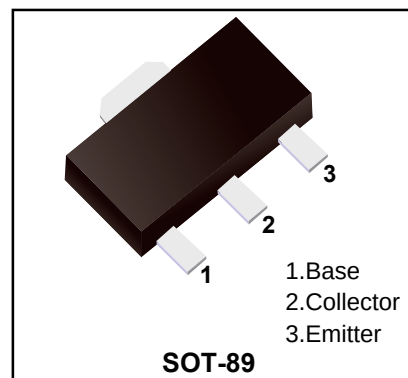


TRANSISTOR (NPN)

FEATURES

- ◆ Low $V_{CE(sat)}$. $V_{CE(sat)} = 0.2V$ (Typ.) ($I_C / I_B = 2A / 0.1A$)
- ◆ Excellent current gain characteristics.
- ◆ Complements to 2SA1585



Maximum Ratings (Ta=25°C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current -Continuous	I_C	3	A
Collector Power Dissipation	P_C	500	mW
Storage Temperature Range	T_J	-55 to +150	°C
Operation and storage temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Collector-base breakdown voltage	$I_C = 50\mu A, I_E = 0$	$V_{(BR)CBO}$	40			V
Collector-emitter breakdown voltage	$I_C = 1mA, I_B = 0$	$V_{(BR)CEO}$	20			V
Emitter-base breakdown voltage	$I_E = 50\mu A, I_C = 0$	$V_{(BR)EBO}$	6			V
Collector cut-off current	$V_{CB} = 30V, I_E = 0$	I_{CBO}			0.1	μA
Emitter cut-off current	$V_{EB} = 5V, I_C = 0$	I_{EBO}			0.1	μA
DC current gain	$V_{CE} = 2V, I_C = 0.1A$	h_{FE}	120		560	
Collector-emitter saturation voltage*	$I_C = 2A, I_B = 0.1A$	$V_{CE(sat)}$			0.5	V
Transition frequency	$V_{CE} = 2V, I_C = 0.5A, F = 100MHz$	f_T	200	290		MHz

Classification Of h_{FE}

Rank	2SC4115SI-Q	2SC4115SI-R	2SC4115SI-S
Range	120-270	180-390	270-560
Marking	4115Q	4115R	4115S

Typical Characteristics

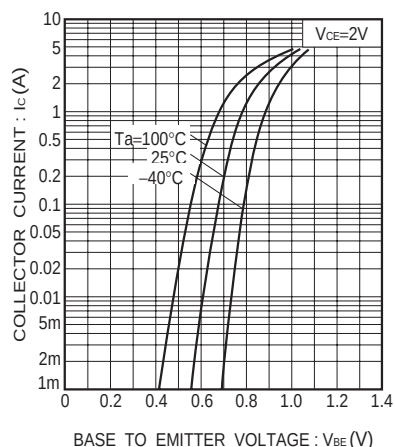


Fig.1 Grounded emitter propagation characteristics

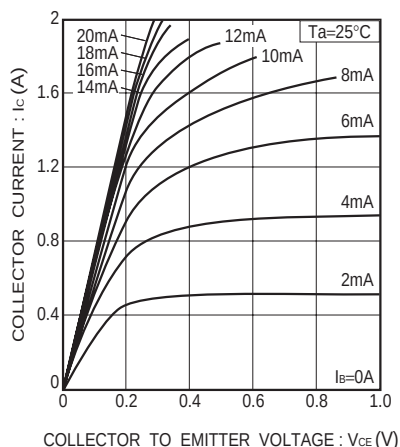


Fig.2 Grounded emitter output characteristics (I)

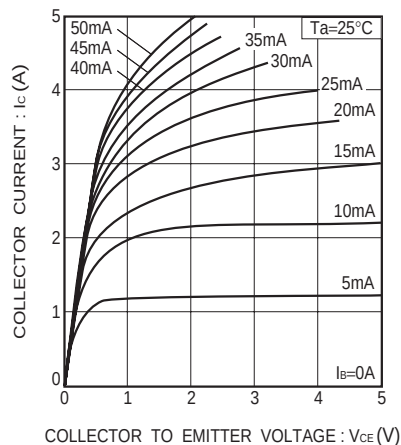


Fig.3 Grounded emitter output characteristics (II)

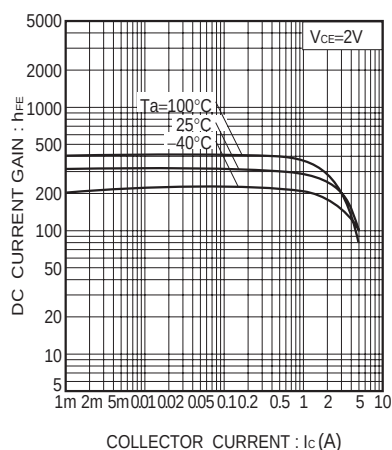


Fig.4 DC current gain vs. collector current

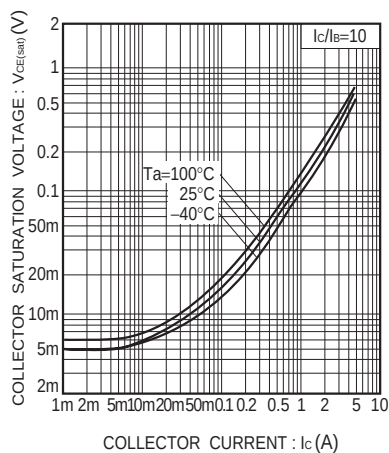


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

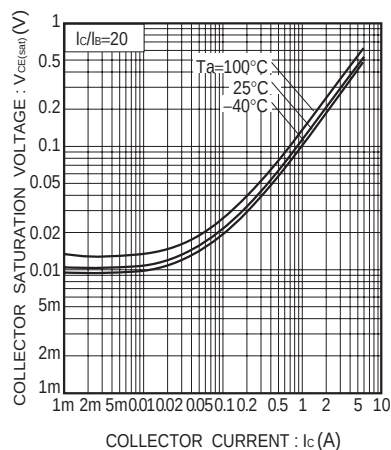


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

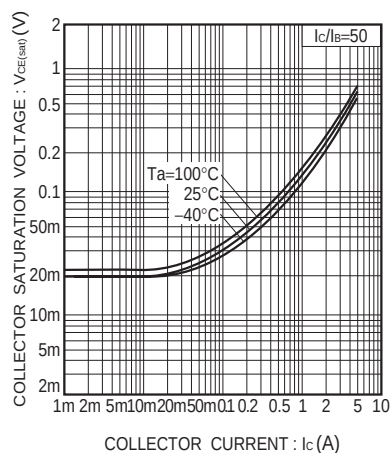


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

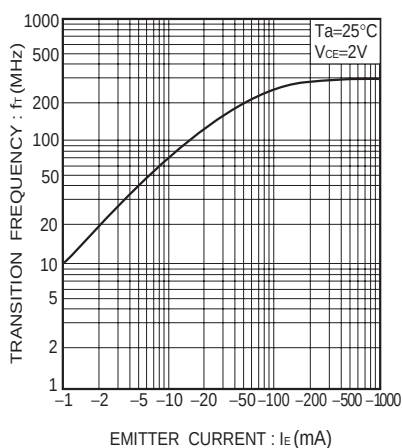


Fig.8 Gain bandwidth product vs. emitter current

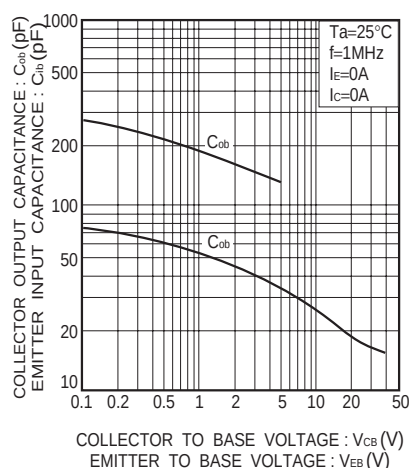


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

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