltage	BV_{CBO}	–15	–	–		I_C= –10μA
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–		I_E= –10μA
Collector cut-off current	I_{CBO}	–	–	–100	nA	V_{CB}= –15V
Emitter cut-off current	I_{EBO}	–	–	–100		V_{EB}= –6V
Collector-emitter saturation voltage	$V_{CE(sat)}$ ∗	–	–120	–250	mV	I_C/I_B= –1.5A/ –30mA
DC current gain	h_{FE}	270	–	680	–	V_{CE}= –2V, I_C= –500mA
Transition frequency	f_T	–	280	–	MHz	V_{CE}= –2V, I_E=500mA , f=100MHz
Collector output capacitance	Cob	–	30	–	pF	V_{CB}= –10V , I_E=0mA , f=1MHz

∗ Pulsed

●Electrical characteristics curves

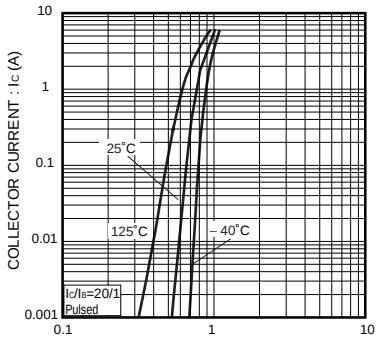


Fig.1 Grounded emitter propagation characterisitics

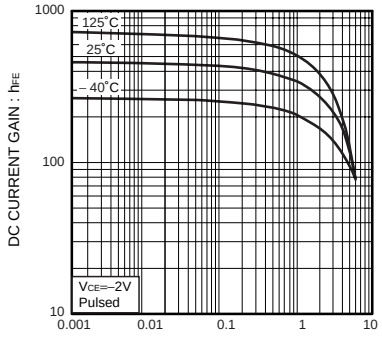


Fig.2 DC current gain vs. collector current

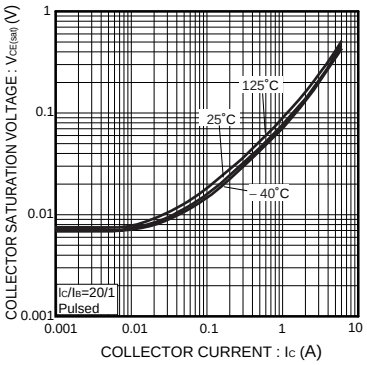


Fig.3 Collector-emitter saturation voltage vs. collector current

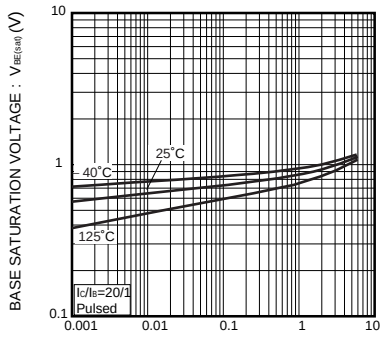


Fig.4 Base–emitter saturation voltage vs.collector current

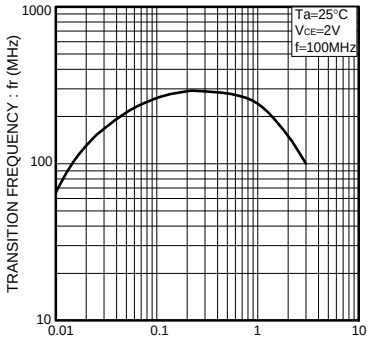


Fig.5 Gain bandwidth product vs. emitter current

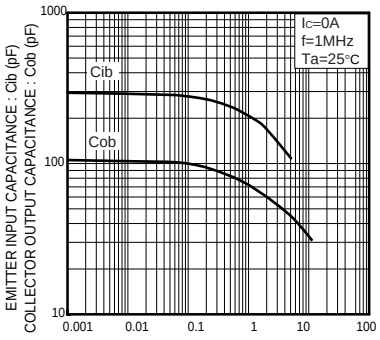


Fig 6. Emitter input capacitance vs. emitter-base volatage
Collector output capacitance vs. collector-base voltage

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