

Low Frequency Transistor (20V, 3A)

2SD2150 / 2SC4115S / 2SD2264

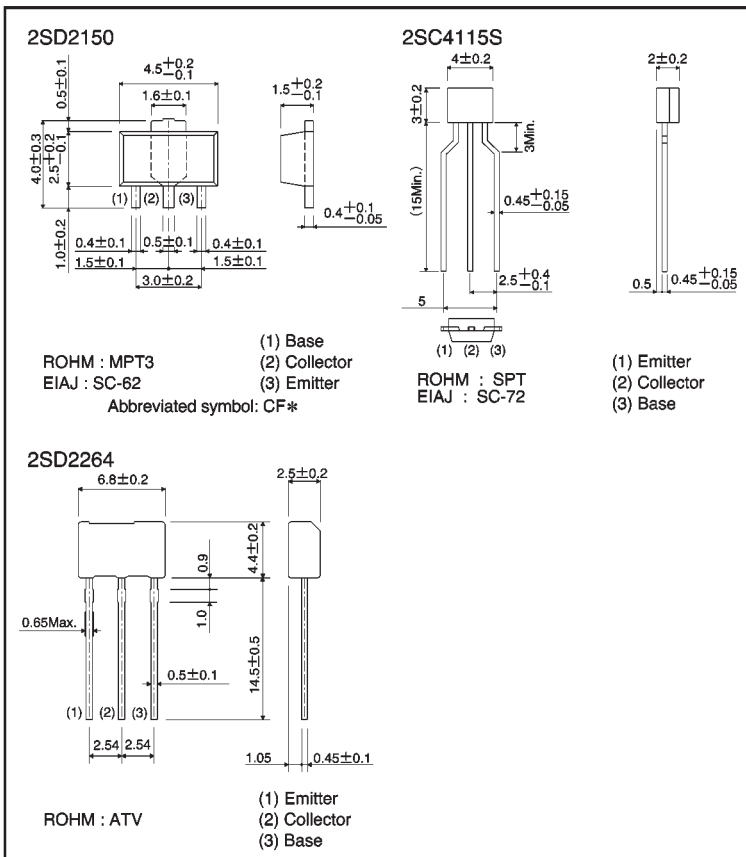
●Features

- 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 / 2SA1585S.

●Structure

Epitaxial planar type
NPN silicon transistor

●External dimensions (Units: mm)



* Denotes h_{FE}

●Absolute maximum ratings (Ta = 25°C)

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	2SD2150	P _c	0.5	W
	2SC4115S		0.3	
	2SD2264		1	
Junction temperature		T _j	150	°C
Storage temperature		T _{stg}	−55~+150	°C

*1 Single pulse P_w=10ms

*2 Printed circuit board, 1.7mm thick, collector copper plating 100mm² or larger.

●Electrical characteristics (Ta = 25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV _{CB0}	40	—	—	V	I _c =50 μA
Collector-emitter breakdown voltage		BV _{CE0}	20	—	—	V	I _c =1mA
Emitter-base breakdown voltage		BV _{EB0}	6	—	—	V	I _E =50 μA
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	2SD2150	h _{FE}	180	—	560	—	V _{CE} =2V, I _c =0.1A
	2SC4115S		120	—	560		
	2SD2264		180	—	390		
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	TP	TV2
		Basic ordering unit (pieces)	1000	5000	2500
2SD2150	RS		○	—	—
2SC4115S	QRS		—	○	—
2SD2264	R		—	—	○

h_{FE} values are classified as follows :

Item	Q	R	S
h _{FE}	120~270	180~390	270~560

●Electrical characteristic curves

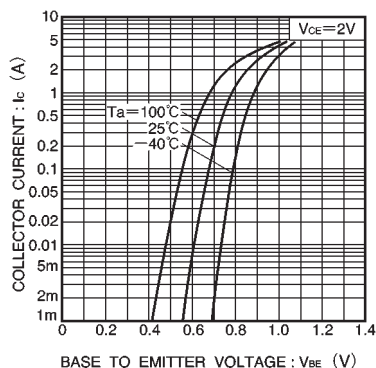


Fig.1 Grounded emitter propagation characteristics

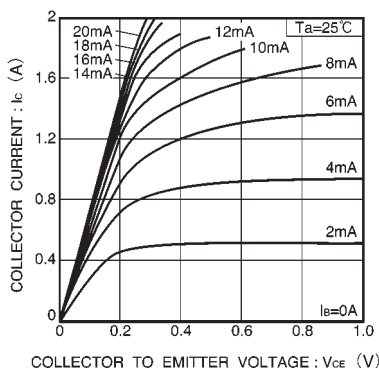


Fig.2 Grounded emitter output characteristics (I)

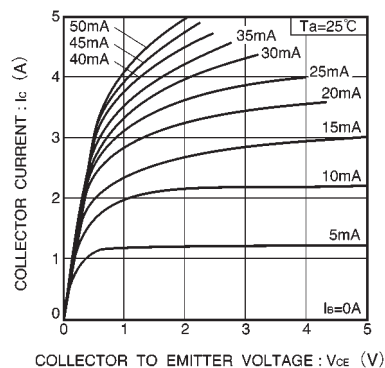


Fig.3 Grounded emitter output characteristics (II)

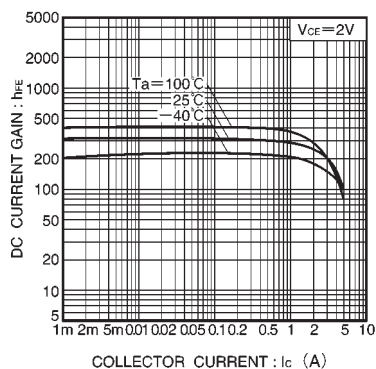


Fig.4 DC current gain vs. collector current

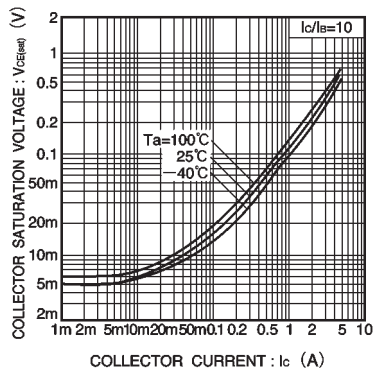


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

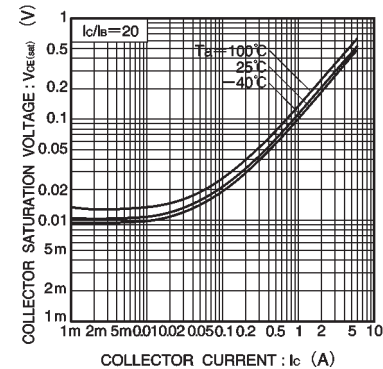


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

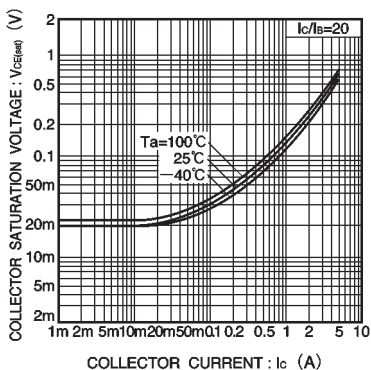


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

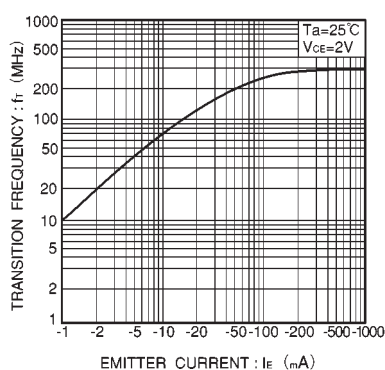
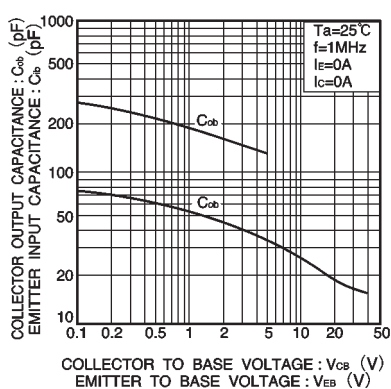


Fig.8 Gain bandwidth product vs. emitter current

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