Low Frequency Transistor (20V, 3A)

2SD2150

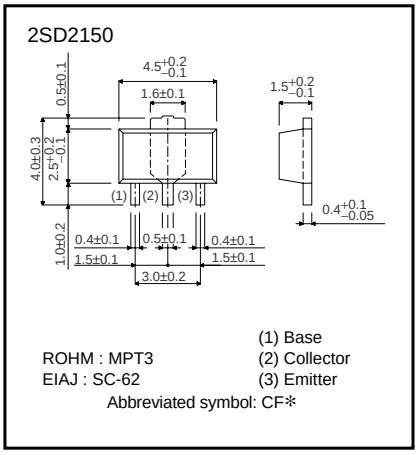
●Features

1) Low $V_{CE(sat)}$.
   $V_{CE(sat)}$ = 0.2V(Typ.)
   (I_C / I_B = 2A / 0.1A)
2) Excellent current gain characteristics.
3) Complements the 2SB1424.

●Structure

Epitaxial planar type
NPN silicon transistor

●External dimensions (Unit : mm)



∗ Denotes h_{FE}

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	3	A (DC)
		5	A (Pulse) ∗1
Collector power dissipation	P_C	0.5	W
		2	W ∗2
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

∗1 Single pulse Pw=10ms
∗2 Mounted on a 40×40×0.7mm Ceramic substrate.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	40	–	–	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}	–	–	0.1	μA	V_{CB}=30V
Emitter cutoff current	I_{EBO}	–	–	0.1	μA	V_{EB}=5V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	0.2	0.5	V	I_C/I_B=2A/0.1A ✻
DC current transfer ratio	h_{FE}	120	–	560	–	V_{CE}=2V, I_C=0.1A
Transition frequency	f_T	–	290	–	MHz	V_{CE}=2V, I_E= –0.5A, f=100MHz
Output capacitance	Cob	–	25	–	pF	V_{CE}=10V, I_E=0A, f=1MHz

✻ Measured using pulse current.

●Packaging specifications and h_{FE}

Type	h_{FE}	Package	Taping
		Code	T100
		Basic ordering unit (pieces)	1000
2SD2150	RS		○

h_{FE} values are classified as follows :

Item	R	S
h_{FE}	180 to 390	270 to 560

●Electrical characteristic curves

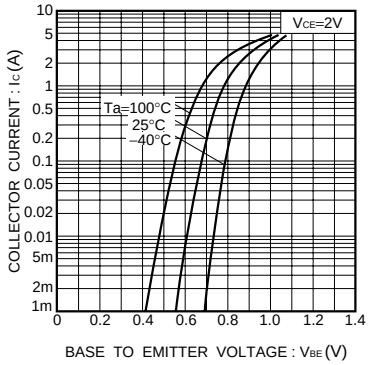


Fig.1 Grounded emitter propagation characteristics

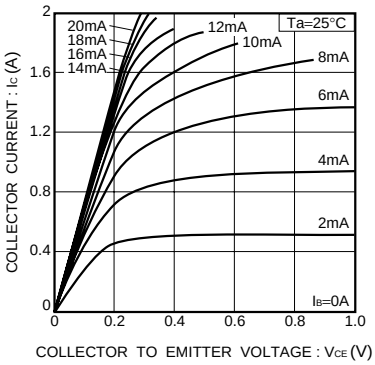


Fig.2 Grounded emitter output characteristics (I)

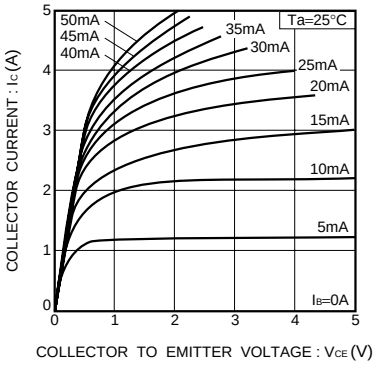


Fig.3 Grounded emitter output characteristics (II)

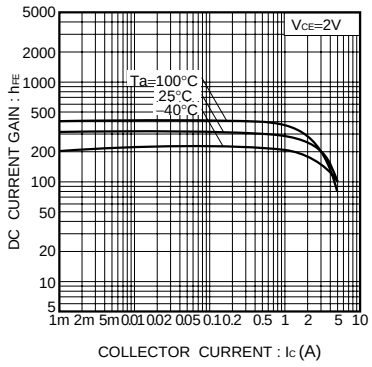


Fig.4 DC current gain vs. collector current

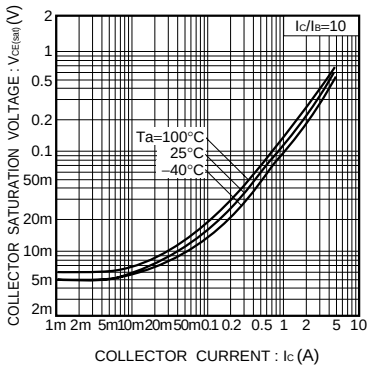


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

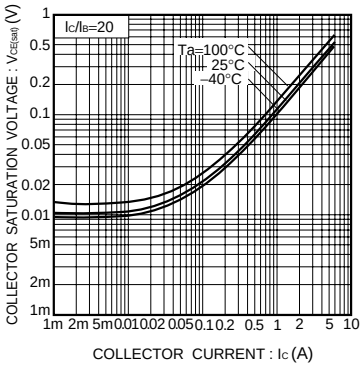


Fig.6 Collector-emitter saturation voltage vs. collector curren (II)

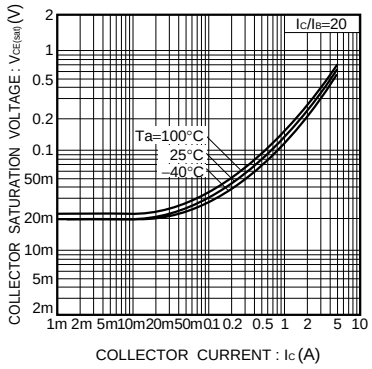


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

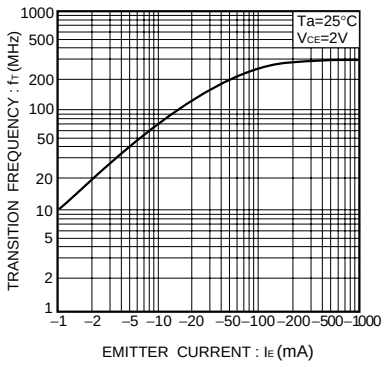


Fig.8 Gain bandwidth product vs. emitter current

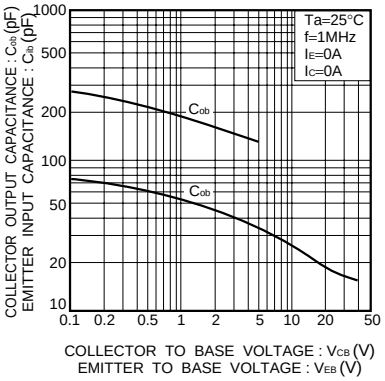


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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