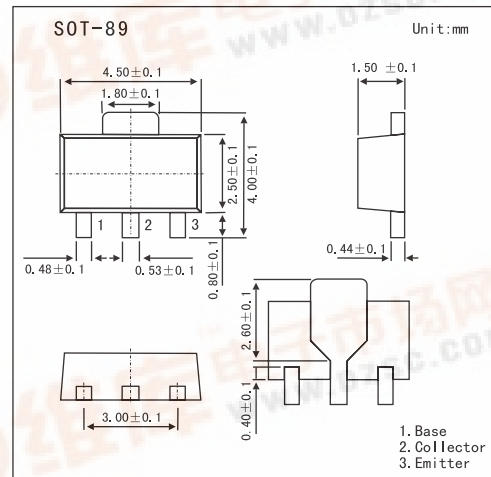


SMD Type Transistors

Silicon NPN epitaxial planar type
2SD965

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Satisfactory operation performances at high efficiency with the lowvoltage power supply.



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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	5	A
Peak collector current	I_{CP}	8	A
Collector power dissipation	P_C	0.75	W
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

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

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-emitter voltage	V_{CEO}	$I_C = 1\text{ mA}, I_B = 0$	20			V
Emitter-base voltage	V_{EBO}	$I_E = 10\ \mu A, I_C = 0$	7			V
Collector-base cutoff current	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$			0.1	μA
Collector-emitter cutoff current	I_{CEO}	$V_{CE} = 10\text{ V}, I_B = 0$			1	μA
Emitter-base cutoff current	I_{EBO}	$V_{EB} = 7\text{ V}, I_C = 0$			0.1	μA
DC current gain	h_{FE}	$V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$	230		600	
		$V_{CE} = 2\text{ V}, I_C = 2\text{ A}$	150			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 0.1\text{ A}$			1	V
Collector output capacitance	C_{ob}	$V_{CB} = 20\text{ V}, I_E = 0, f = 1\text{ MHz}$			50	pF
Transition frequency	f_T	$V_{CB} = 6\text{ V}, I_E = -50\text{ mA}, f = 200\text{ MHz}$		150		MHz

■ hFE Classification

Marking	Q	R
hFE	230~380	340~600

