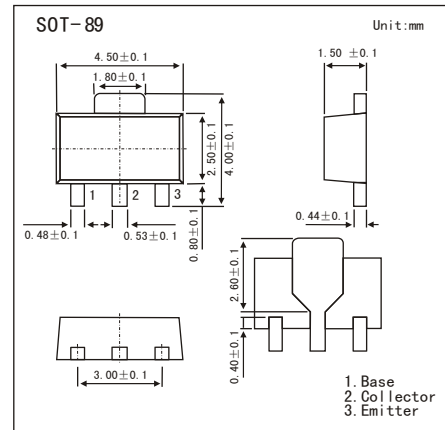


■ Features

- High breakdown voltage.
- Low collector output capacitance.
- High transition frequency .



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V _{CB0}	160	V
Collector to Emitter Voltage	V _{CEO}	160	V
Emitter to Base Voltage	V _{EB0}	5	V
Collector Current to -Continuous -Pulse (Note 1)	I _c	1.5	A
		3.0	
Collector Dissipation -Continuous -Pulse (Note 2)	P _c	0.5	W
		2.0	
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 to 150	°C

Notes: 1. P_w=200ms, duty=1/2
2. When mounted on a 40 x 40 x 0.7mm ceramic board.

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{CB0}	I _c =50uA, I _E =0	160			V
Collector-emitter breakdown voltage	V _{CEO}	I _c = 1 mA, I _B =0	160			V
Emitter-base breakdown voltage	V _{EB0}	I _E = 50 uA, I _C =0	5			V
Collector cut-off current	I _{CB0}	V _{CB} =120 V, I _E =0			1	uA
Emitter cut-off current	I _{EB0}	V _{EB} =4V, I _C =0			1	uA
DC current gain	h _{FE}	V _{CE} = 5V, I _c = 100mA	120		390	
Collector-emitter saturation voltage	V _{CE(sat)}	I _c =1A, I _B = 0.1A *			2.0	V
Base-emitter saturation voltage	V _{BE(sat)}	I _c =1A, I _B = 0.1A *			1.5	V
Output capacitance	C _{ob}	V _{CB} = 10V, I _E = 0A, f = 1MHz		20		pF
Transition frequency	f _T	V _{CE} = 5 V, I _E = -0.1A, f = 30MHz		80		MHz

* Measured using pulse current.

■ hFE Classification

Marking	DQ	DR
hFE	120~270	180~390

Typical Characteristics

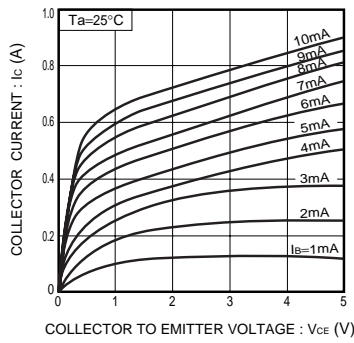


Fig.1 Ground emitter output characteristics

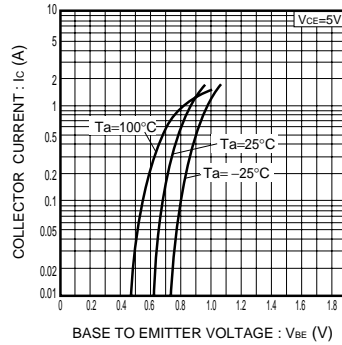


Fig.2 Ground emitter propagation characteristics

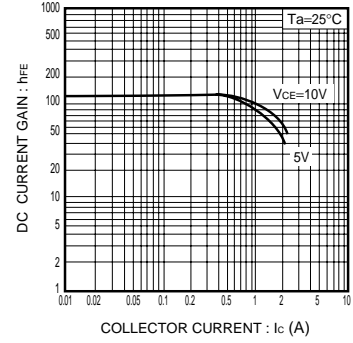


Fig.3 DC current gain vs. collector current (I)

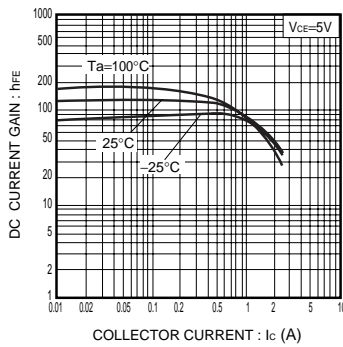


Fig.4 DC current gain vs. collector current (II)

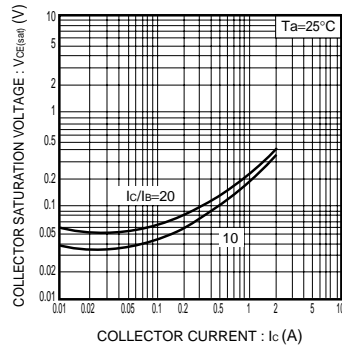


Fig.5 Collector-emitter saturation voltage vs. collector current

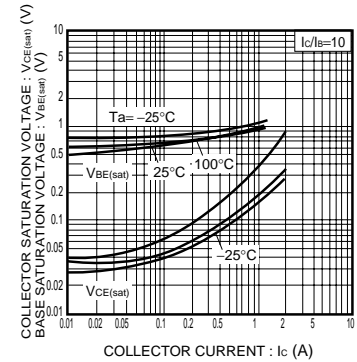


Fig.6 Collector-emitter saturation voltage vs. collector current Base-emitter saturation voltage

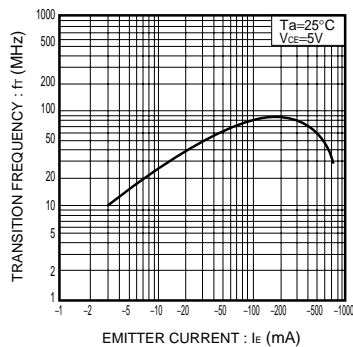


Fig.7 Gain bandwidth products vs. emitter current

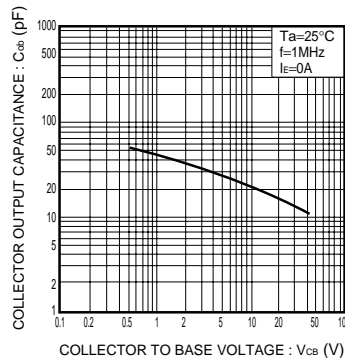


Fig.8 Collector output capacitance vs. collector-base voltage

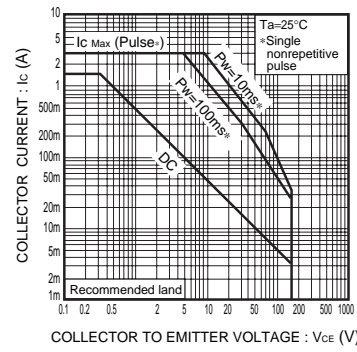


Fig.9 Safe operating area (2SD2211)