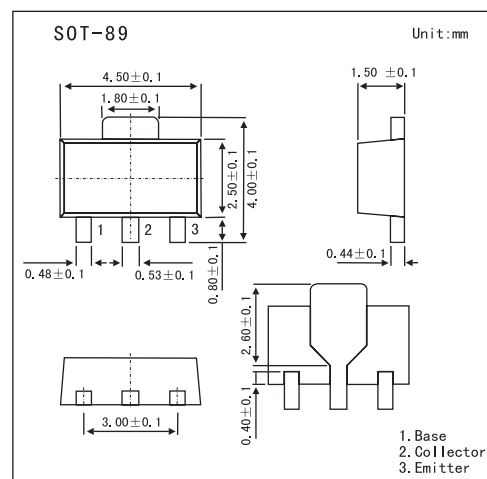


Power Transistor

2SD2167

■ Features

- Built-in zener diode between collector and base.
- Zener diode has low voltage dispersion.
- Strong protection against reverse power surges due to low loads.
- $P_C=2\text{ W}$ (on $40\times 40\times 0.7\text{ mm}$ ceramic board).

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	31 ± 4	V
Collector-emitter voltage	V_{CE0}	31 ± 4	V
Emitter-base voltage	V_{EB0}	5	V
Collector current	I_C	2	A (DC)
		3	A(Pulse)*1
Collector power dissipation	P_C	0.5	W
		2	W *2
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

*1 $P_w=20\text{ ms}$, duty=1/2

*2 When mounted on a $40 \times 40 \times 0.7\text{ mm}$ ceramic board.

2SD2167■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C=50\mu\text{A}$	27			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C=1\text{mA}$	27			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E=50\mu\text{A}$	5			V
Collector cutoff current	I_{CBO}	$V_{CB}=20\text{V}$			1	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=5\text{V}$			1	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2\text{A}, I_B=0.2\text{A}$			1	V
		$I_C=1\text{A}, I_B=50\text{mA}$		0.25	0.5	V
DC current transfer ratio	h_{FE}	$V_{CE}=3\text{V}, I_C=0.5\text{A}$	56		270	
Output capacitance	f_T	$V_{CE}=3\text{V}, I_E=-0.5\text{A}, f=30\text{MHz}$		100		MHz
Transition frequency	C_{ob}	$V_{CB}=10\text{V}, I_E=0\text{A}, f=1\text{MHz}$		25		pF

■ h_{FE} Classification

Marking	DL		
Rank	N	P	Q
h_{FE}	56~120	82~180	120~270