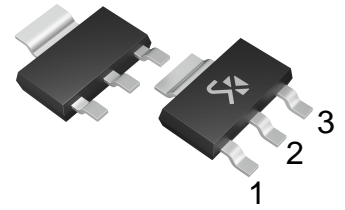


Silicon NPN bipolar Transistor

Features

- Collector-Emitter Voltage : 60V
- Collector-Base Voltage: 90V
- Emitter-Base Voltage: 6V



Pin assignment

PIN NAME	PIN NUMBER	FUNCTION
	SOT-223	
B	1	BASE
C	2	COLLECTOR
E	3	EMITTER

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	90	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	3	A
P_C	Collector Power Dissipation	1.25	W
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}$, $I_E=0$	90			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}$, $I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=70\text{V}$, $I_E=0$			0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=6\text{V}$, $I_B=0$			0.5	nA
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	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

Fig1: Base-Emitter Saturation Voltage vs Collector Current

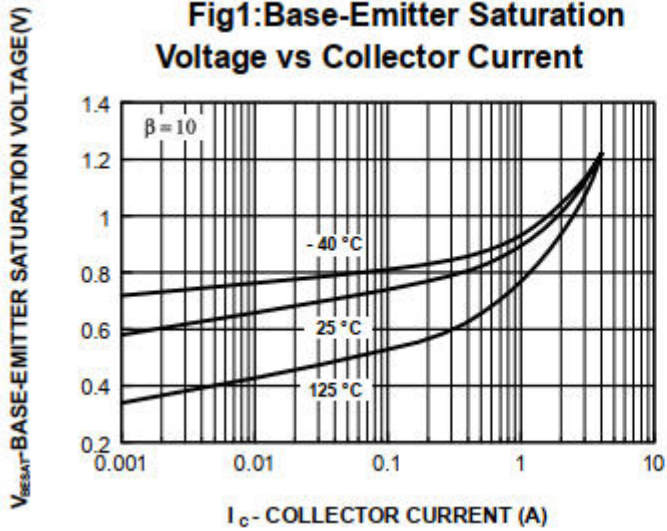


Fig2: Base-Emitter On Voltage vs. Collector Current

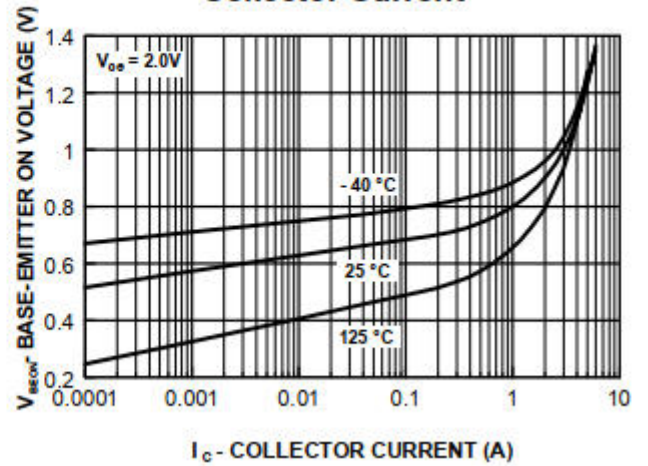
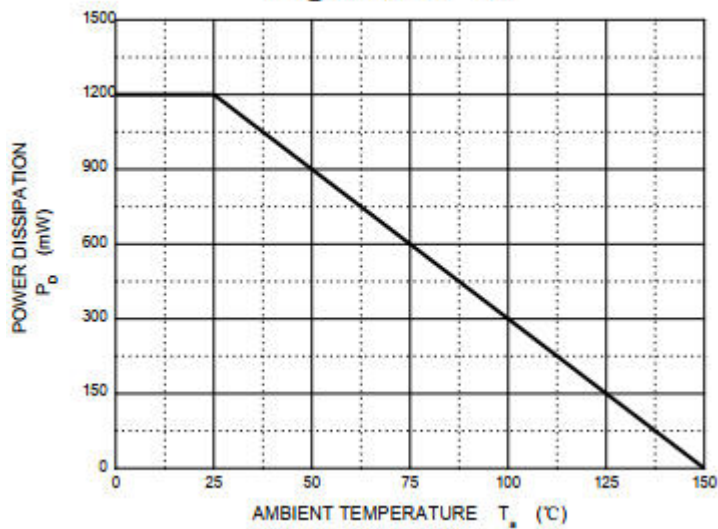
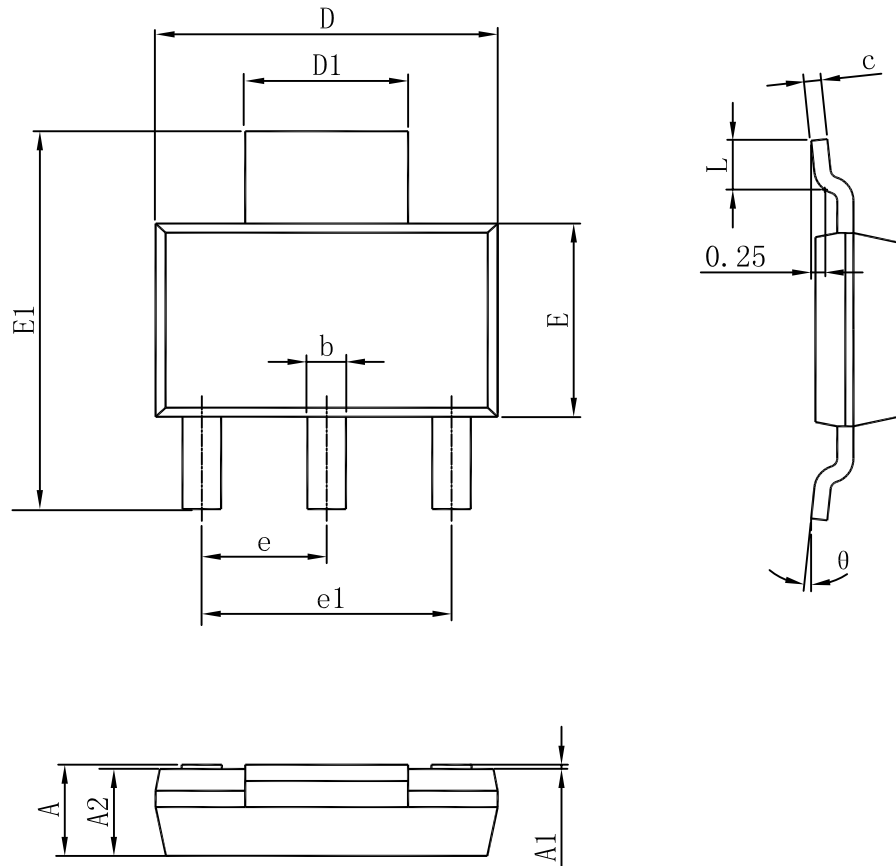


Fig3: P_D vs T_a



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°