

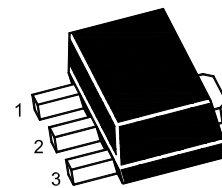


2SA1013U Plastic-Encapsulate Transistors

TRANSISTOR (PNP)

FEATURE

- High voltage
- Large continuous collector current capability



1.Base 2.Collector 3.Emitter

SOT-89-3L

MARKING: 1013

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)

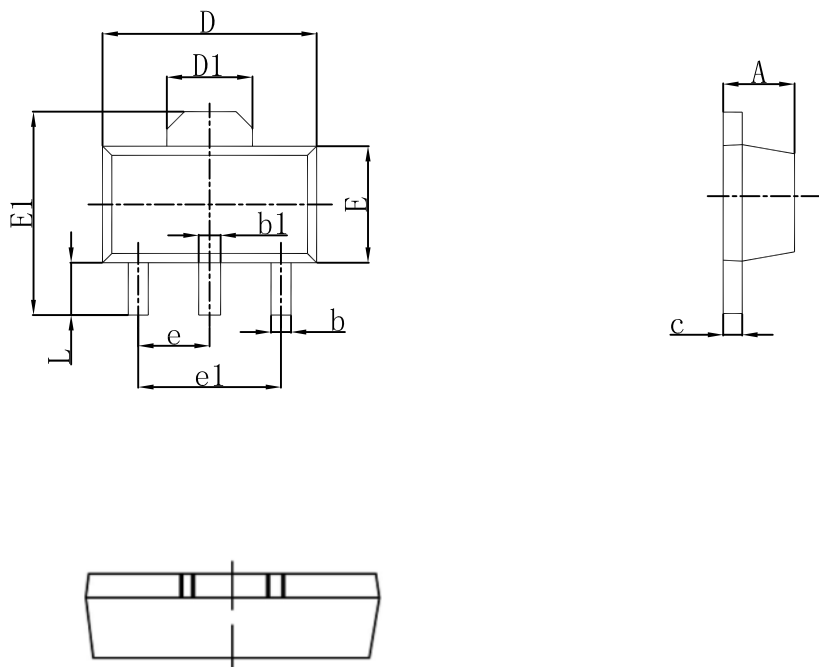
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu A$, $I_E = 0$	-160		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1mA$, $I_B = 0$	-160		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu A$, $I_C = 0$	-6		V
Collector 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}

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



SOT-89-3L Outlines Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047