

NPN Epitaxial Planar Silicon Transistor

2SC4115

FEATURES

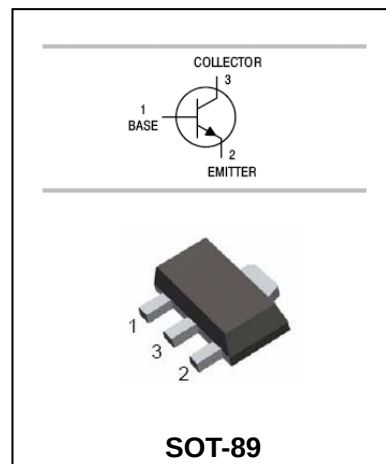
- Low $V_{CE(sat)}$.

$$V_{CE(sat)} = 0.2V \text{ (Typ.)} (I_C / I_B = 2A / 0.1A)$$

- Excellent current gain characteristics.
- Complements to 2SA1585.



Lead-free



ORDERING INFORMATION

Type No.	Marking	Package Code
2SC4115	4115G/4115R/4115S	SOT-89

MAXIMUM RATING @ $T_a=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	20	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	3.0	A
P_C	Collector Dissipation	500	mW
T_J, T_{stg}	Junction and Storage Temperature	-55 to +150	$^{\circ}\text{C}$



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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

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

CLASSIFICATION OF h_{FE}

Range	120-270	180-390	270-560
Rank	Q	R	S

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TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

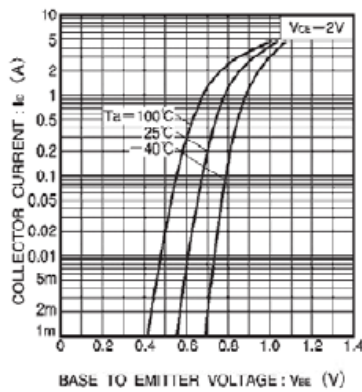


Fig.1 Grounded emitter propagation characteristics

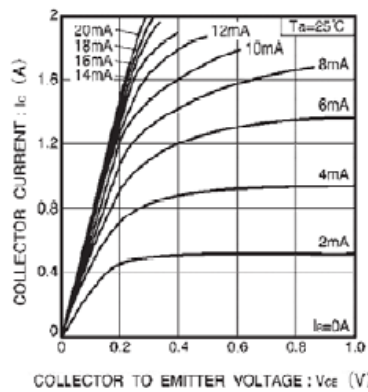


Fig.2 Grounded emitter output characteristics (I)

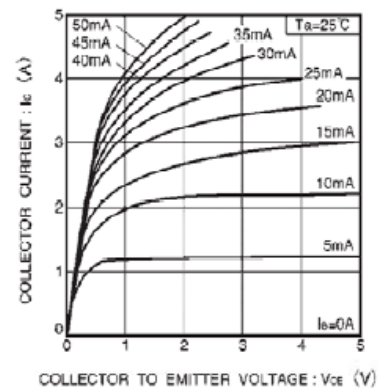


Fig.3 Grounded emitter output characteristics (II)

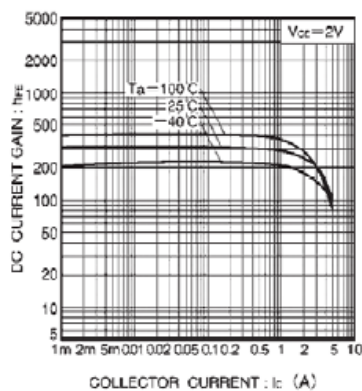


Fig.4 DC current gain vs. collector current

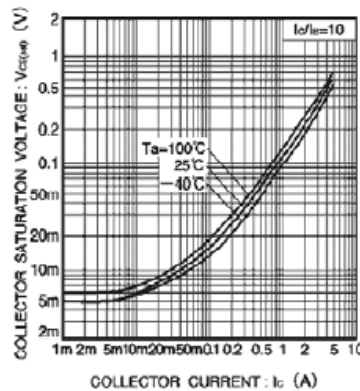


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

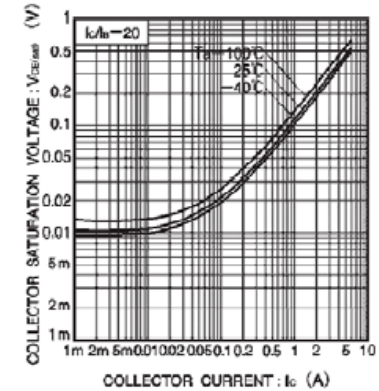


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

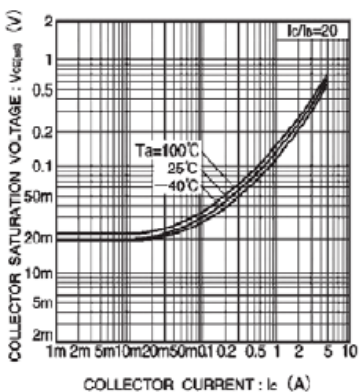


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

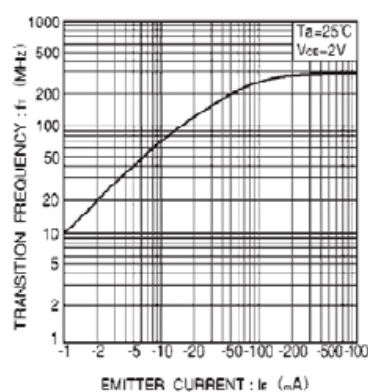


Fig.8 Gain bandwidth product vs. emitter current

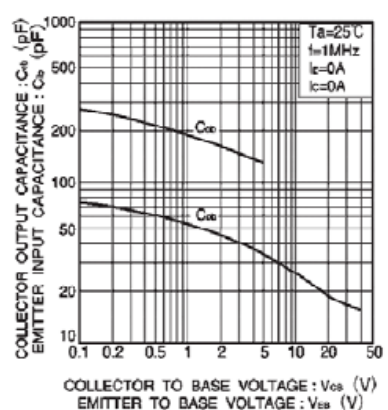


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

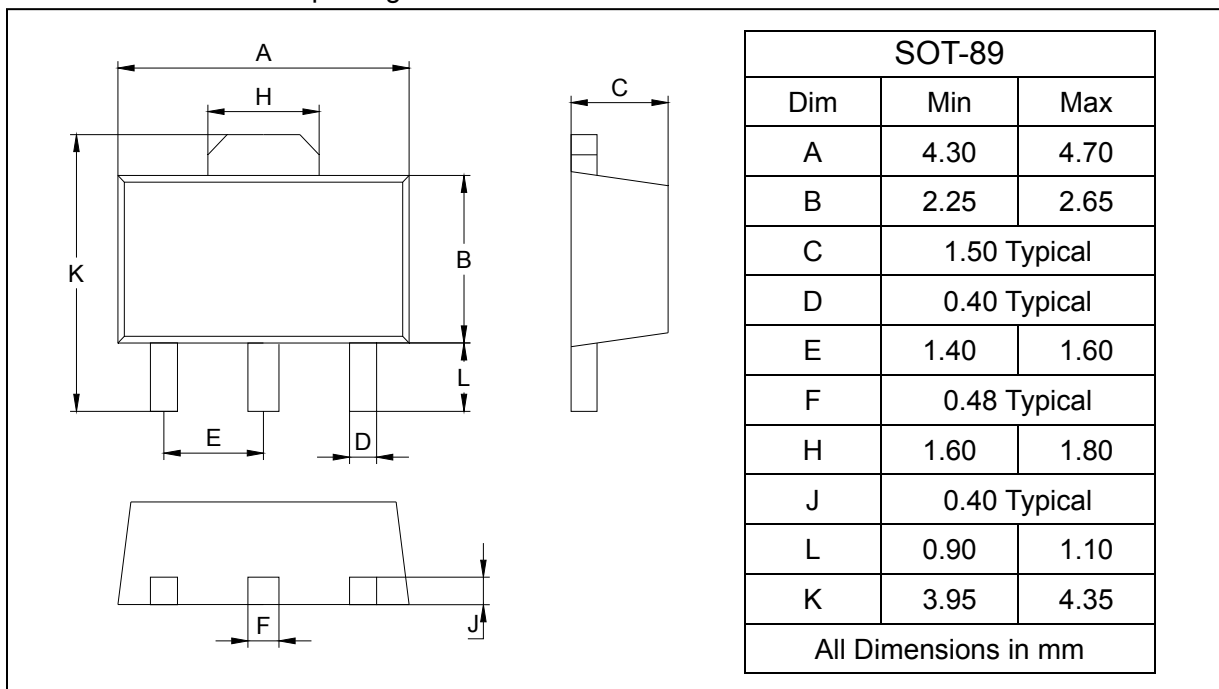
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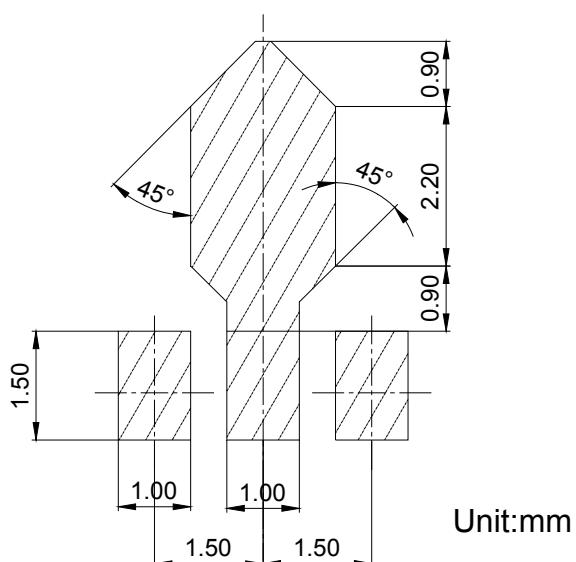
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
2SC4115	SOT-89	1000/Tape&Reel