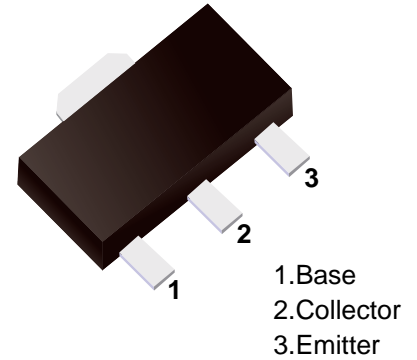


■ PNP Transistors

■ Features

- High voltage
- Large continuous collector current capability



■ Simplified outline(SOT-89)

■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CBO}	-160	V
Collector - Emitter Voltage	V _{CEO}	-160	
Emitter - Base Voltage	V _{EBO}	-6	
Collector Current - Continuous	I _c	-1	A
Collector Power Dissipation	P _c	0.5	W
Thermal Resistance from Junction to Ambient	R _{θJA}	250	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature range	T _{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25°C

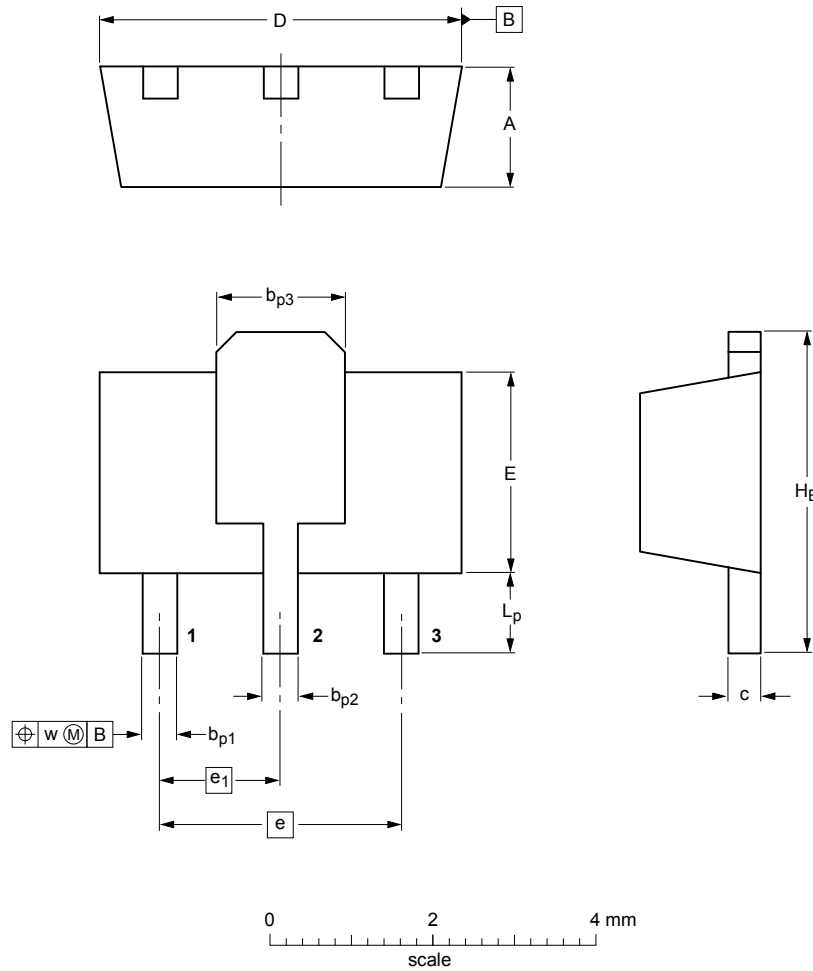
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CBO}	I _c = -100 μA, I _E =0	-160			V
Collector- emitter breakdown voltage	V _{CEO}	I _c = -1 mA, I _B =0	-160			
Emitter - base breakdown voltage	V _{EBO}	I _E = -100 μA, I _c =0	-6			
Collector-base cut-off current	I _{CBO}	V _{CB} = -150 V, I _E =0			-1	μA
Emitter cut-off current	I _{EBO}	V _{EB} = -6V, I _c =0			-1	
Collector-emitter saturation voltage	V _{CE(sat)}	I _c =-500 mA, I _B =-50mA			-1.5	V
Base - emitter saturation voltage	V _{BE(sat)}	I _c = -500 mA, I _B =- 50mA			-1.2	
Base - emitter voltage	V _{BE}	V _{CE} = -5V, I _c = -5mA			-0.75	
DC current gain	h _{FE}	V _{CE} = -5V, I _c = -200mA	60		320	
Transition frequency	f _T	V _{CE} = -5V, I _c = -200mA	15			MHz

■ Classification of h_{fe}

Type	2SA1013-R	2SA1013-O	2SA1013-Y
Range	60-120	100-200	160-320
Marking	1013R	1013O	1013Y

Package Outline

SOT-89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _{p1}	b _{p2}	b _{p3}	c	D	E	e	e ₁	H _E	L _p	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-89	Tape/Reel, 7" reel	1000	EIA-481-1