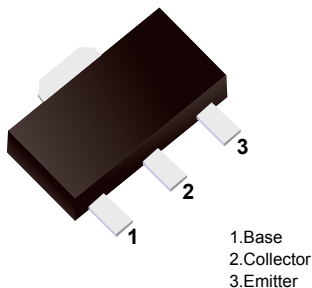


FEATURE

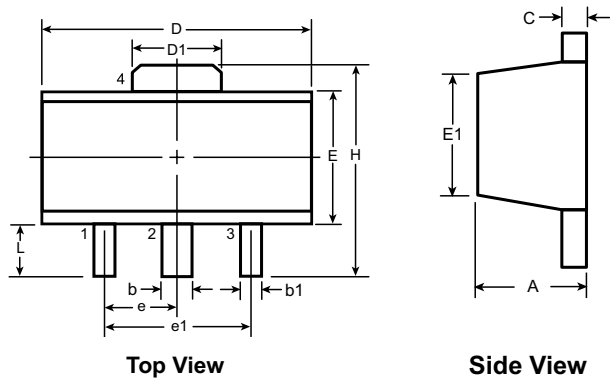
- High voltage
- Large continuous collector current capability

MARKING: 1013



■ Simplified outline(SOT-89)

SOT-89 PACKAGE OUTLINE



Symbol	A	b	b1	C	D	D1	E	E1	e	e1	H	L
Dimensions (mm)	MIN	1.40	0.44	0.36	0.3	4.40	1.50	2.29	2.00*	1.50 BSC	3.94	0.89
	NOM	-	-	-	-	-	-	-	-	3.00 BSC	-	-
	MAX	1.60	0.56	0.48	0.5	4.60	1.75	2.60	2.29	-	4.25	1.20

Dimensions in mm

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ 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	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	250	$^\circ\text{C/W}$

2SA1013

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}

Rank	R	O	Y
Range	60-120	100-200	160-320

RATING AND CHARACTERISTIC CURVES (2SA1013)

