

Low $V_{CE(sat)}$ Transistor ($-20V$, $-3A$)

2SB1424 / 2SA1585S

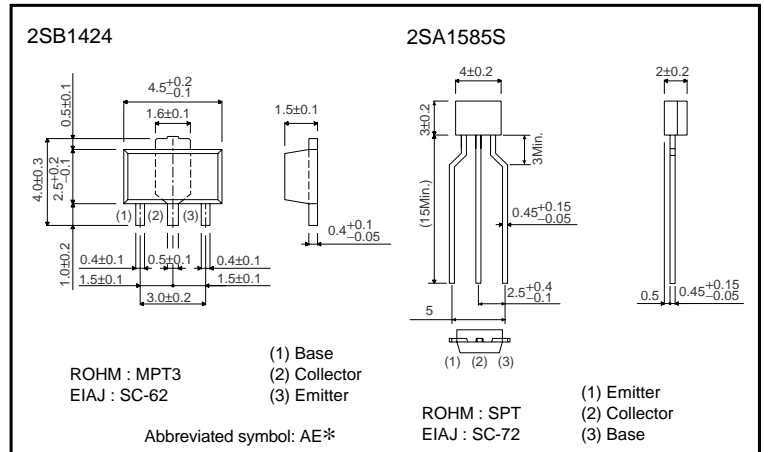
●Features

- 1) Low $V_{CE(sat)}$.
 $V_{CE(sat)} = -0.2V$ (Typ.)
 $(I_C/I_B = -2A / -0.1A)$
- 2) Excellent DC current gain characteristics.
- 3) Complements the 2SD2150 / 2SC4115S.

●Structure

Epitaxial planar type
 PNP silicon transistor

●External dimensions (Unit : mm)



* Denotes hFE

●Absolute maximum ratings ($T_a=25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	-20	V
Collector-emitter voltage	V_{CE0}	-20	V
Emitter-base voltage	V_{EB0}	-6	V
Collector current	2SB1424	-3	A
	2SA1585S	-2	
	I_{CP}	-5	A(Pulse) *
Collector power dissipation	2SB1424	0.5	W
	2SA1585S	0.4	
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55 to 150	$^\circ C$

* Single pulse $P_w=10ms$

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●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	-20	-	-	V	I _c = -50μA
Collector-emitter breakdown voltage	BV _{CE0}	-20	-	-	V	I _c = -1mA
Emitter-base breakdown voltage	BV _{EB0}	-6	-	-	V	I _E = -50μA
Collector cutoff current	I _{CB0}	-	-	-0.1	μA	V _{CB} = -20V
Emitter cutoff current	I _{EB0}	-	-	-0.1	μA	V _{EB} = -5V
Collector-emitter saturation voltage	V _{CE(sat)}	-	-	-0.5	V	I _c /I _B = -2A/ -0.1A
DC current transfer ratio	h _{FE}	120	-	390	-	V _{CE} = -2V, I _c = -0.1A
Transition frequency	f _T	-	240	-	MHz	V _{CE} = -2V, I _E =0.5A, f=100MHz
Output capacitance	C _{ob}	-	35	-	pF	V _{CB} = -10V, I _E =0A, f=1MHz

●Packaging specifications and h_{FE}

Type	h _{FE}	Package	Taping	
		Code	TP	T100
		Basic ordering unit (pieces)	5000	1000
2SA1585S	QR		○	-
2SB1424	QR		-	○

h_{FE} values are classified as follows :

Item	Q	R
h _{FE}	120 to 270	180 to 390

●Electrical characteristic curves

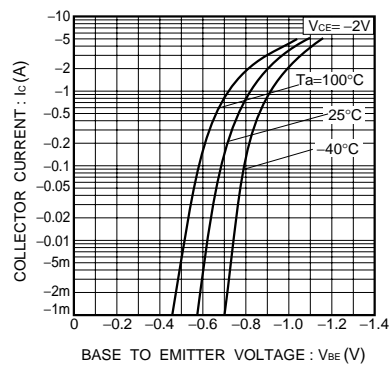


Fig.1 Grounded emitter propagation characteristics

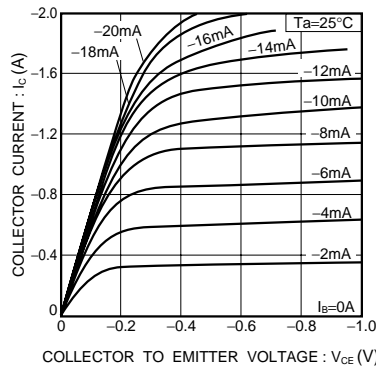


Fig.2 Grounded emitter output characteristics (I)

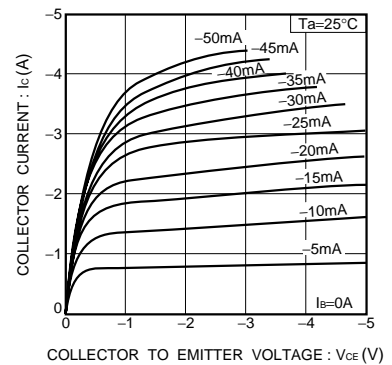


Fig.3 Grounded emitter output characteristics (II)

Transistors

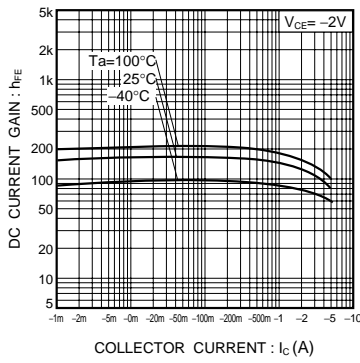


Fig.4 DC current gain vs. collector current

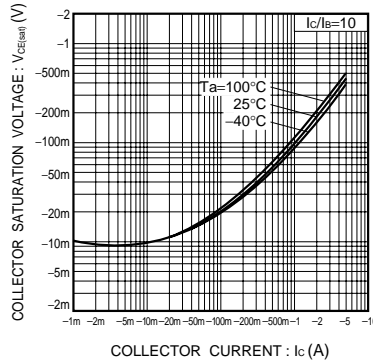


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

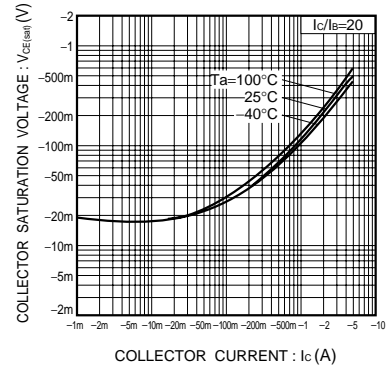


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

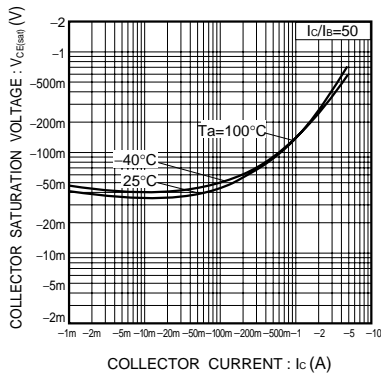


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

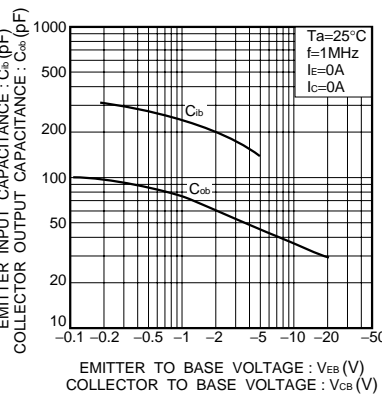


Fig.8 Gain bandwidth product vs. emitter current
Collector output capacitance vs. collector-base voltage

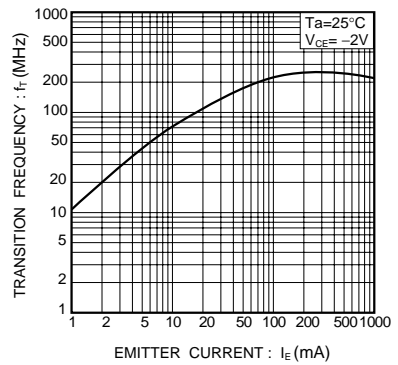


Fig.9 Emitter input capacitance vs. emitter base voltage

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