

TRANSISTOR(NPN)

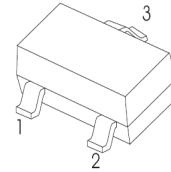
**FEATURES**

- High  $I_{CMax.}$ .  $I_{CMax.} = 0.5mA$
- Low  $V_{CE(sat)}$ . Optimal for low voltage operation.
- Complements the 2SA1036

**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	32	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	500	mA
$P_C$	Collector Power Dissipation	200	mW
$T_J$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55-150	°C

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

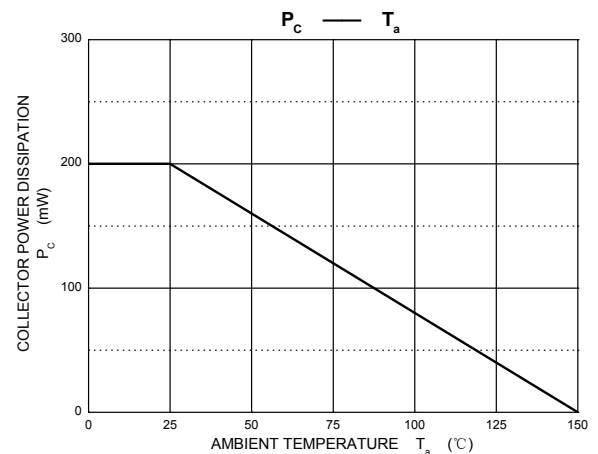
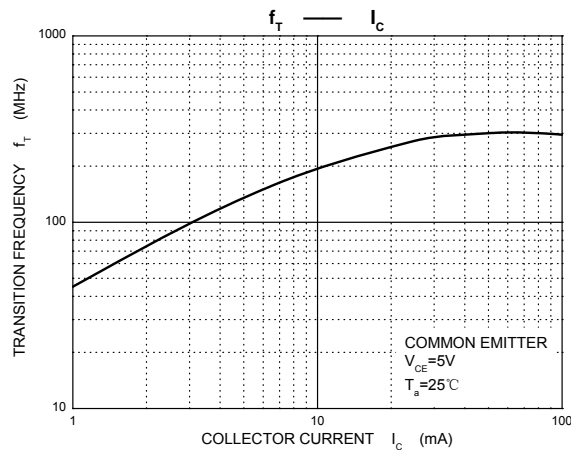
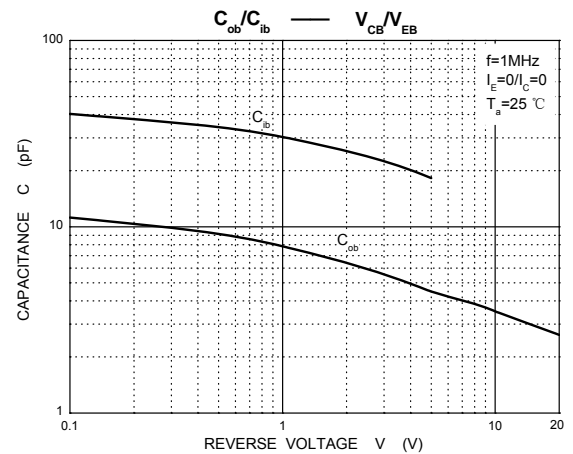
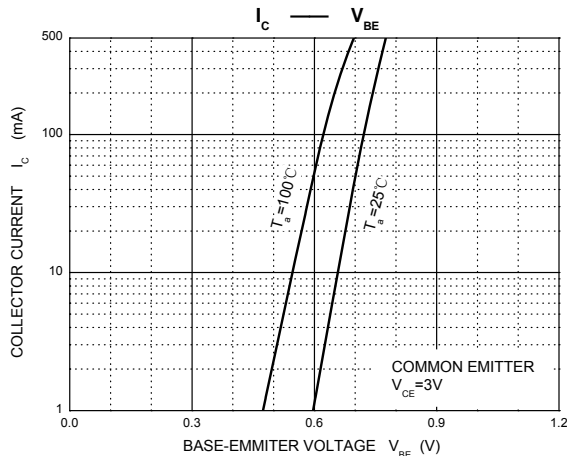
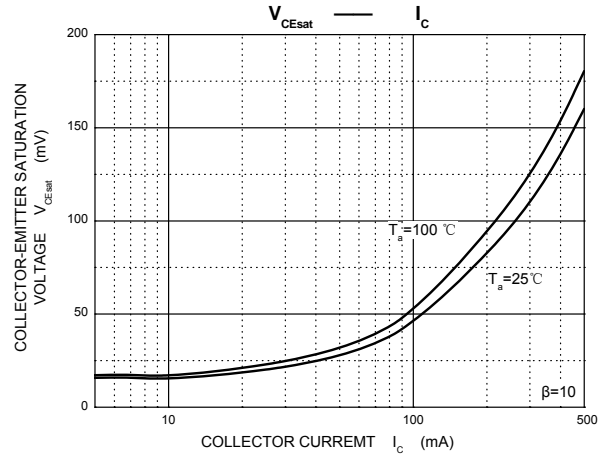
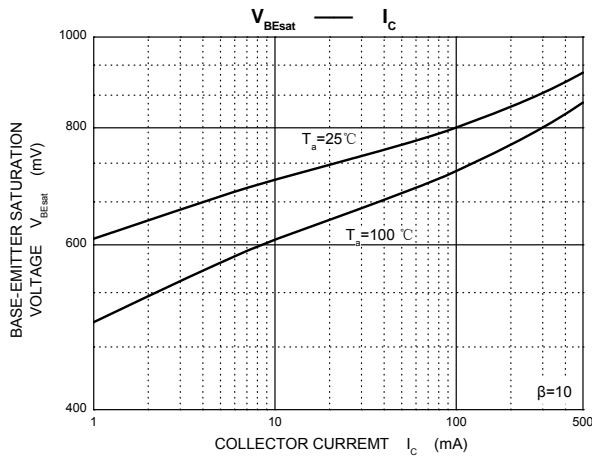
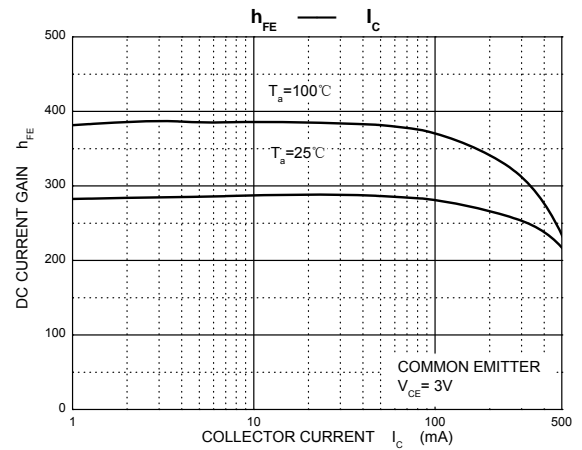
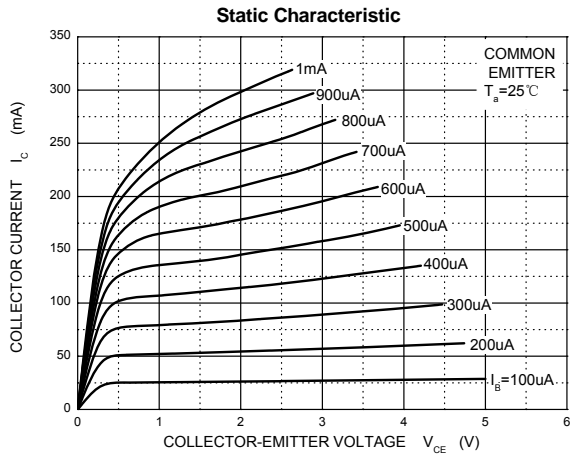
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	32			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=20V, I_E=0$			1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE}=3V, I_C=100mA$	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$			0.4	V
Transition frequency	$f_T$	$V_{CE}=5V, I_C=20mA, f=100MHz$		250		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		6.0		pF

**CLASSIFICATION OF  $h_{FE}$**

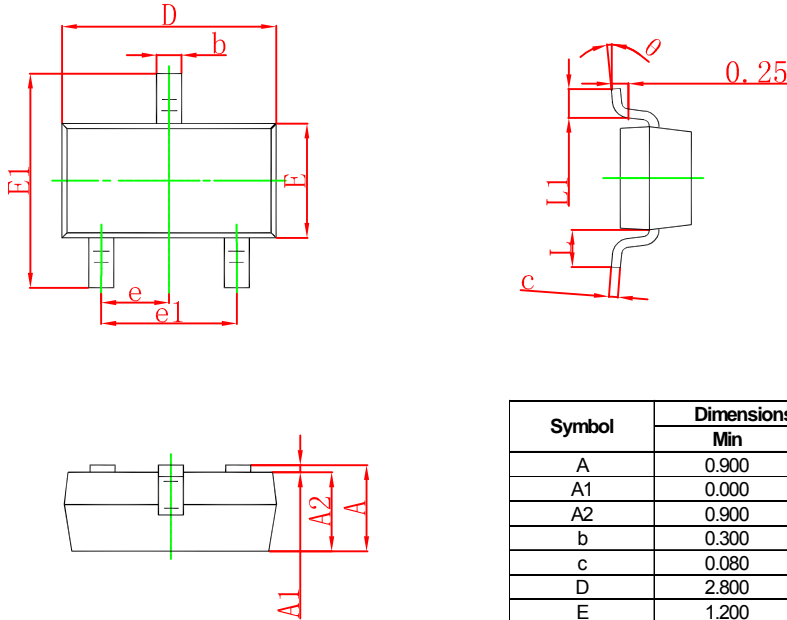
Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	CP	CQ	CR



Typical Characteristics

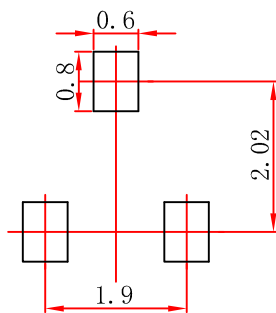


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance: ± 0.05mm.
  3. The pad layout is for reference purposes only.