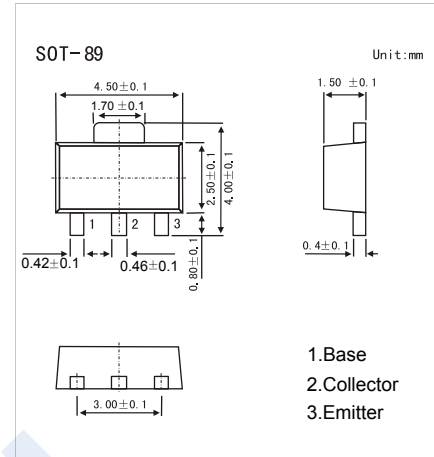


NPN Transistors

2SD1767

■ Features

- High breakdown voltage, $V_{CE0}=80V$, and high current, $I_C=0.7A$.
- Complementary to 2SB1189



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	80	V
Collector - Emitter Voltage	V_{CEO}	80	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	0.7	A
Collector Current - Pulse	I_{CP}	1	
Collector Power Dissipation	P_C	0.5	W
		2	
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CBO}	$I_C = 100 \mu A, I_E = 0$	80			V
Collector-emitter breakdown voltage	V_{CEO}	$I_C = 1 mA, I_B = 0$	80			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu A, I_C = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 60 V, I_E = 0$			0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4 V, I_C = 0$			0.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500 mA, I_B = 50 mA$		0.2	0.4	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500 mA, I_B = 50 mA$			1.2	
DC current gain	h_{FE}	$V_{CE} = 3 V, I_C = 100 mA$	120		390	
Collector Output capacitance	C_{ob}	$V_{CB} = 10 V, I_E = 0, f = 1 MHz$		10		pF
Transition frequency	f_T	$V_{CE} = 10 V, I_E = -50 mA, f = 100 MHz$		120		MHz

■ Classification of h_{FE}

Type	2SD1767-Q	2SD1767-R
Range	120-270	180-390
Marking	DC Q*	DC R*

NPN Transistors 2SD1767

Typical Characteristics

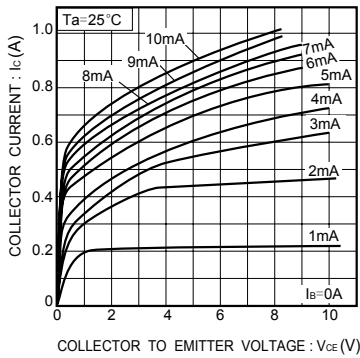


Fig.1 Ground emitter output characteristics

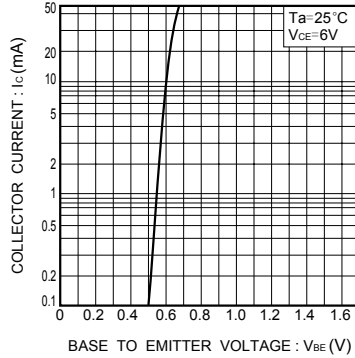


Fig.2 Ground emitter propagation characteristics

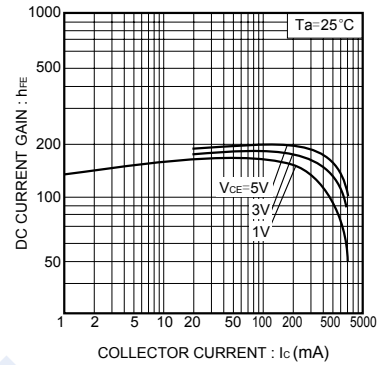


Fig.3 DC current gain vs. collector current

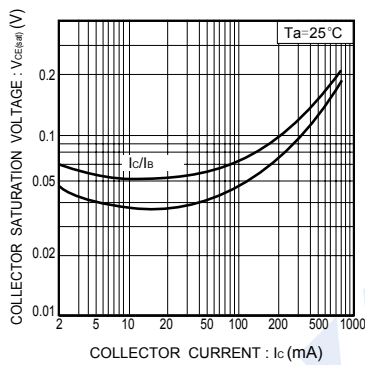


Fig.4 Collector-emitter saturation voltage vs. collector current

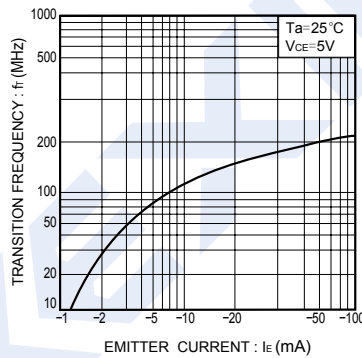


Fig.5 Resistance ratio vs. emitter current

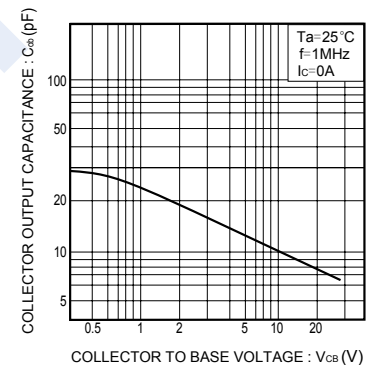


Fig.6 Collector output capacitance vs. collector-base voltage

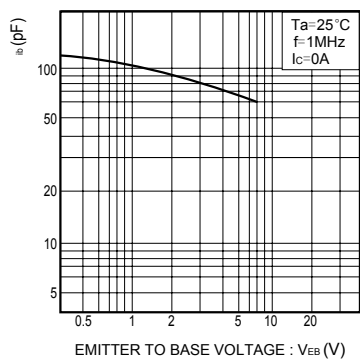


Fig.7 Emitter input capacitance vs. emitter-base voltage

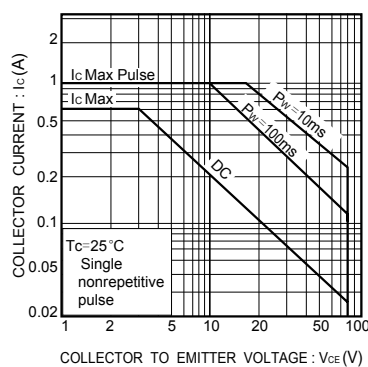


Fig.9 Safe operating area