



## DESCRIPTION

The 2SD1007 is available in SOT-89 package

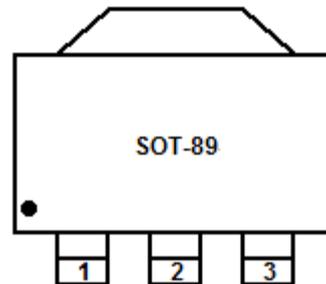
## FEATURES

- High collector emitter voltage:  $V_{CE0} > 120V$
- Available in SOT-89 package

## ORDERING INFORMATION

Package Type	Part Number
SOT-89 SPQ: 1,000/Reel	2SD1007-R 2SD1007-Q 2SD1007-P
$h_{FE}$	2SD1007-R = 90~180 2SD1007-Q = 135~270 2SD1007-P = 200~400
AiT provides all RoHS Compliant Products	

## PIN DESCRIPTION



1. BASE
2. COLLECTOR
3. EMITTER



## ABSOLUTE MAXIMUM RATINGS

$T_A=25^\circ\text{C}$

$V_{CB0}$ , Collector-Base Voltage	120V
$V_{CEO}$ , Collector-Emitter Voltage	120V
$V_{EBO}$ , Emitter-Base Voltage	5V
$I_C$ , Collector Current	0.7A
$I_{C(pu)}$ , Collector Current (pulse) <sup>NOTE1</sup>	1.2A
$P_C$ , Collector Power Dissipation	2W
$T_J$ , Junction Temperature	150°C
$T_{STG}$ , Storage Temperature	-55°C ~150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1:  $PW \leq 10\text{ms}$ , duty cycle  $\leq 50\%$

## ELECTRICAL CHARACTERISTICS

$T_A=25^\circ\text{C}$

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Base-Emitter Voltage <sup>NOTE2</sup>	$V_{BE}$	$V_{CE}=10\text{V}$ , $I_C=10\text{mA}$	550	620	650	mV
Collector Cutoff Current	$I_{CB0}$	$V_{CB}=120\text{V}$ , $I_E=0$	-	-	100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5\text{V}$ , $I_C=0$	-	-	100	nA
DC Current Gain <sup>NOTE2</sup>	$h_{FE}$	$V_{CE}=1\text{V}$ , $I_C=100\text{mA}$	90	200	400	
		$V_{CE}=1\text{V}$ , $I_C=5.0\text{mA}$	45	200	-	
Collector- Emitter Saturation Voltage <sup>NOTE2</sup>	$V_{CE(sat)}$	$I_C=500\text{mA}$ , $I_B=50\text{mA}$	-	0.3	0.6	V
Base-Emitter Saturation Voltage <sup>NOTE2</sup>	$V_{BE(sat)}$	$I_C=500\text{mA}$ , $I_B=50\text{mA}$	-	0.9	1.5	V
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=1.0\text{MHz}$	-	10	-	pF
Transition Frequency	$f_T$	$V_{CE}=10\text{V}$ , $I_E=-10\text{mA}$	-	90	-	MHz

NOTE2:  $PW \leq 350\mu\text{s}$ , duty cycle  $\leq 2\%$

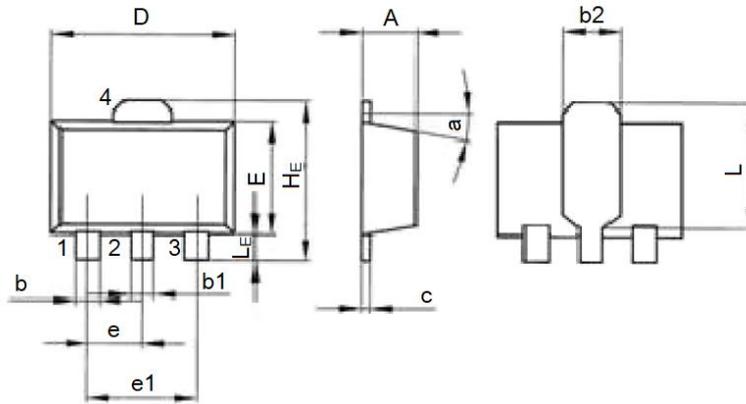
### • $h_{FE}$ Classification

	2SD1007-R	2SD1007-Q	2SD1007-P
$h_{FE}$	90~180	135~270	200~400



**PACKAGE INFORMATION**

Dimension in SOT-89 (Unit: mm)



Symbol	Min	Max
A	1.4	1.6
b	0.35	0.55
b1	0.4	0.65
b2	1.6 TYP	
c	0.35	0.45
D	4.4	4.6
E	2.35	2.55
e	1.5 TYP	
e1	3.0 TYP	
HE	4.15 TYP	
L	2.7 TYP	
LE	1.0 TYP	
$\alpha$	5°	



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