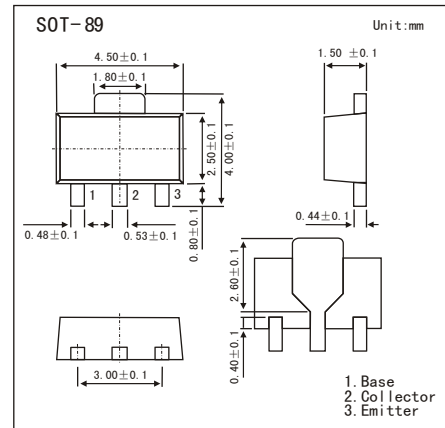


■ Features

- 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

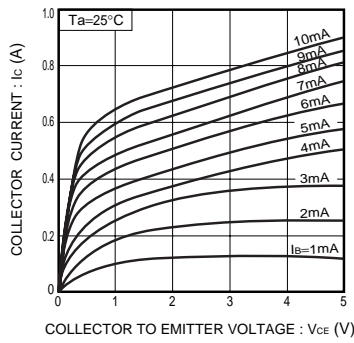


Fig.1 Ground emitter output characteristics

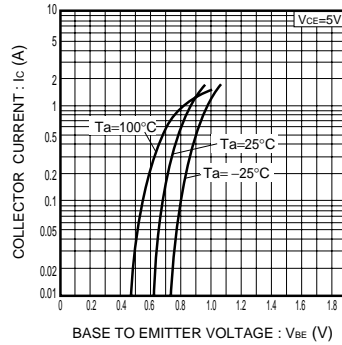


Fig.2 Ground emitter propagation characteristics

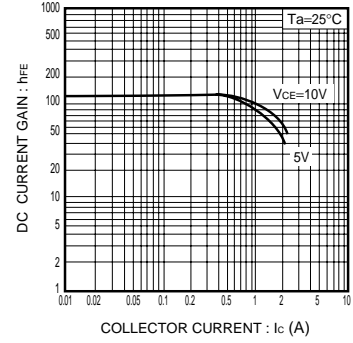


Fig.3 DC current gain vs. collector current (I)

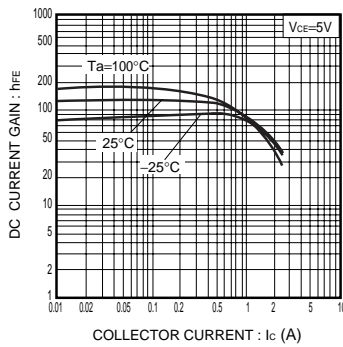


Fig.4 DC current gain vs. collector current (II)

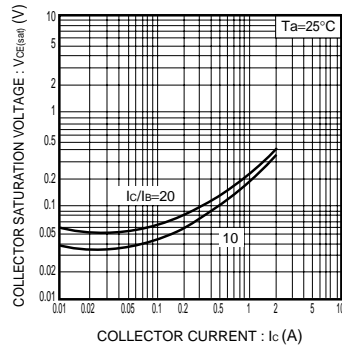


Fig.5 Collector-emitter saturation voltage vs. collector current

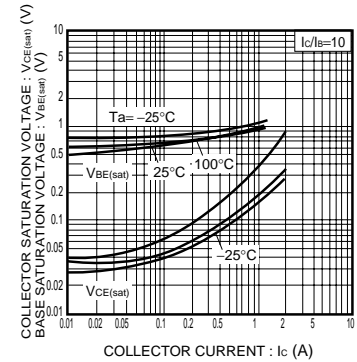


Fig.6 Collector-emitter saturation voltage vs. collector current Base-emitter saturation voltage

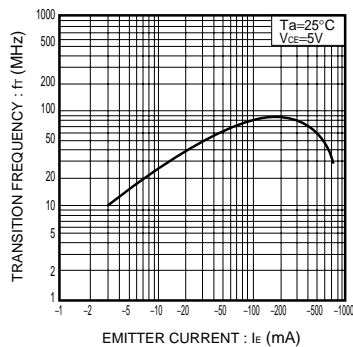


Fig.7 Gain bandwidth products vs. emitter current

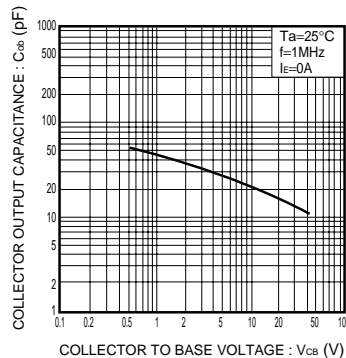


Fig.8 Collector output capacitance vs. collector-base voltage

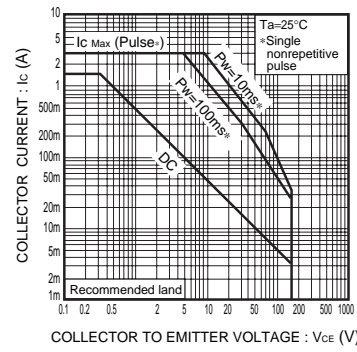


Fig.9 Safe operating area (2SD2211)