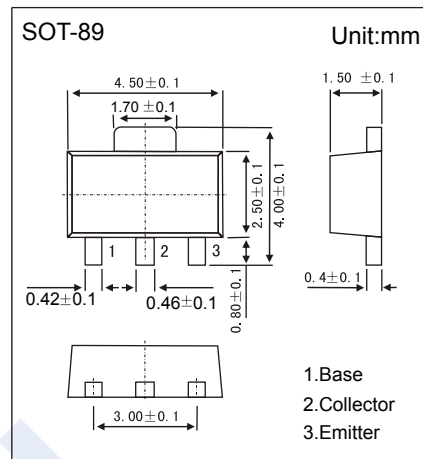


NPN Transistors

2SD2167

■ Features

- Collector Current Capability $I_C=2A$
- Collector Emitter Voltage $V_{CEO}=27V$

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	27	V
Collector - Emitter Voltage	V_{CEO}	27	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	2	A
Collector Current - Pulse	I_{CP}	3	
Collector Power Dissipation (Note.1)	P_C	0.5	W
		2	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1 :Mounted on a 40×40× 0.7mm ceramic substrate

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C=100\mu A, I_E=0$	27			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C=1mA, I_B=0$	27			
Emitter - base breakdown voltage	V_{EBO}	$I_E=100\mu A, I_C=0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB}=20V, I_E=0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2A, I_B=200mA$			1	V
		$I_C=1A, I_B=50mA$			0.5	
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C=2A, I_B=200mA$			1.2	
DC current gain	h_{FE}	$V_{CE}=3V, I_C=0.5A$	56		270	
Collector output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$		25		pF
Transition frequency	f_T	$V_{CE}=3V, I_E=0.5A, f=30MHz$		100		MHz

■ Classification of h_{FE}

Type	2SD2167-N	2SD2167-P	2SD2167-Q
Range	56-120	82-180	120-270
Marking	DL N*	DL P*	DL Q*

NPN Transistors

2SD2167

■ Typical Characteristics

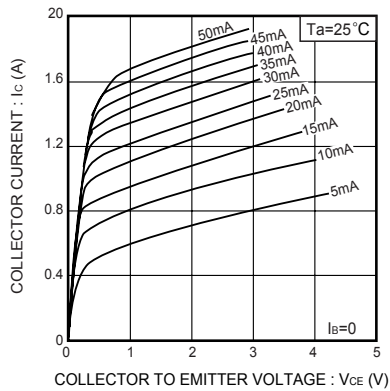


Fig.1 Ground emitter output characteristics

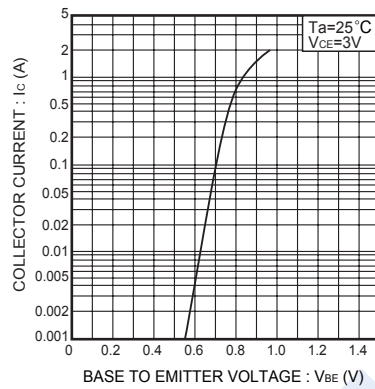


Fig.2 Ground emitter propagation characteristics

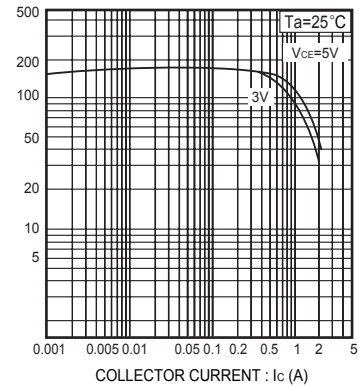


Fig.3 DC current gain vs. collector current

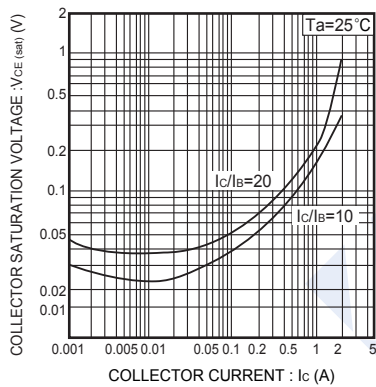


Fig.4 Collector-emitter saturation voltage vs. collector current

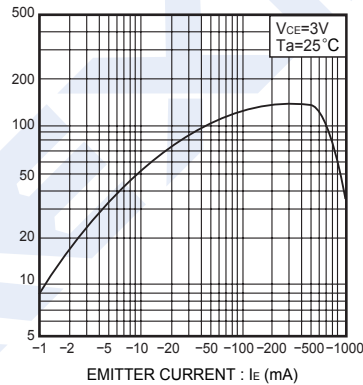


Fig.5 Resistance ratio vs. collector current

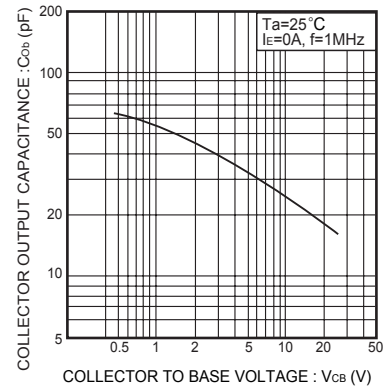


Fig.6 Collector output capacitance vs. collector-base voltage

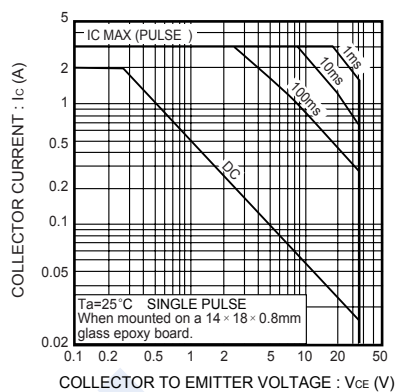


Fig.7 Safe operating area