

2SD2150

1) Low $V_{CE(sat)}$.

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

Epitaxial planar type
NPN silicon transistor

The drawing shows the mechanical specifications for the 2SD2150 transistor. The top view includes dimensions for the base, collector, and emitter regions, as well as overall package dimensions. The side view shows the height and base thickness.

Top View Dimensions (mm):

- Overall width: $4.5^{+0.2}_{-0.1}$
- Base width: 1.6 ± 0.1
- Collector width: 1.5 ± 0.1
- Emitter width: 1.5 ± 0.1
- Base to collector distance: 0.4 ± 0.1
- Collector to emitter distance: 0.4 ± 0.1
- Base to emitter distance: 0.5 ± 0.1
- Overall height: 1.0 ± 0.2
- Base height: 0.5 ± 0.1
- Collector height: 0.4 ± 0.1
- Emitter height: 0.4 ± 0.1

Side View Dimensions (mm):

- Overall height: $1.5^{+0.2}_{-0.1}$
- Base thickness: $0.4^{+0.1}_{-0.05}$

Legend:

- (1) Base
- (2) Collector
- (3) Emitter

Notes:

- ROHM : MPT3
- EIAJ : SC-62
- Abbreviated symbol: CF*

* Denotes h_{FF}

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	40	V
Collector-emitter voltage	V_{CE0}	20	V
Emitter-base voltage	V_{EB0}	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 Pw=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_{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.

●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

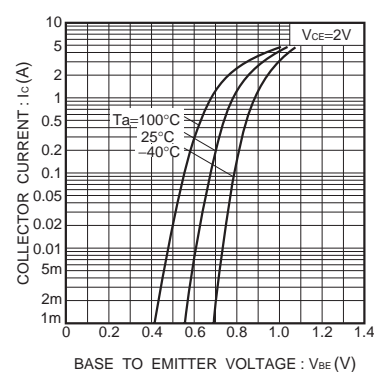


Fig.1 Grounded emitter propagation characteristics

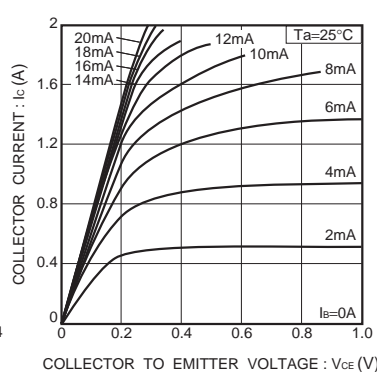


Fig.2 Grounded emitter output characteristics (I)

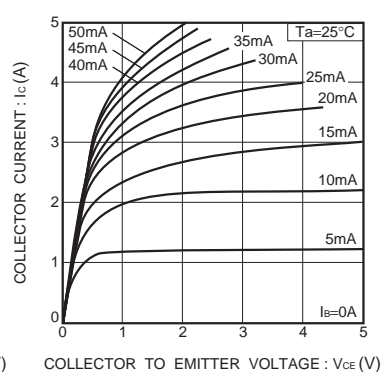


Fig.3 Grounded emitter output characteristics (II)

Transistors

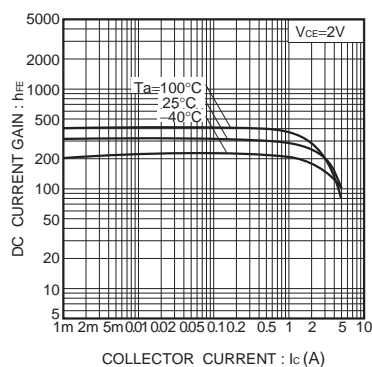


Fig.4 DC current gain vs. collector current

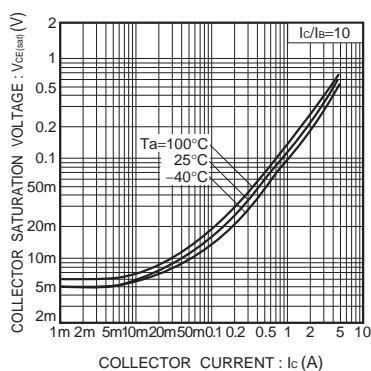


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

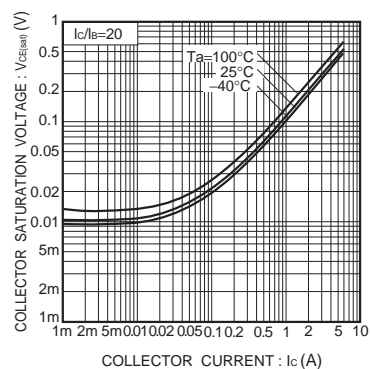


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

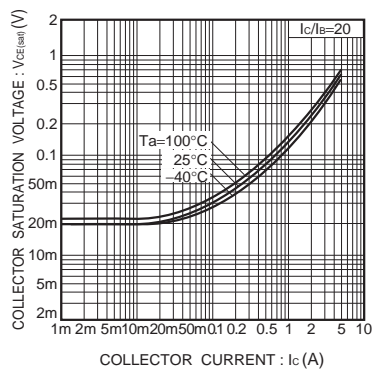


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

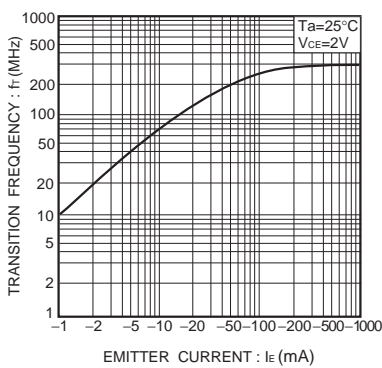


Fig.8 Gain bandwidth product vs. emitter current

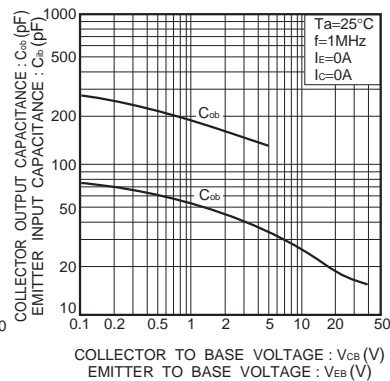


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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