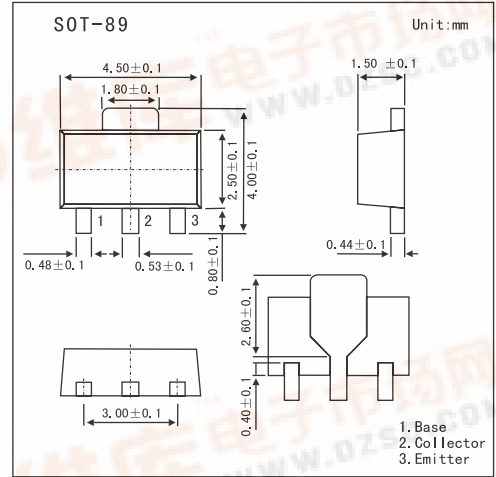


SMD Type Transistors

NPN Silicon Epitaxia  
2SD1005

■ Features

- World standard miniature package: SOT-89.
- High collector to base voltage:  $V_{CB0} > 100V$ .
- Excellent dc current gain linearity:  $h_{FE} = 80TYP.$  ( $V_{CE} = 2V, I_C = 500mA$ ).



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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	100	V
Collector-emitter voltage	$V_{CEO}$	80	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	1	A
Collector current (pulse) *	$I_C$	1.5	A
Total power dissipation at $25^\circ C$ ambient temperature *	$P_T$	2	W
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ C$

\*1.  $PW \leq 10\mu s, \text{duty cycle} \leq 50\%$

\*2. When mounted on ceramic substrate of  $16cm^2 \times 0.7mm$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 100V, I_E = 0$			100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			100	nA
DC current gain *	$h_{FE}$	$V_{CE} = 2V, I_C = 100mA$	90	200	400	
		$V_{CE} = 2V, I_C = 500mA$	25	80		
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$		0.15	0.5	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 500mA, I_B = 50mA$		0.9	1.5	V
Base-emitter voltage *	$V_{BE}$	$V_{CE} = 10V, I_C = 10mA$	600	630	700	mV
Gain bandwidth product	$f_T$	$V_{CE} = 5V, I_E = -10mA$		160		MHz
Output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1.0MHz$		12		pF

\*.  $PW \leq 350\mu s, \text{duty cycle} \leq 2\%$

■  $h_{FE}$  Classification

Marking	BW	BV	BU
$h_{FE}$	90~180	135~270	200~400

