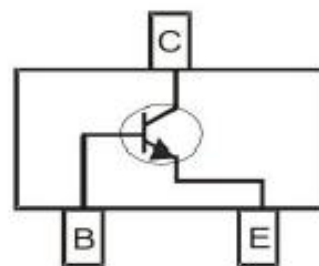


**Kingtronics**®**2SC1815**  
**BIPOLAR**  
**TRANSISTOR (NPN)****FEATURES**

High current And High voltage  
Excellent  $h_{FE}$  Linearity  
Low Noise  
Surface Mount device  
Complementary to 2SA1015

**MECHANICAL DATA**

Case: SOT-23  
Case Material: Molded Plastic. UL flammability  
Classification Rating: 94V-0  
Moisture Sensitivity: Level 1 per J-STD-020  
Weight: 0.008 grams (approximate)

**SOT-23****MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$  unless otherwise noted)**

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	150	mA
Collector Power Dissipation	$P_C$	200	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~+150	$^\circ\text{C}$

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

PARAMETER	SYMBOL	MIN.	TYP	MAX.	UNIT	CONDITION
Collector-base breakdown voltage	$V_{(BR)CBO}$	60			V	$I_C=100\mu\text{A}$ , $I_E=0$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	50			V	$I_C=0.1\text{mA}$ , $I_B=0$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	5			V	$I_E=100\mu\text{A}$ , $I_C=0$
Collector cut-off current	$I_{CBO}$			0.1	$\mu\text{A}$	$V_{CB}=60\text{V}$ , $I_E=0$
Emitter cut-off current	$I_{EBO}$			0.1	$\mu\text{A}$	$V_{EB}=5\text{V}$ , $I_C=0$
DC current gain	$h_{FE}$	130		400		$V_{CE}=6\text{V}$ , $I_C=2\text{mA}$
Collector-emitter saturation voltage	$V_{CE(sat)}$			0.25	V	$I_C=100\text{mA}$ , $I_B=10\text{mA}$
Base-emitter saturation voltage	$V_{BE(sat)}$			1	V	$I_C=100\text{mA}$ , $I_B=10\text{mA}$
Transition frequency	$f_T$	80			MHZ	$V_{CE}=10\text{V}$ , $I_C=1\text{mA}$ , $f=30\text{MHz}$

**CLASSIFICATION OF  $h_{FE}$** 

Rank	L	H
Range	130-200	200-400
Marking		HF

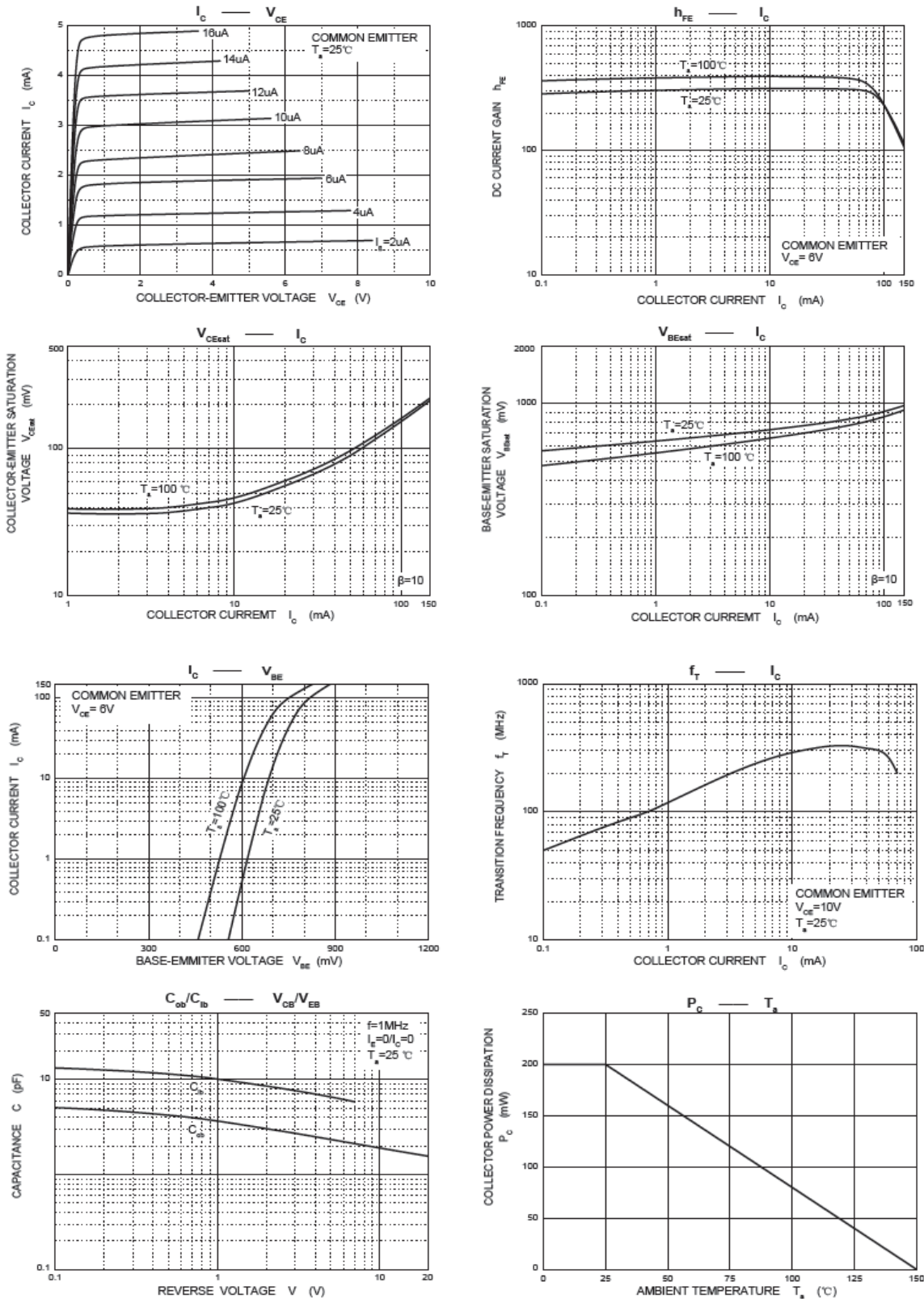
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## 2SC1815 BIPOLAR TRANSISTOR (NPN)

### Typical Characteristics

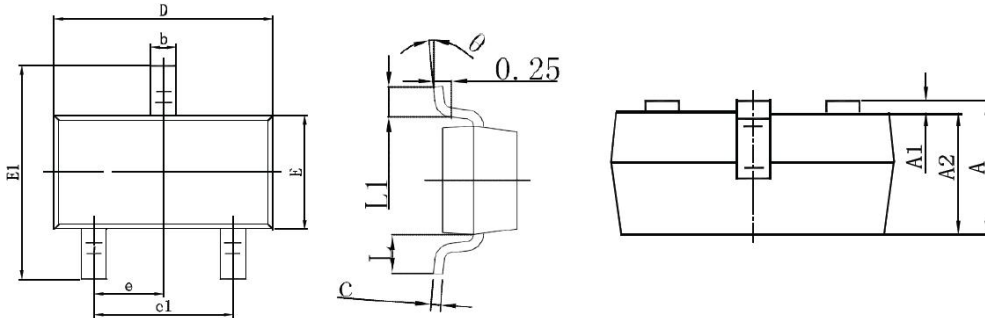


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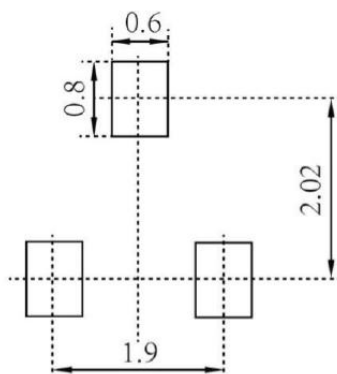
## 2SC1815 BIPOLAR TRANSISTOR (NPN)

### SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

### SOT-23 Suggested Pad Layout



**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

Note: Specifications are subject to change without notice.

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