

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

●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 $P_w=10ms$

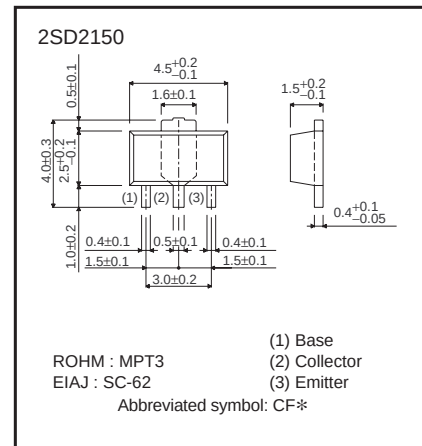
*2 Mounted on a 40×40×0.7mm Ceramic substrate.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	40	—	—	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}	—	—	0.1	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	C_{ob}	—	25	—	pF	$V_{CE}=10V, I_E=0A, f=1MHz$

* Measured using pulse current.

●Dimensions(Unit : mm)



* Denotes h_{FE}

●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

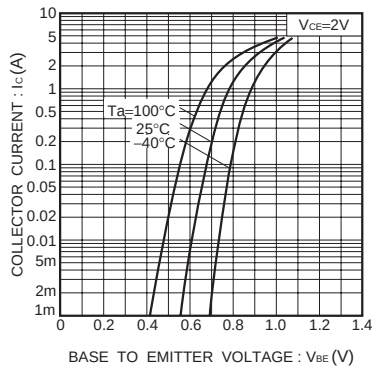


Fig.1 Grounded emitter propagation characteristics

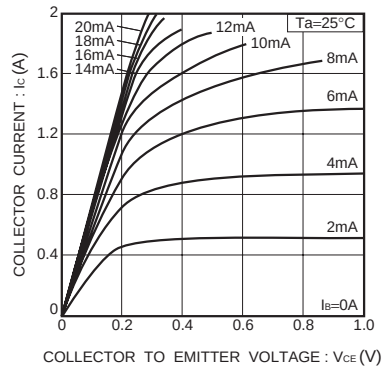


Fig.2 Grounded emitter output characteristics (I)

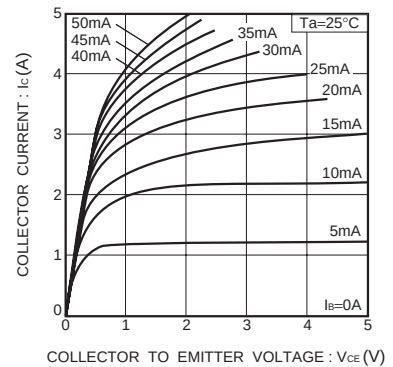


Fig.3 Grounded emitter output characteristics (II)

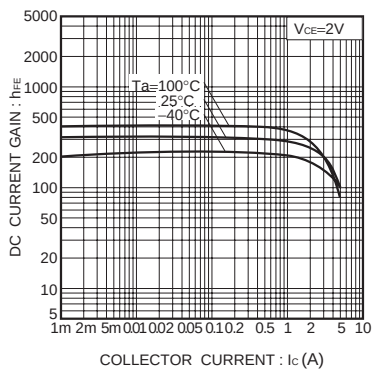


Fig.4 DC current gain vs. collector current

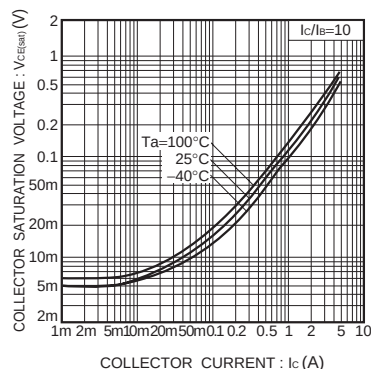


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

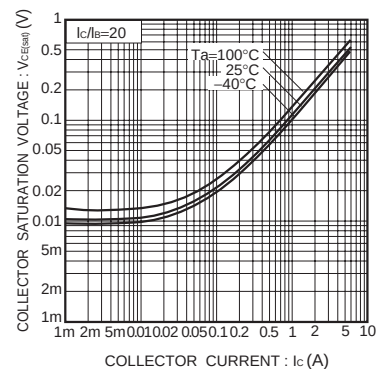


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

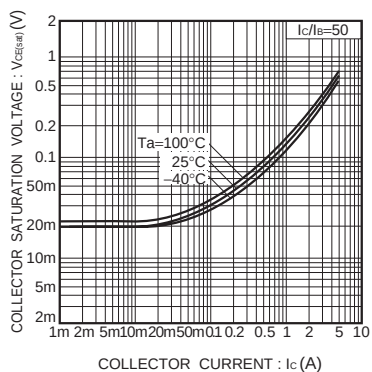


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

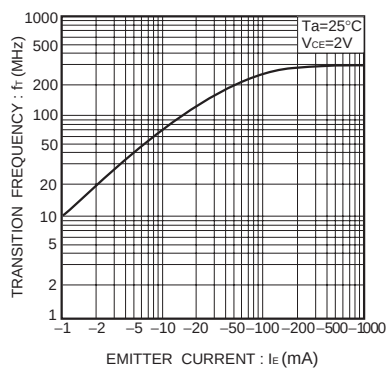


Fig.8 Gain bandwidth product vs. emitter current

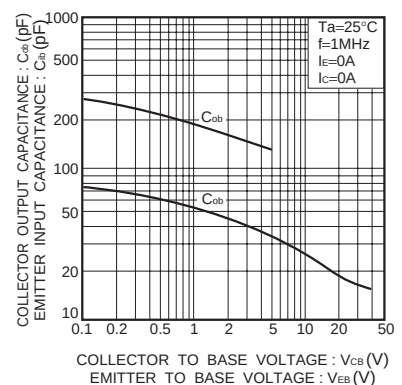


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

Notes

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