



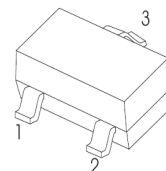
## SOT-23 Plastic-Encapsulate Transistors

**2SA1235A** TRANSISTOR (PNP)**FEATURES**

- Low Collector Current
- Low Collector Power Dissipation

**MAXIMUM RATINGS** ( $T_a=25^{\circ}\text{C}$  unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{\text{CBO}}$	Collector-Base Voltage	-60	V
$V_{\text{CEO}}$	Collector-Emitter Voltage	-50	V
$V_{\text{EBO}}$	Emitter-Base Voltage	-6	V
$I_{\text{C}}$	Collector Current	-200	mA
$P_{\text{C}}$	Collector Power Dissipation	200	mW
$R_{\theta\text{JA}}$	Thermal Resistance From Junction To Ambient	625	$^{\circ}\text{C}/\text{W}$
$T_{\text{J}}$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{\text{stg}}$	Storage Temperature	-55~+150	$^{\circ}\text{C}$

**SOT - 23**

1. BASE  
2. EMITTER  
3. COLLECTOR

**ELECTRICAL CHARACTERISTICS** ( $T_a=25^{\circ}\text{C}$  unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=-100\mu\text{A}$ , $I_{\text{E}}=0$	-60			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=-0.1\text{mA}$ , $I_{\text{B}}=0$	-50			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=-100\mu\text{A}$ , $I_{\text{C}}=0$	-6			V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}}=-60\text{V}$ , $I_{\text{E}}=0$			-100	nA
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}}=-6\text{V}$ , $I_{\text{C}}=0$			-100	nA
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=-6\text{V}$ , $I_{\text{C}}=-1\text{mA}$	150		500	
	$h_{\text{FE}(2)}$	$V_{\text{CE}}=-6\text{V}$ , $I_{\text{C}}=-0.1\text{mA}$	90			
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}}=-100\text{mA}$ , $I_{\text{B}}=-10\text{mA}$			-0.3	V
Base-emitter saturation voltage	$V_{\text{BE(sat)}}$	$I_{\text{C}}=-100\text{mA}$ , $I_{\text{B}}=-10\text{mA}$			-1	V
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}}=-6\text{V}$ , $I_{\text{C}}=-10\text{mA}$		200		MHz
Collector output capacitance	$C_{\text{ob}}$	$V_{\text{CB}}=-6\text{V}$ , $I_{\text{E}}=0$ , $f=1\text{MHz}$		4		pF

**CLASSIFICATION OF  $h_{\text{FE}(1)}$** 

RANK	M·E	M·F
RANGE	150~300	250~500