

# Low Frequency Transistor (20V, 3A)

## 2SC4115S

### ●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 2SA1585S.

### ●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	$I_C$	2	A (DC)
		5	A (Pulse) *
Collector power dissipation	$P_C$	0.4	W
Junction temperature	$T_J$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

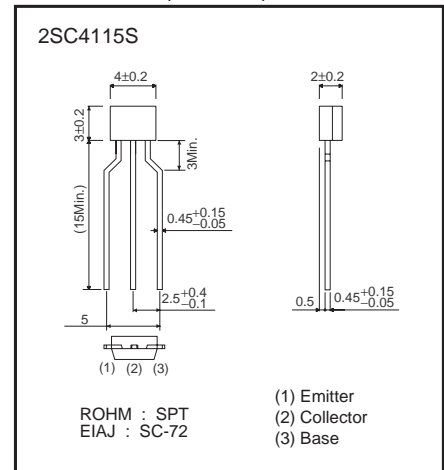
\* Single pulse Pw=10ms

### ●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	$\mu A$	$V_{CB}=30V$
Emitter cutoff current	$I_{EBO}$	-	-	0.1	$\mu A$	$V_{EB}=5V$
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	-	390	-	$V_{CE}=2V, I_C=0.1A$
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 hFE

Type	hFE	Package	Taping
		Code	TP
		Basic ordering unit (pieces)	5000
2SC4115S	QRS		○

hFE values are classified as follows :

Item	Q	R	S
hFE	120 to 270	180 to 390	270 to 560

●Electrical characteristic curves

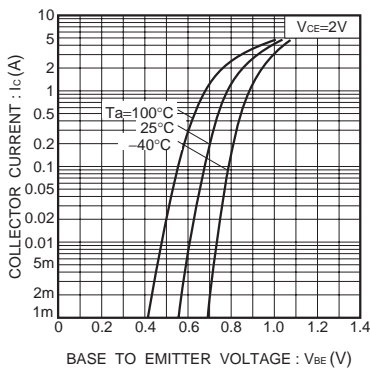


Fig.1 Grounded emitter propagation characteristics

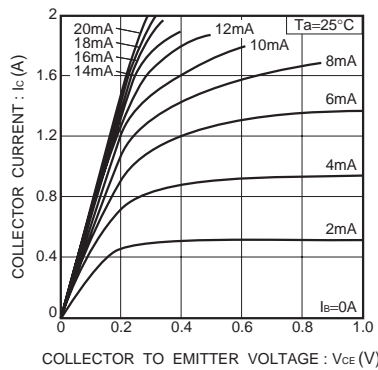


Fig.2 Grounded emitter output characteristics ( I )

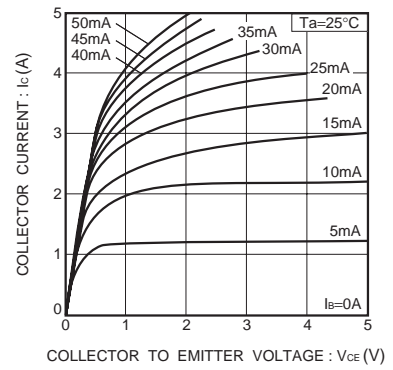


Fig.3 Grounded emitter output characteristics ( II )

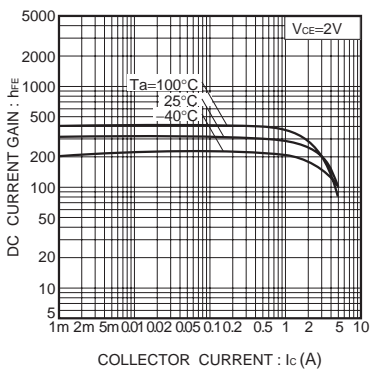


Fig.4 DC current gain vs. collector current

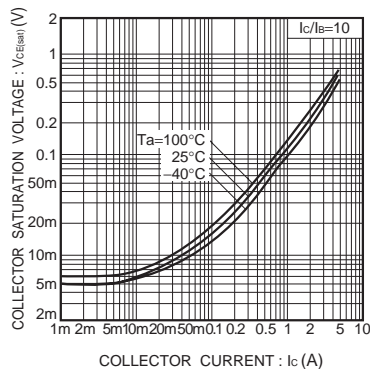


Fig.5 Collector-emitter saturation voltage vs. collector current ( I )

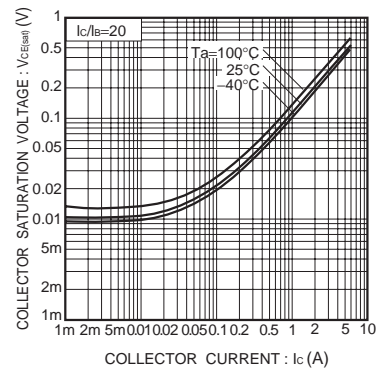


Fig.6 Collector-emitter saturation voltage vs. collector current ( II )

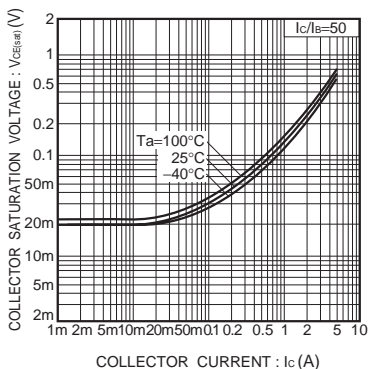


Fig.7 Collector-emitter saturation voltage vs. collector current ( III )

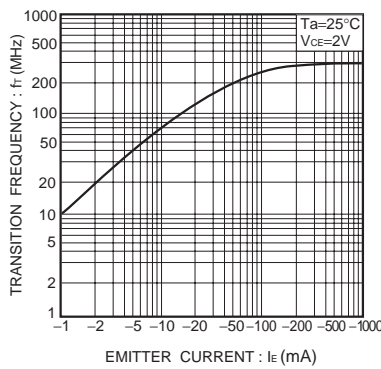


Fig.8 Gain bandwidth product vs. emitter current

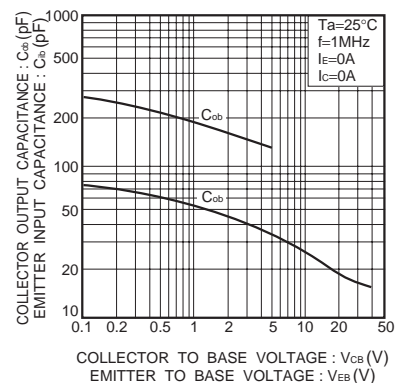


Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

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