

Transistors

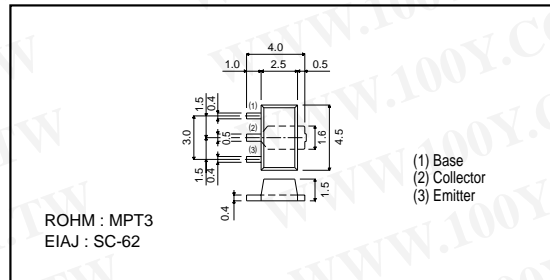
Power transistor (−20V, −2A)

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)



●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	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

*1 Single pulse, $P_W=10ms$

*2 When mounted on a 40×40×0.7mm ceramic board.

●Packaging specifications and hFE

Type	2SB1427
Package	MPT3
hFE	E
Marking	BJ *
Code	T100
Basic ordering unit (pieces)	1000

* Denotes hFE

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-20	-	-	V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-20	-	-	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	-6	-	-	V	$I_E = -50\mu A$
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	hFE	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	C_{ob}	-	30	-	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current.

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●Electrical characteristics curves

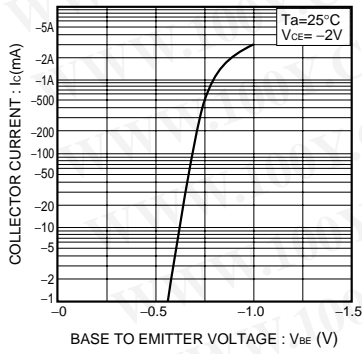


Fig.1 Grounded emitter propagation characteristics

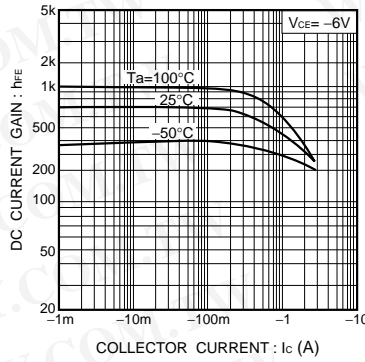


Fig.2 DC current gain vs. collector current

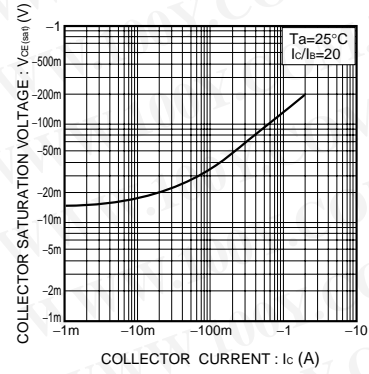


Fig.3 Collector-emitter saturation voltage vs. collector current

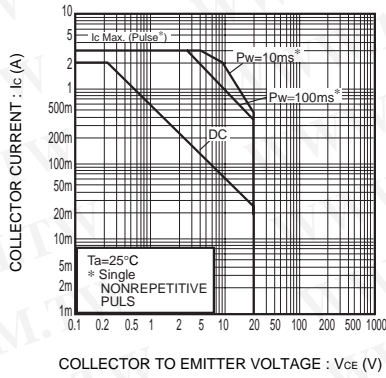


Fig.4 Safe Operating area

Appendix

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