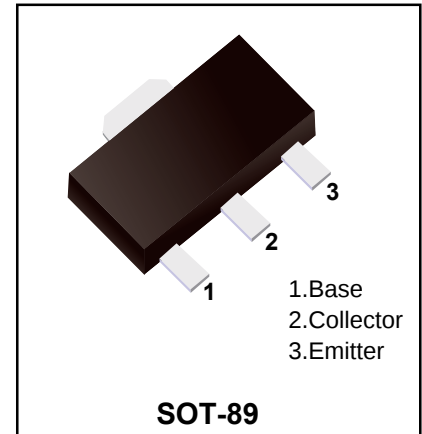


Plastic-Encapsulate Transistors

TRANSISTOR (PNP)

FEATURE

- ◆High voltage
- ◆Large continuous collector current capability



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

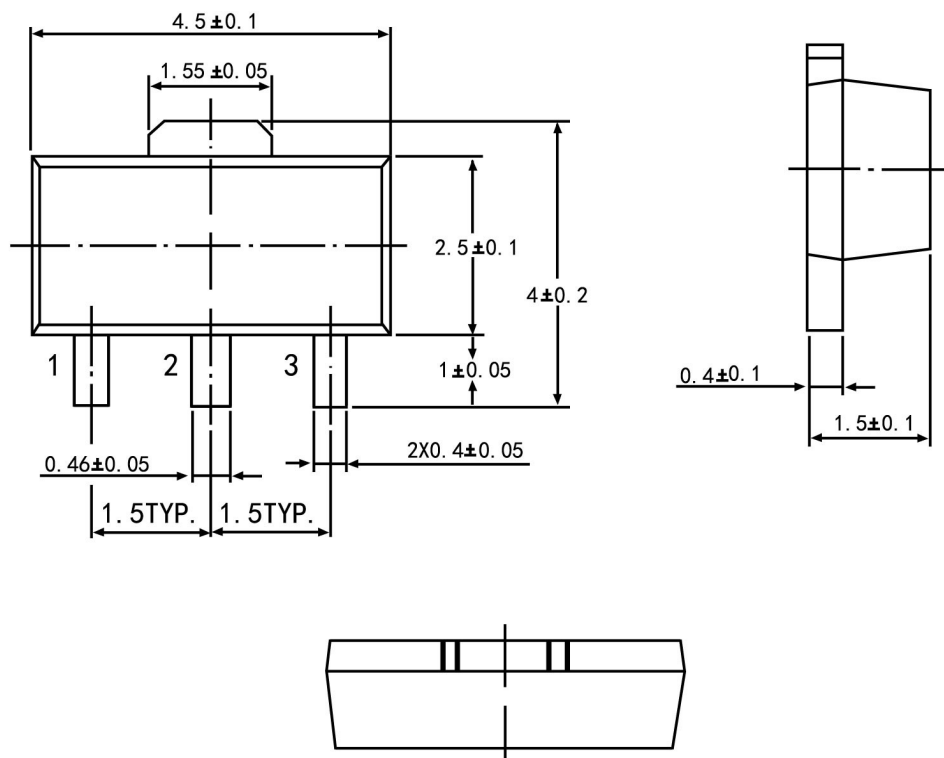
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-160	V
V_{CEO}	Collector-Emitter Voltage	-160	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current -Continuous	-1	A
P_C	Collector Power Dissipation	0.5	W
T_j	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55~+150	°C
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	250	°C/W

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu A, I_E = 0$	-160		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1mA, I_B = 0$	-160		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-6		V
Collector cut-off current	I_{CBO}	$V_{CB} = -150V, I_E = 0$		-1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -6V, I_C = 0$		-1	μA
DC current gain	h_{FE}	$V_{CE} = -5V, I_C = -200mA$	60	320	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500mA, I_B = -50mA$		-1.5	V
Base-emitter voltage	V_{BE}	$I_C = -5mA, V_{CE} = -5V$		-0.75	V
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	1013



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 Typ	
H	3.94	4.25
H1	2.63	2.93
L	0.89	1.20
All Dimensions In mm		

Summary of Packing Options

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