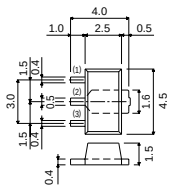
Power transistor (–20V, –2A)

2SB1427

●Features

1) Low saturation voltage,
   V_{CE} : Max. –0.5V at I_C/I_B = –1A / –50mA.
2) Excellent DC current gain characteristics.

●External dimensions (Unit : mm)



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

ROHM : MPT3
EIAJ : SC-62

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	–20	V
Collector-emitter voltage	V_{CEO}	–20	V
Emitter-base voltage	V_{EBO}	–6	V
Collector current	I_C	–2	A(DC)
		–3	A(Pulse) ∗1
Collector power dissipation	P_C	0.5	W ∗2
		2	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 ~ +150	°C

∗1 Single pulse, Pw=10ms
∗2 When mounted on a 40×40×0.7mm ceramic board.

●Packaging specifications and h_{FE}

Type	2SB1427
Package	MPT3
h_{FE}	E
Marking	BJ ∗
Code	T100
Basic ordering unit (pieces)	1000

∗ Denotes h_{FE}

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	–20	–	–	V	I_C = –50μA
Collector-emitter breakdown voltage	BV_{CEO}	–20	–	–	V	I_C = –1mA
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–	V	I_E = –50μA
Collector cutoff current	I_{CBO}	–	–	–0.5	μA	V_{CB} = –16V
Emitter cutoff current	I_{EBO}	–	–	–0.5	μA	V_{EB} = –5V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	–0.5	V	I_C/I_B = –1A/–50mA ∗
DC current transfer ratio	h_{FE}	390	–	820	–	V_{CE}/I_C = –6V/–0.5A
Transition frequency	f_T	–	90	–	MHz	V_{CE} = –10V , I_E = 10mA , f= 100MHz
Output capacitance	Cob	–	30	–	pF	V_{CB} = –10V , I_E = 0A , f = 1MHz

∗ Measured using pulse current.

●Electrical characteristics curves

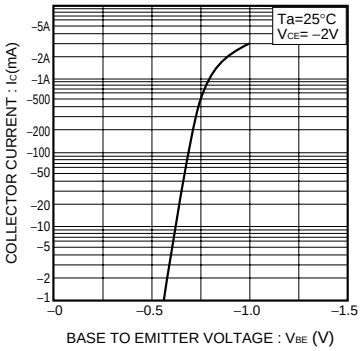


Fig.1 Grounded emitter propagation characteristics

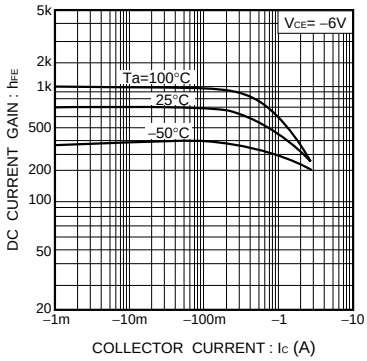


Fig.2 DC current gain vs. collector current

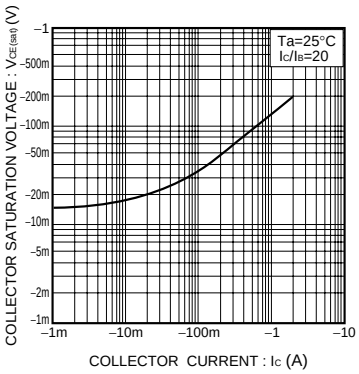


Fig.3 Collector-emitter saturation voltage vs. collector current

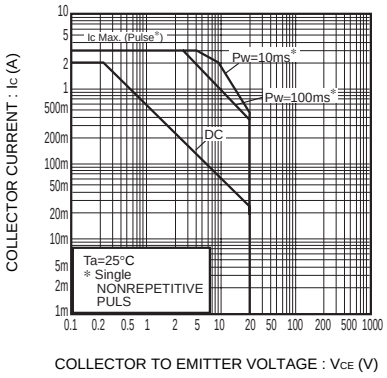


Fig.4 Safe Operating area

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