

Low Frequency Transistor (20V, 3A)

2SD2150

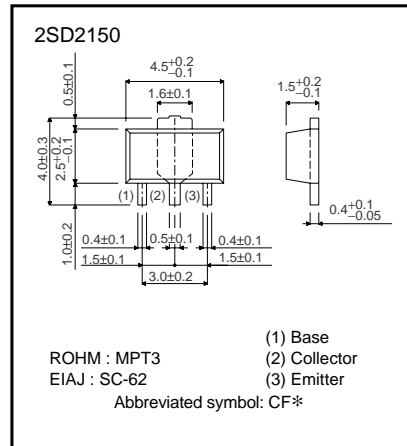
●Features

- 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 hFE

●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	T_J	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

*1 Single pulse $P_w=10ms$

*2 Mounted on a 40×40×0.7mm Ceramic substrate.

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	40	–	–	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} =30V
Emitter cutoff current	I _{EB0}	–	–	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	C _{ob}	–	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

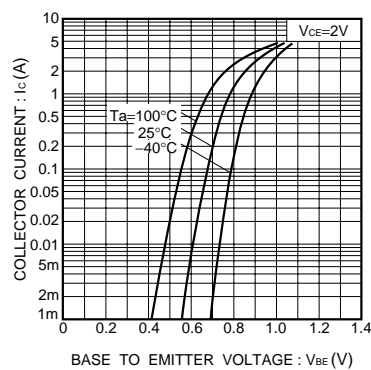


Fig.1 Grounded emitter propagation characteristics

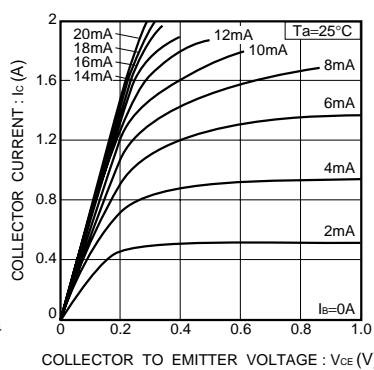


Fig.2 Grounded emitter output characteristics (I)

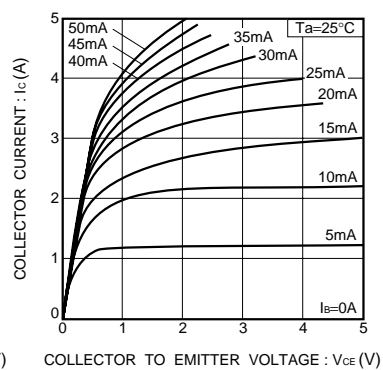


Fig.3 Grounded emitter output characteristics (II)

Transistors

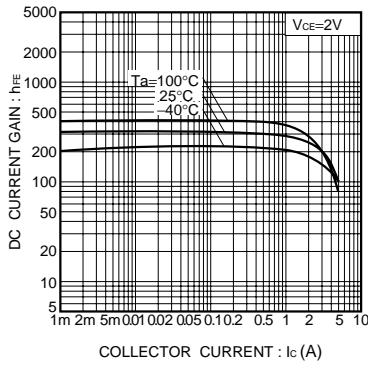


Fig.4 DC current gain vs. collector current

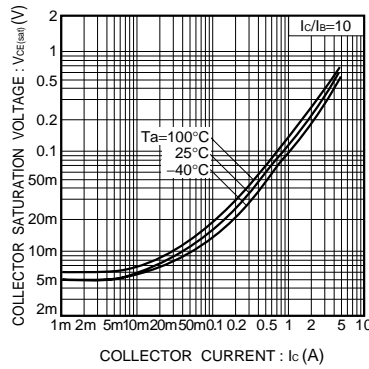


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

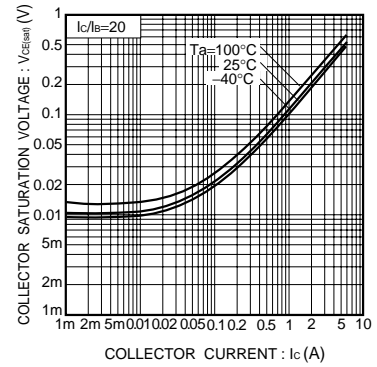


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

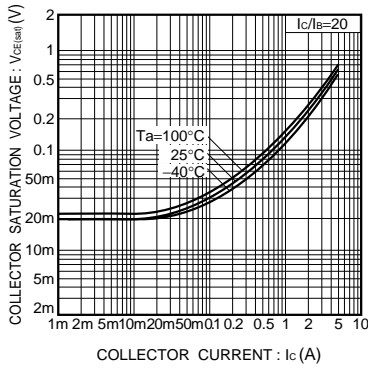


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

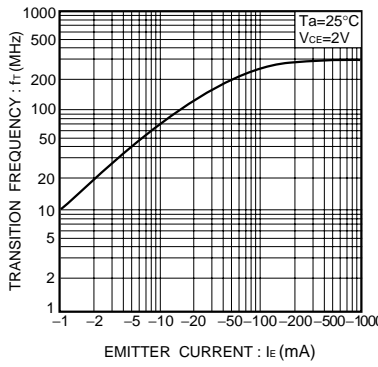


Fig.8 Gain bandwidth product vs. emitter current

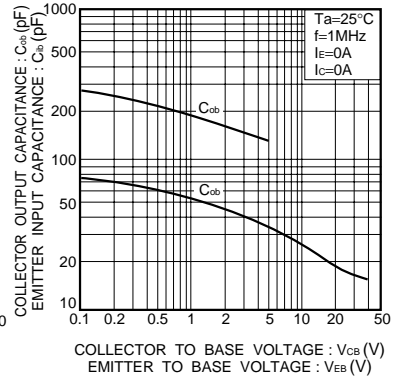


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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