

NPN Low Saturation Transistor

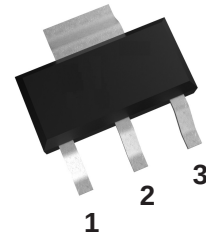
The devices are designed with high current gain and low saturation voltage with collector currents up to 3A continuous.

Feature

Collector-Emitter Voltage: 60 V

Collector-Base Voltage: 90 V

Emitter-Base Voltage: 6 V



1:BASE 2:COLLECTOR 3:EMITTER

Applications

Power Amplifier and Switching

SOT-223

Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Max	Units
V_{CEO}	Collector-Emitter Voltage	60	V
V_{CBO}	Collector-Base Voltage	90	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current - Continuous	3	A
T_{stg}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_j	Junction Temperature Range	150	$^\circ\text{C}$

Thermal Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

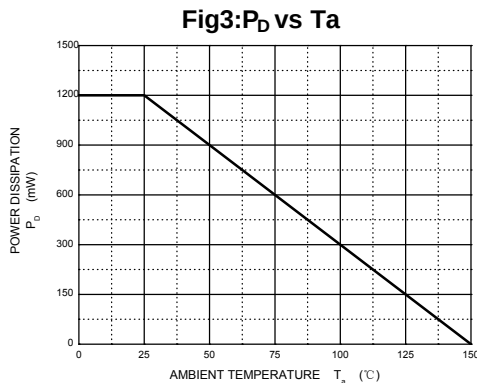
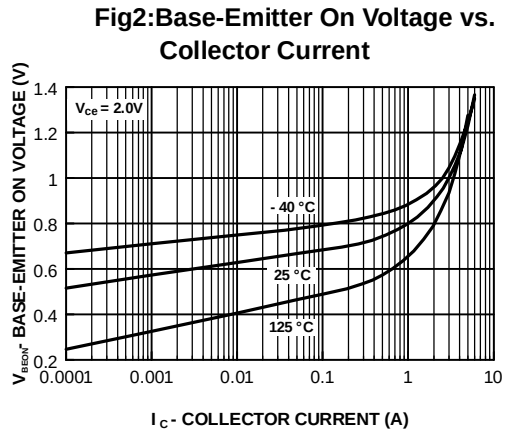
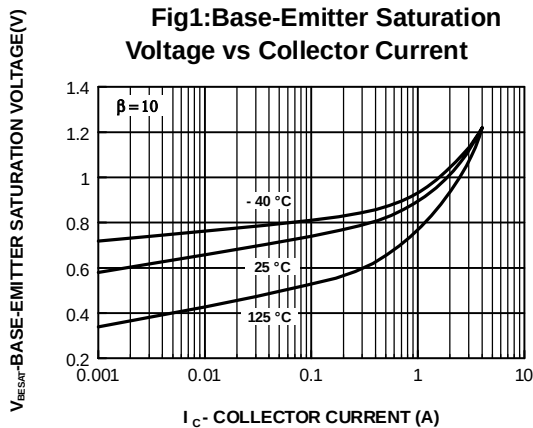
Symbol	Characteristic	Max	Units
P_D	Total Device Dissipation	1.25	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	100	$^\circ\text{C/W}$

Electrical Characteristics

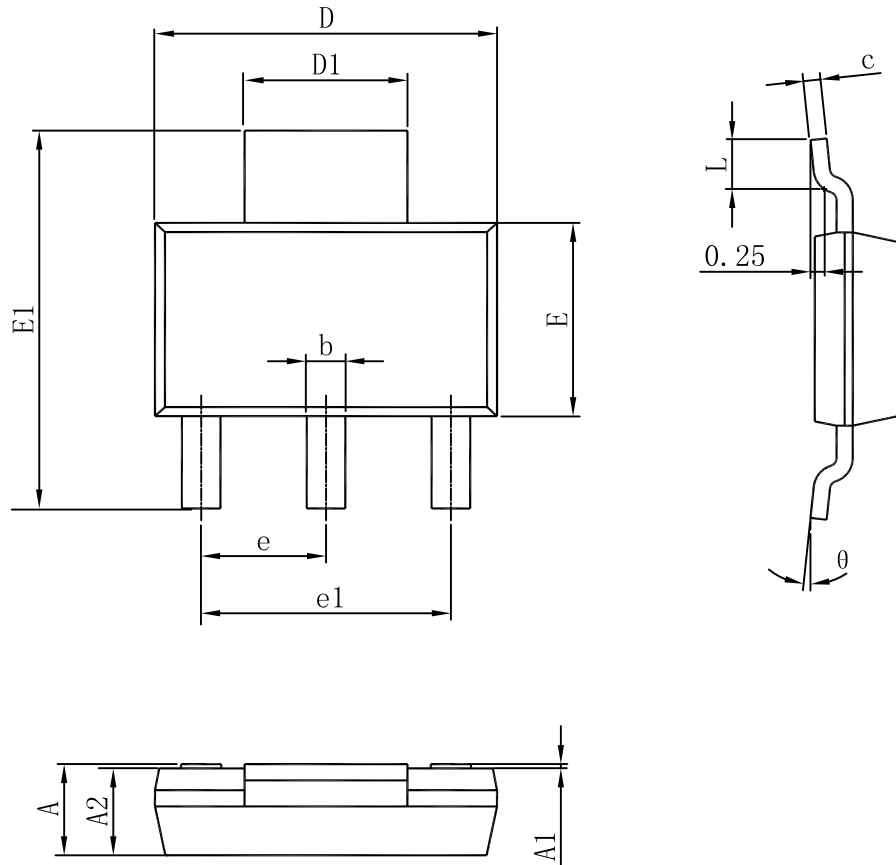
$T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=1\text{mA}, I_E=0$	90			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}, I_B=0$	50			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=0.1\text{mA}, I_C=0$	6			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=70\text{V}, I_E=0$			0.5	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=6\text{V}, I_C=0$			0.5	μA
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}, I_C=1\text{A}$	100		400	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2\text{A}, I_B=200\text{mA}$			0.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=2\text{A}, I_B=200\text{mA}$			2.0	V
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=0.1\text{A}, f=10\text{ MHz}$	50	80		MHz

Typical Characteristics



SOT-223 PACKAGE OUTLINE DIMENSIONS



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.520	1.800	0.06	0.071
A1	0.02	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.810	0.026	0.032
c	0.240	0.320	0.010	0.014
D	6.300	6.500	0.248	0.256
D1	2.900	3.100	0.114	0.122
E	3.300	3.700	0.130	0.146
E1	6.830	7.070	0.269	0.278
e	2.3 (BSC)		0.091 (BSC)	
e1	4.500	4.700	0.177	0.185
L	0.900	1.150	0.035	0.045
θ	0°	10°	0°	10°