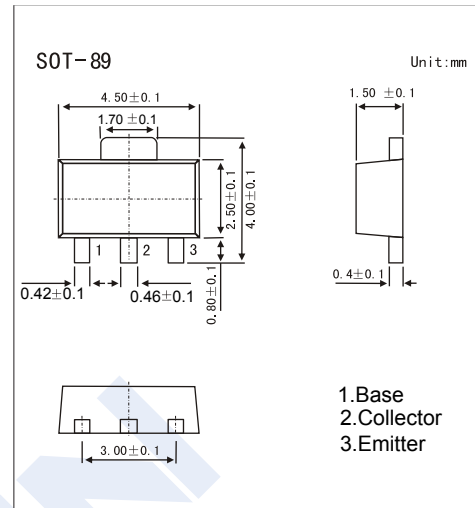


## NPN Transistors

## 2SD1007

## ■ Features

- High collector to emitter voltage:  $V_{CEO} > 120V$ .

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	120	V
Collector-emitter voltage	$V_{CEO}$	120	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	0.7	A
Collector current (pulse) *	$I_C(\text{pu})$	1.2	A
Collector power dissipation	$P_c$	2	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

\*.  $PW \leq 10\text{ms}$ , duty cycle  $\leq 50\%$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Base-emitter voltage *	$V_{BE}$	$V_{CE} = 10V, I_C = 10\text{mA}$	550	620	650	mV
Collector cutoff current	$I_{CBO}$	$V_{CB} = 120V, I_E = 0$			100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			100	nA
DC current gain *	$h_{FE}$	$V_{CE} = 1V, I_C = 5.0\text{mA}$	45	200		
		$V_{CE} = 1V, I_C = 100\text{mA}$	90	200	400	
Collector-emitter saturation voltage *	$V_{CE(\text{sat})}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$		0.3	0.6	V
Base-emitter saturation voltage *	$V_{BE(\text{sat})}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$		0.9	1.5	V
Output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1.0\text{MHz}$		10		pF
Transition frequency	$f_T$	$V_{CE} = 10V, I_E = -10\text{mA}$		90		MHz

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

■  $h_{FE}$  Classification(2)

Marking	HR	HQ	HP
$h_{FE}$	90~180	135~270	200~400