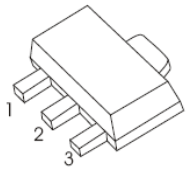
2SC4115 TRANSISTOR (NPN)

FEATURES

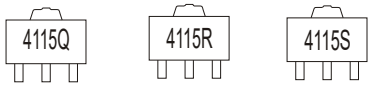
- Low $V_{CE(sat)}$.$V_{CE(sat)}$ = 0.2V (Typ.)(I_C / I_B = 2A / 0.1A)
- Excellent current gain characteristics.
- Complements to 2SA1585

SOT-89-3L



1. BASE
2. COLLECTOR
3. EMITTER

MARKING



120-270 180-390 270-560

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
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	A
P_C	Collector Power Dissipation	500	mW
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 50μA, 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=50μA, 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=0.5 A F=100MHz	200	290		MHz

***pulse test**

CLASSIFICATION OF h_{FE}

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

Typical Characteristics

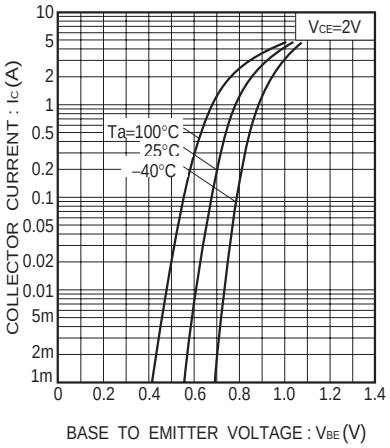


Fig.1 Grounded emitter propagation characteristics

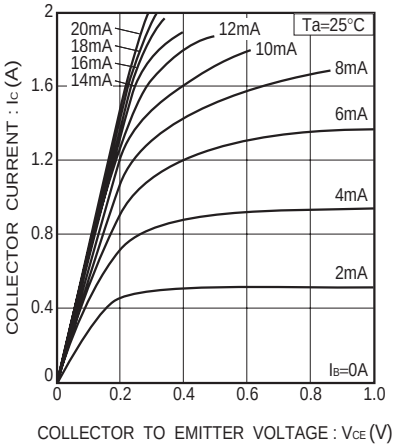


Fig.2 Grounded emitter output characteristics (I)

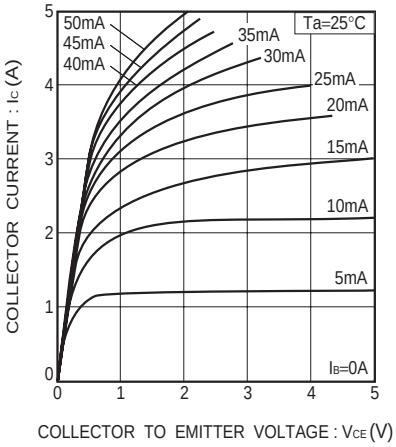


Fig.3 Grounded emitter output characteristics (II)

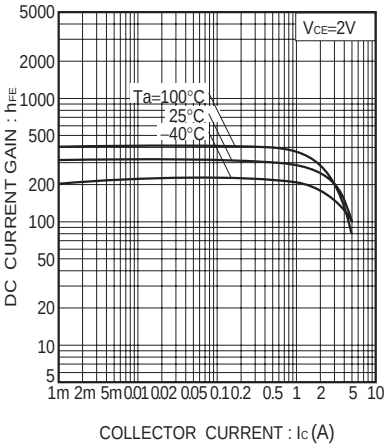


Fig.4 DC current gain vs. collector current

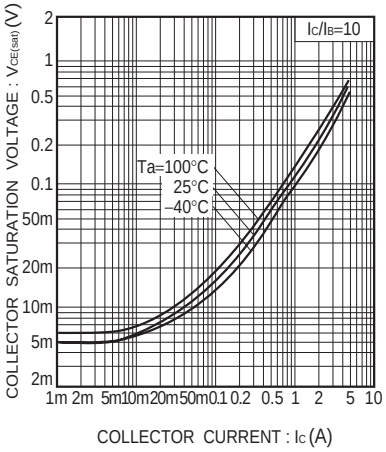


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

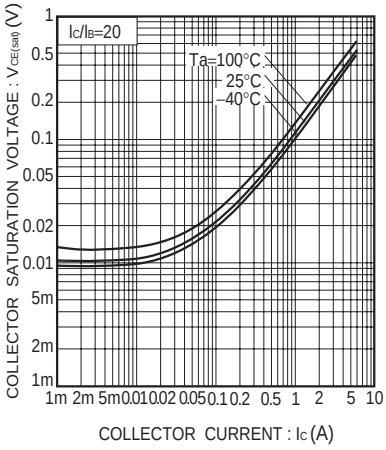


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

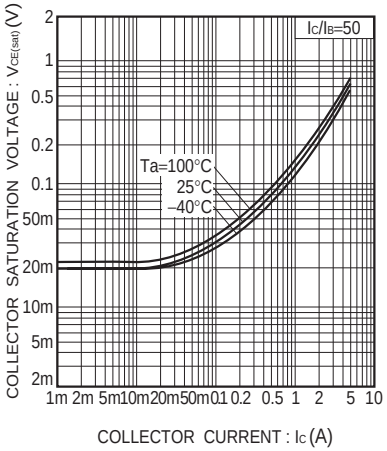


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

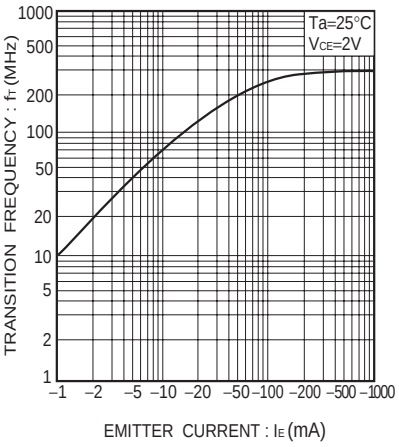


Fig.8 Gain bandwidth product vs. emitter current

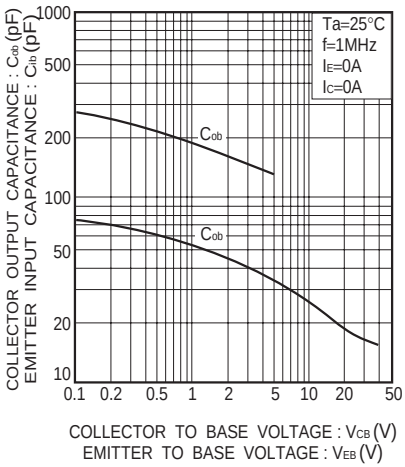


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage