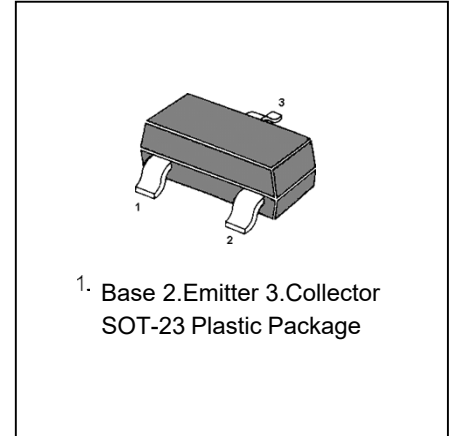


2SC4177

NPN Silicon Epitaxial Planar Transistor

Features

- High DC Current Gain
- High Voltage
- Small package



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	100	mA
P_C	Collector Power Dissipation	150	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^\circ\text{C}$

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

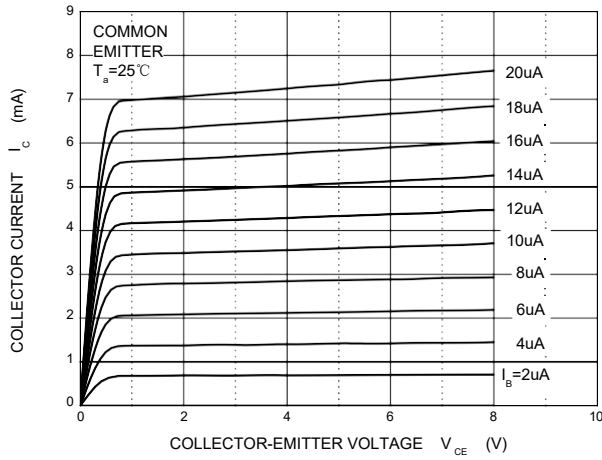
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$, $I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$, $I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}$, $I_E=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$			100	nA
DC current gain	h_{FE}^*	$V_{CE}=6\text{V}$, $I_C=1\text{mA}$	90		600	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}$, $I_B=10\text{mA}$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100\text{mA}$, $I_B=10\text{mA}$			1	V
Base-emitter voltage	V_{BE}	$V_{CE}=6\text{V}$, $I_C=1\text{mA}$	0.55		0.65	V
Transition frequency	f_T	$V_{CE}=6\text{V}$, $I_C=10\text{mA}$		250		MHz
Collector output capacitance	C_{ob}	$V_{CB}=6\text{V}$, $I_E=0$, $f=1\text{MHz}$		3		pF

*Pulse test: pulse width $\leq 350\mu\text{s}$, duty cycles $\leq 2.0\%$.

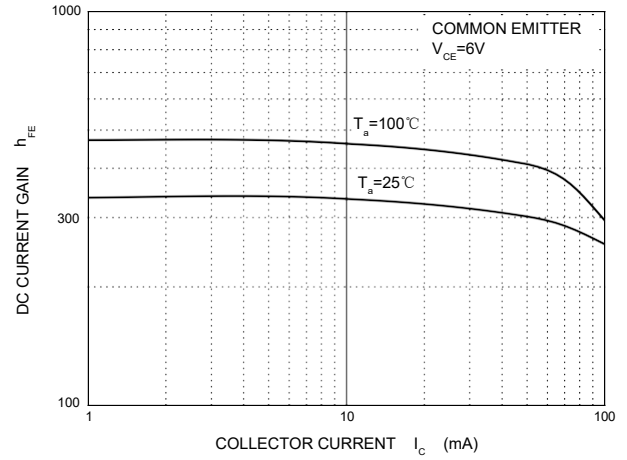
CLASSIFICATION OF h_{FE}

RANK	L4	L5	L6	L7
RANGE	90 - 180	135 - 270	200 - 400	300 - 600
MARKING	L4	L5	L6	L7

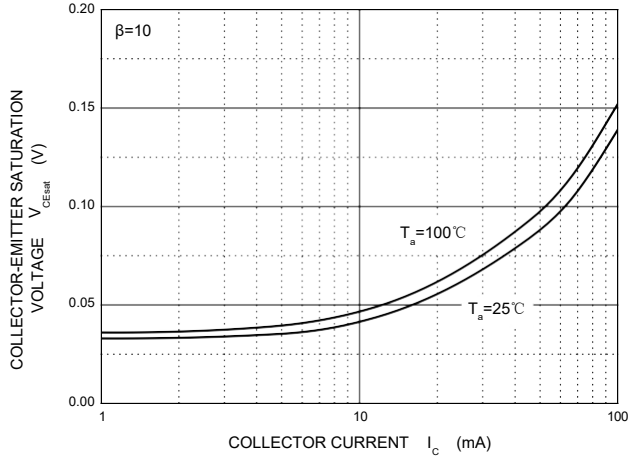
Static Characteristic



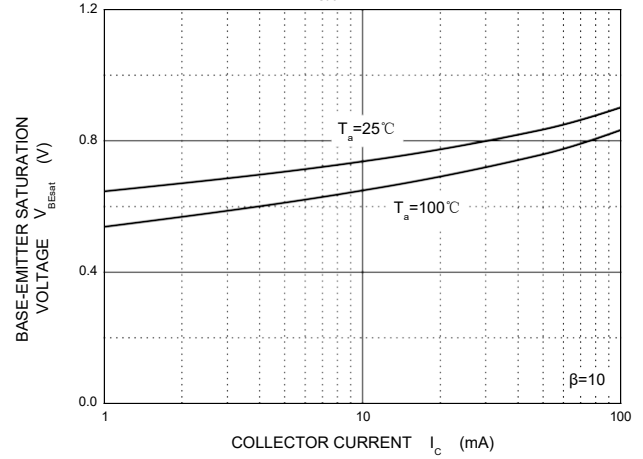
h_{FE} — I_C



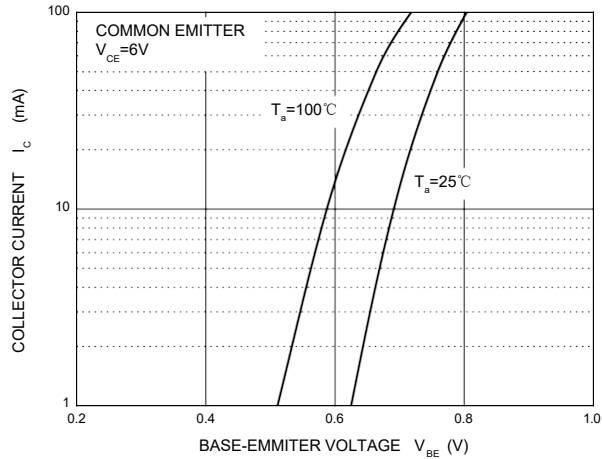
V_{CEsat} — I_C



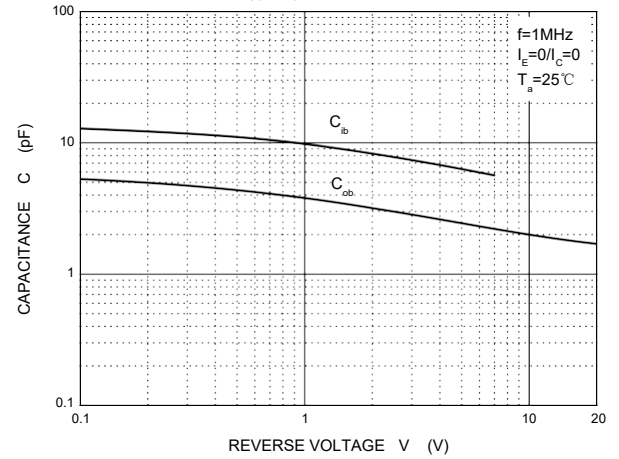
V_{BEsat} — I_C



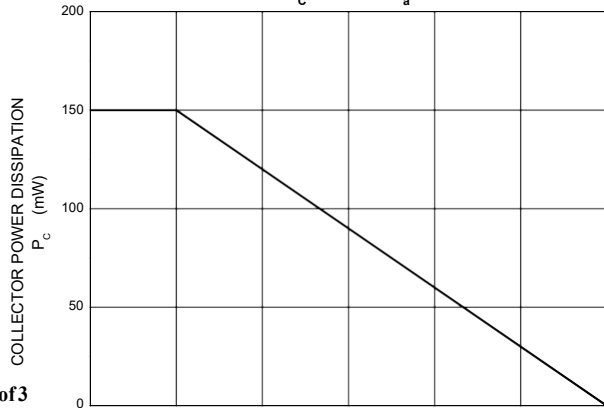
I_C — V_{BE}



C_{ob}/C_{ib} — V_{CB}/V_{EB}

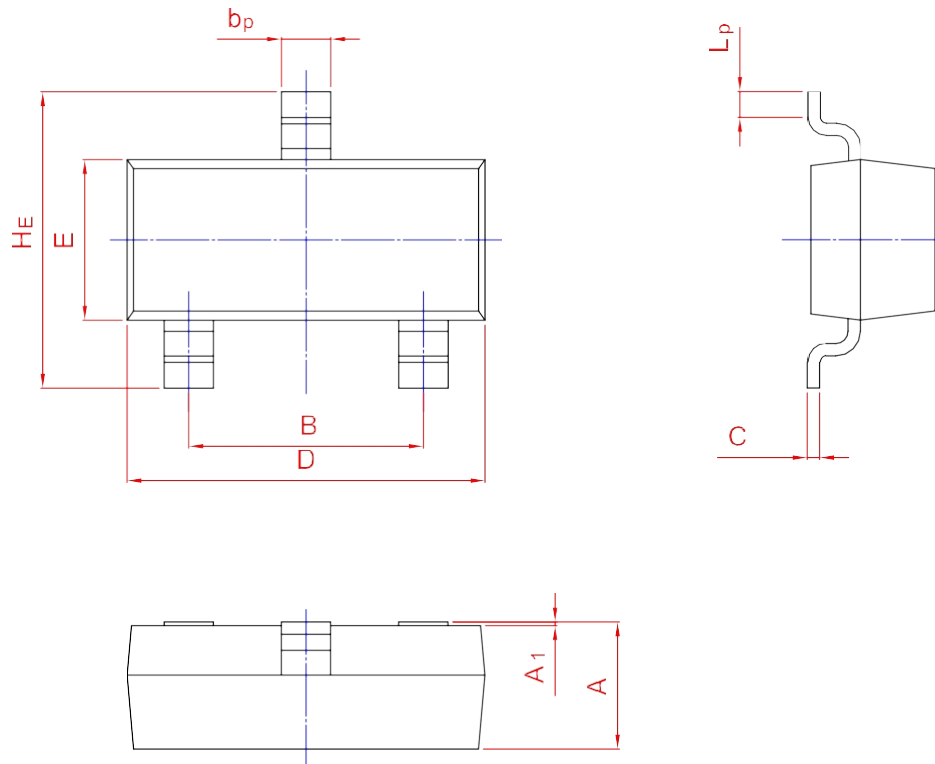
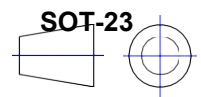


P_C — T_a



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads



UNIT

	1.40 A	B	b _p	C	3.10 D	1.65 E	H _E	A ₁	L _p
mm	0.95	2.04 1.78	0.50 0.35	0.19 0.08	2.70		3.00 2.20	0.100 0.013	0.50 0.20