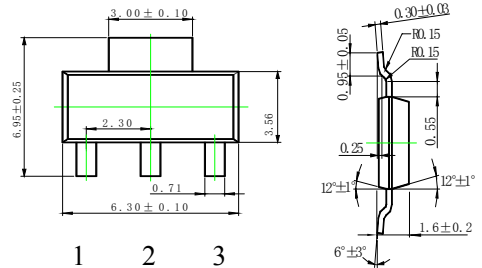


RoHS Compliant Product

### Features

- \* 5 Amps continuous current, up to 15 Amp peak current.
- \* Excellent gain characteristic specified up to 10Amps.
- \* Very low saturation voltage

### SOT-223



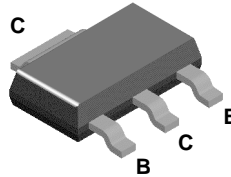
- 1 2 3
1. BASE
  2. COLLECTOR
  3. EMITTER

### Mechanical Data

**Case:** SOT-223 Plastic Package

**Weight:** approx. 0.021g

**Marking Code:** 159



### Maximum Ratings and Thermal Characteristics

(TA = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Junction Temperature	T <sub>j</sub>	+150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C
Collector-Base Voltage	V <sub>CB0</sub>	-100	V
Collector-Emitter Voltage	V <sub>CE0</sub>	-60	V
Emitter-Base Voltage	V <sub>EBO</sub>	-6	V
Collector Current (DC)	I <sub>c</sub>	-5	A
Collector Current (Pulse)	I <sub>C</sub>	-15	A
Total Power Dissipation	P <sub>D</sub>	3.0	W

**Notes:** Device on alumina substrate.

### Electrical Characteristics (T<sub>J</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Min	Typ.	Max	Uni	Test Conditions
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	-100	-	-	V	I <sub>C</sub> = -100μA, I <sub>E</sub> = 0
Collector-Emitter Breakdown Voltage (w/ Real Device Limit)	BV <sub>CE0</sub>	-100	-	-	V	I <sub>C</sub> = -1μA, R <sub>B</sub> = 1KΩ
Collector-Emitter Breakdown Voltage	*BV <sub>CEO</sub>	-60	-	-	V	I <sub>C</sub> = -100mA, I <sub>B</sub> = 0
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	-6	-	-	V	I <sub>E</sub> = -100μA, I <sub>C</sub> = 0
Collector-Base Cutoff Current	I <sub>CB0</sub>	-	-	-50	nA	V <sub>CB</sub> = -80V, I <sub>E</sub> = 0
Collector-Base Cutoff Current (w/ Real Device Limit)	I <sub>CER</sub>	-	-	-50	nA	V <sub>CB</sub> = -80V, R = 1KΩ
Emitter-Base Cutoff Current	I <sub>EBO</sub>	-	-	-10	nA	V <sub>EB</sub> = -6V, I <sub>C</sub> = 0
Collector Saturation Voltage 1	*V <sub>CE(sat)1</sub>	-	-20	-50	mV	I <sub>C</sub> = -100mA, I <sub>B</sub> = -10mA
Collector Saturation Voltage 2	*V <sub>CE(sat)2</sub>	-	-85	-140	mV	I <sub>C</sub> = -1A, I <sub>B</sub> = -100mA
Collector Saturation Voltage 3	*V <sub>CE(sat)3</sub>	-	-155	-210	mV	I <sub>C</sub> = -2A, I <sub>B</sub> = -200mA
Collector Saturation Voltage 4	*V <sub>CE(sat)4</sub>	-	-370	-460	mV	I <sub>C</sub> = -5A, I <sub>B</sub> = -500mA
Base Saturation Voltage	*V <sub>BE(sat)</sub>	-	-1.08	-1.24	V	I <sub>C</sub> = -5A, I <sub>B</sub> = -500mA
Base-Emitter Voltage	*V <sub>BE(on)</sub>	-	-0.935	-1.07	V	V <sub>CE</sub> = -1V, I <sub>C</sub> = -5A
DC Current Gain 1	*h <sub>FE1</sub>	100	200	-		V <sub>CE</sub> = -1V, I <sub>C</sub> = -10mA
DC Current Gain 2	*h <sub>FE2</sub>	100	200	300		V <sub>CE</sub> = -1V, I <sub>C</sub> = -2A
DC Current Gain 3	*h <sub>FE3</sub>	75	90	-		V <sub>CE</sub> = -1V, I <sub>C</sub> = -5A
DC Current Gain 4	*h <sub>FE4</sub>	10	25	-		V <sub>CE</sub> = -1V, I <sub>C</sub> = -10A
Gain-Bandwidth Product	f <sub>T</sub>	-	120	-	MH	V <sub>CE</sub> = -10V, I <sub>C</sub> = -100mA,
Output Capacitance	C <sub>ob</sub>	-	74	-	pF	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz

On-Time	$t_{on}$	-	82	-	ns	$V_{CE}=-10V, I_C=2A,$ $I_{B1}=I_{B2}=-200mA$
Off-Time	$t_{off}$	-	350	-		

\*Measured under pulse condition. Pulse width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$   
Spice parameter data is available upon request for this device.

