

**DESCRIPTION**

The 2SD1005-W, 2SD1005-V and 2SD1005-U are available in the SOT-89 package.

ORDERING INFORMATION

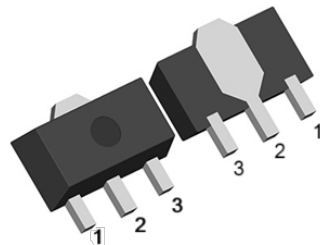
Package Type	Part Number
SOT-89	2SD1005-W
	2SD1005-V
	2SD1005-U
SPQ	1,000pcs/Reel
AiT provides all RoHS Compliant Products	

 h_{FE} CLASSIFICATION

Rank	Range
W	90 ~ 180
V	135 ~ 270
U	200 ~ 400

FEATURE

- High current (max. 1 A).
 - High breakdown voltage (max. 80 V).
- Excellent DC current gain linearity.

PIN DESCRIPTION

SOT-89

PIN#	DESCRIPTION
1	Base
2	Collector
3	Emitter

ABSOLUTE MAXIMUM RATINGS

$T_A = 25^\circ\text{C}$, unless otherwise specified.

V_{CBO} , Collector to Base Voltage	100 V
V_{CEO} , Collector to Emitter Voltage	80 V
V_{EBO} , Emitter to Base Voltage	5 V
I_C , Collector Current-Continuous	1 A
I_{CM} , Collector Current-Continuous (pulse) ⁽¹⁾	1.5 A
P_C , Collector Power Dissipation	1300 mW
T_J , Junction Temperature	150 °C
T_{stg} , Storage Temperature	-55 ~ +150 °C

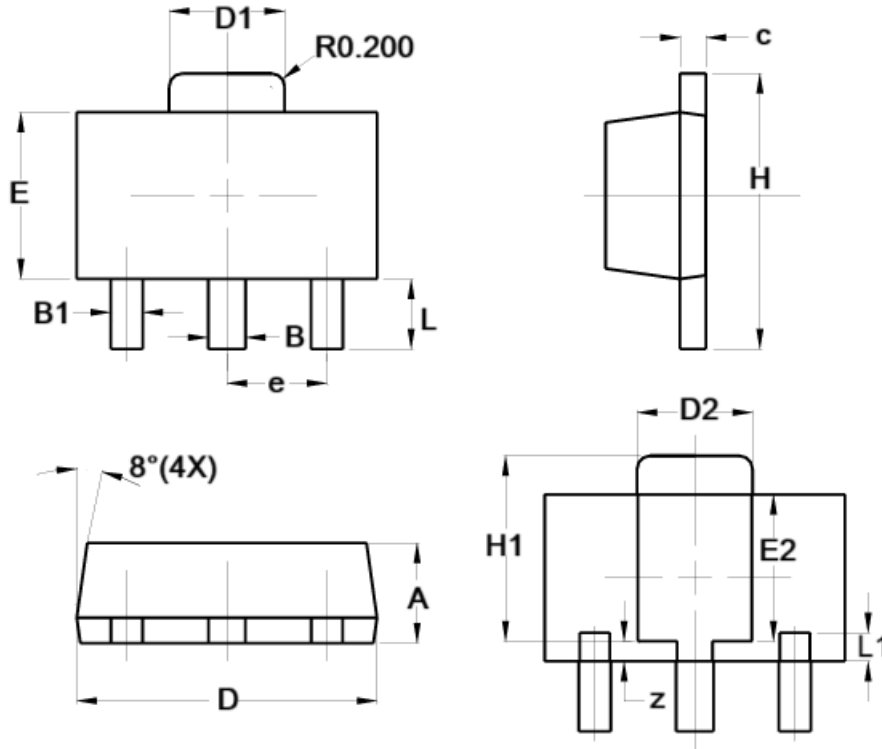
Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods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

**ELECTRICAL CHARACTERISTICS** $T_A=25^{\circ}\text{C}$ unless otherwise specified.

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 30\text{ V},$ $I_E = 0$	-	-	100	nA
		$V_{CB} = 30\text{ V},$ $I_E = 0;$ $T_j=125^{\circ}\text{C}$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{ V},$ $I_C = 0$	-	-	100	nA
DC Current Gain	h_{FE}	$V_{CE} = 2\text{ V},$ $I_C = 5\text{ mA}$	90	-		-
		$V_{CE} = 2\text{ V},$ $I_C = 150\text{ mA}$	90	-	400	-
		$V_{CE} = 2\text{ V},$ $I_C = 500\text{ mA}$	25	-	80	-
Collector-Emitter saturation voltage	$V_{CE}(\text{sat})$	$I_C = 500\text{ mA},$ $I_B = 50\text{ mA},$	-	-	0.5	V
Base-Emitter voltage	V_{BE}	$I_C = 500\text{ mA},$ $V_{BE} = 2\text{ V}$	--	-	1	V
Transition Frequency	f_T	$V_{CB} = -20\text{ V},$ $I_E = 0\text{ A}$ $f = 1\text{ MHz}$	-	130	-	MHz
DC current gain ratio of the complementary pairs	h_{FE}	$I_C=150\text{mA};$ $V_{CE} = 2\text{V}$		1.3	1.6	

**PACKAGE INFORMATION**

Dimension in SOT-89 (Unit: mm)



Symbol	Millimeter	
	Min.	Max.
A	1.400	1.600
B	0.500	0.620
B1	0.420	0.540
c	0.350	0.430
D	4.440	4.600
D1	1.620	1.830
D2	1.610	1.810
E	2.400	2.600
E2	2.050	2.350
e	1.500 TYP.	
H	3.950	4.250
H1	2.630	2.930
L	0.900	1.200
L1	0.327	0.527
z	0.200	0.400



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