

## PNP Plastic-Encapsulate Transistors

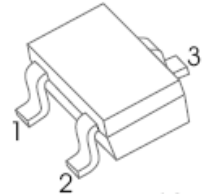
### FEATURES

- High DC Current Gain
- High Voltage
- Complementary to 2SC4177

### 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
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	833	$^\circ\text{C}/\text{W}$
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~+150	$^\circ\text{C}$

### SOT - 323



1. BASE
2. EMITTER
3. COLLECTOR

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

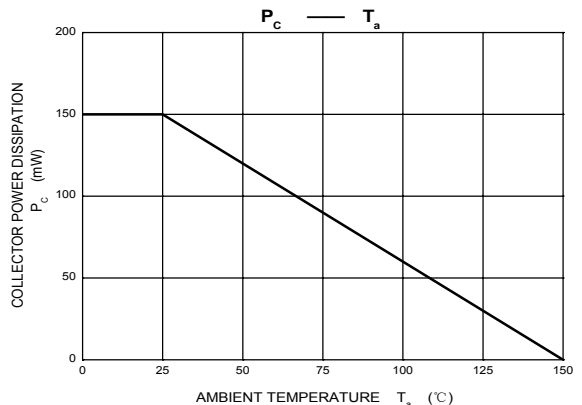
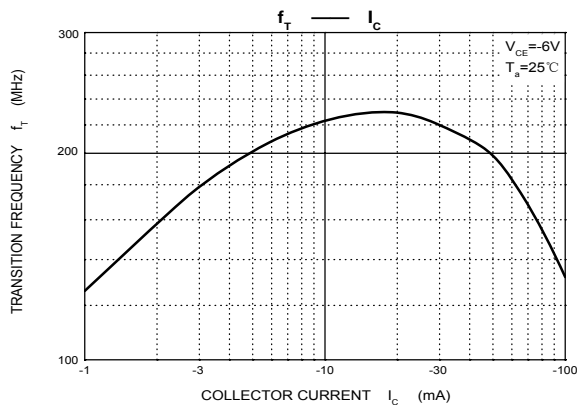
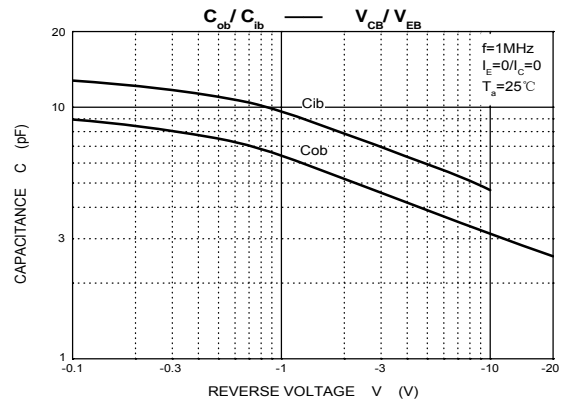
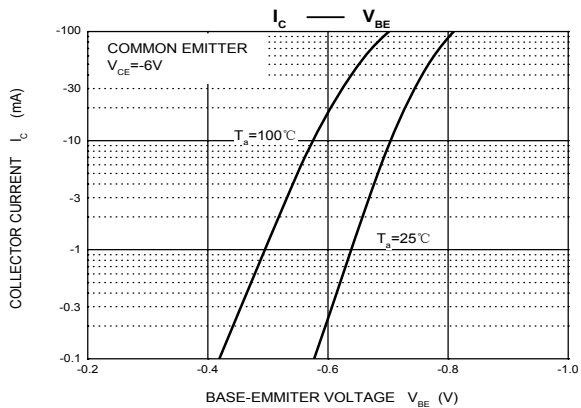
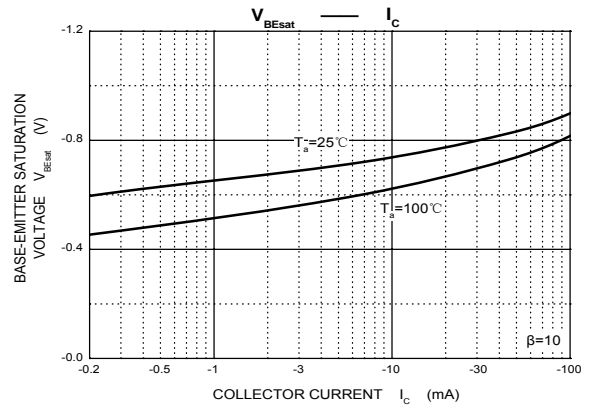
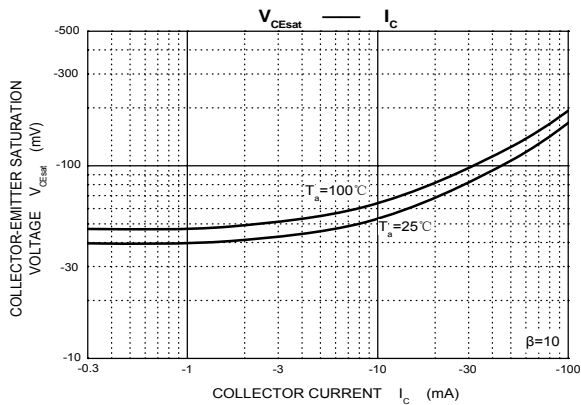
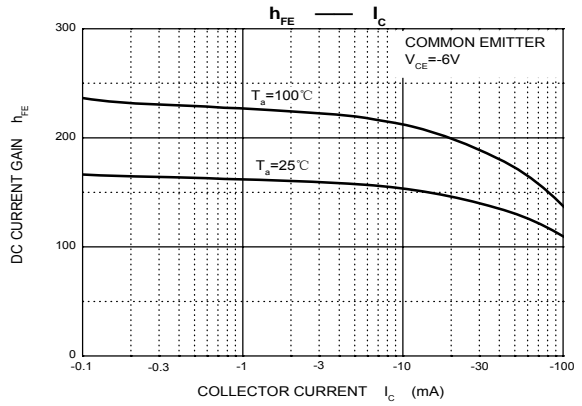
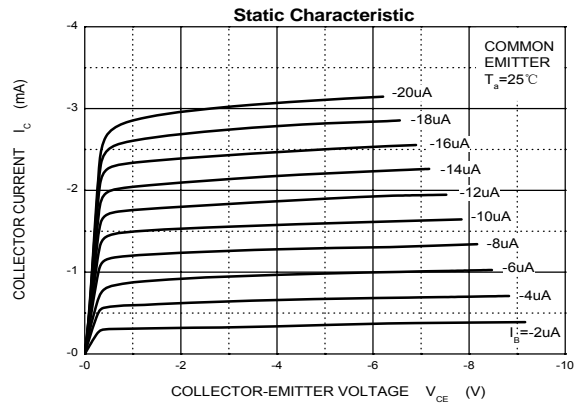
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu\text{A}$ , $I_E=0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}$ , $I_B=0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\mu\text{A}$ , $I_C=0$	-5			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
Collector-emitter voltage	$V_{BE}$	$V_{CE}=-6\text{V}$ , $I_C=-1\text{mA}$	-0.58		-0.68	V
Transition frequency	$f_T$	$V_{CE}=-6\text{V}$ , $I_C=-10\text{mA}$		180		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=-10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$		4.5		pF

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

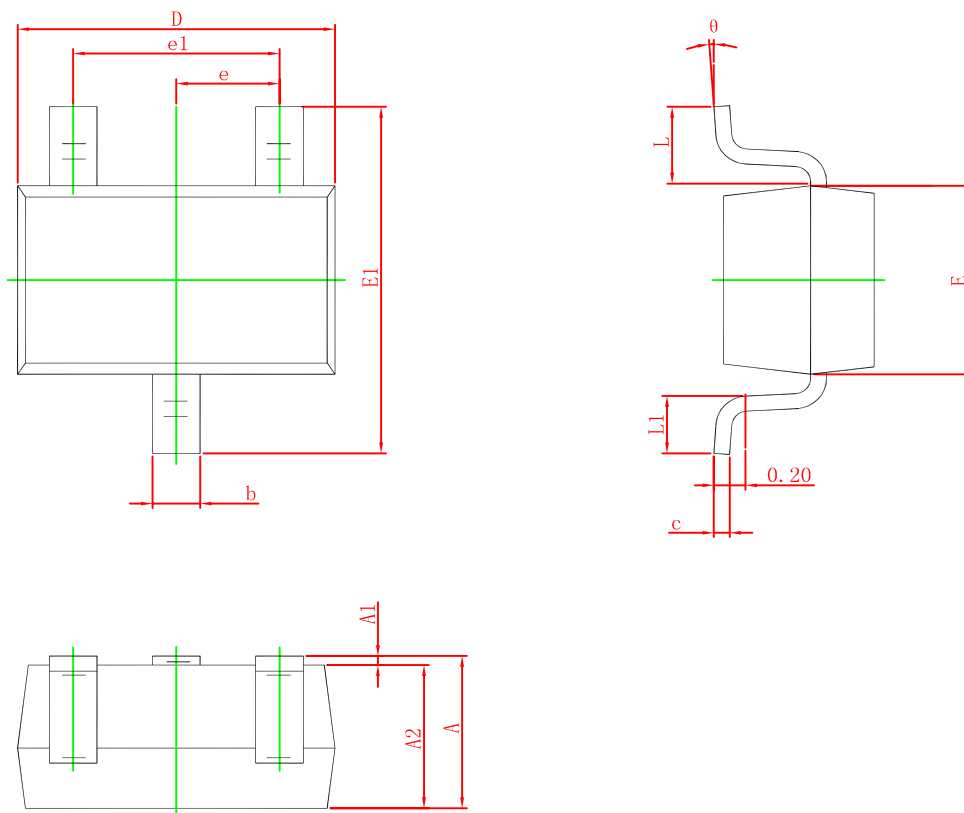
### CLASSIFICATION OF $h_{FE}$

RANK	M4	M5	M6	M7
RANGE	90 - 180	135 - 270	200 - 400	300 - 600
MARKING	M4	M5	M6	M7

## Typical Characteristics



## SOT-323 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
$\theta$	0°	8°	0°	8°