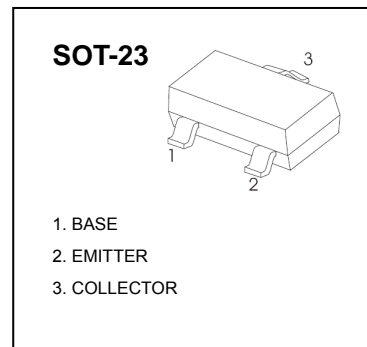


**SOT-23 Plastic-Encapsulate Transistors**

**FEATURES**

- Complementary to TKS9014

**MARKING: M6**



**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector Base Voltage	50	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-45	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current	-100	mA
P <sub>C</sub>	Collector Power Dissipation	200	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	625	°C/W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C

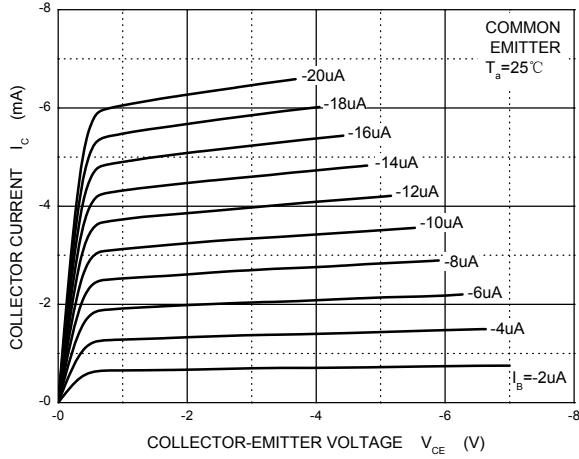
**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -100μA, I <sub>E</sub> = 0	-50			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -0.1mA, I <sub>B</sub> = 0	-45			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -100μA, I <sub>C</sub> = 0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = -50 V, I <sub>E</sub> = 0			-0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> = 0			-0.1	μA
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -1mA	200		450	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -100mA, I <sub>B</sub> = -10mA			-0.3	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -100mA, I <sub>B</sub> = -10mA			-1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -10mA f = 30MHz	150			MHz

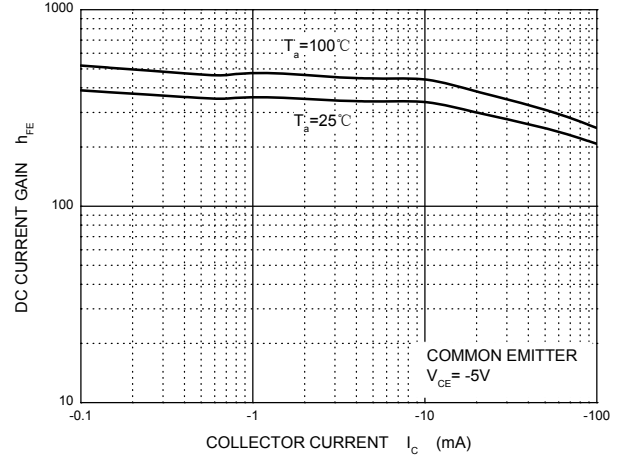
**CLASSIFICATION OF h<sub>FE</sub>**

Range	200-450
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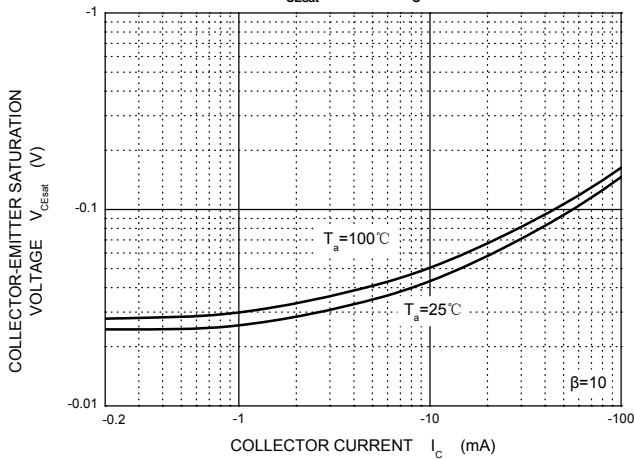
Static Characteristic



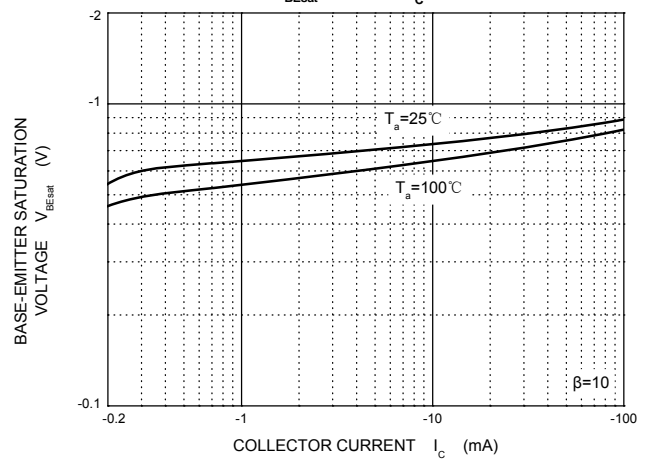
$h_{FE}$  —  $I_c$



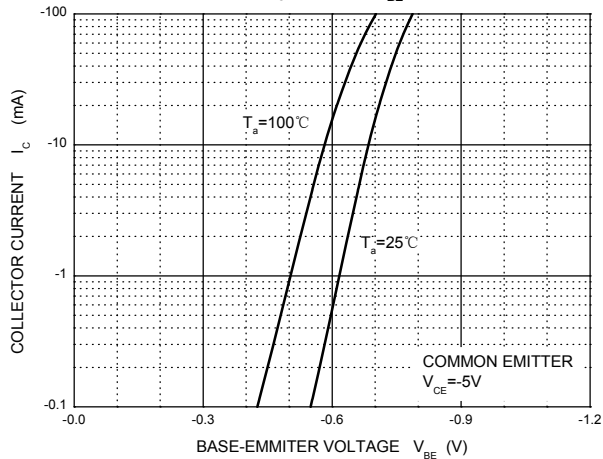
$V_{CEsat}$  —  $I_c$



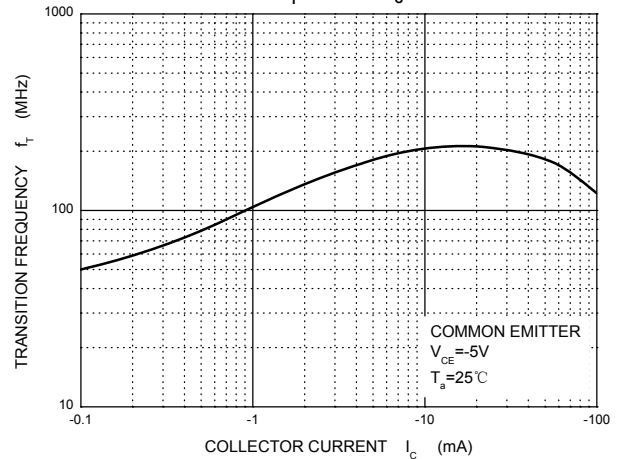
$V_{BEsat}$  —  $I_c$



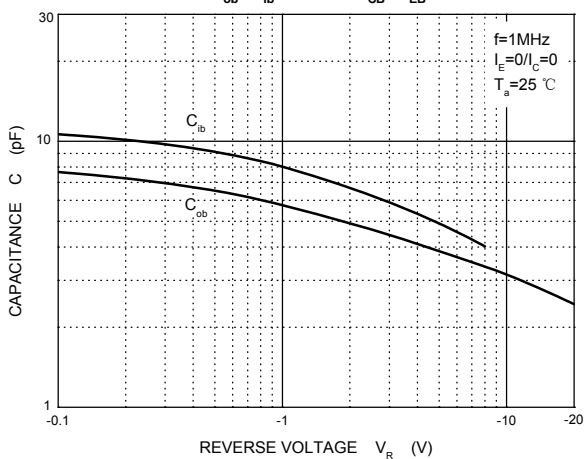
$I_c$  —  $V_{BE}$



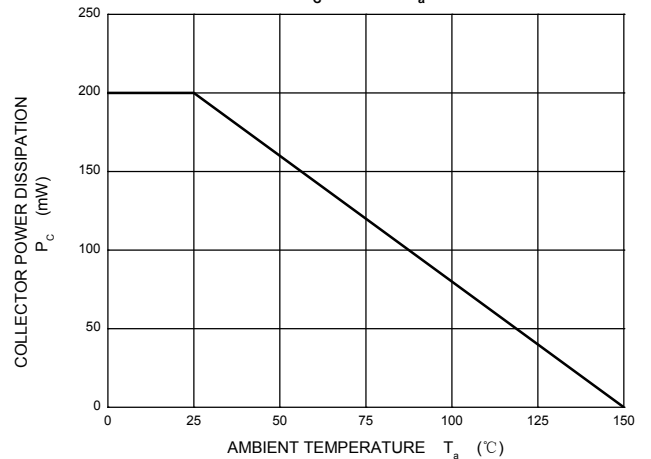
$f_T$  —  $I_c$

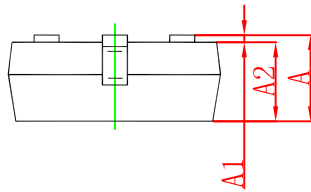
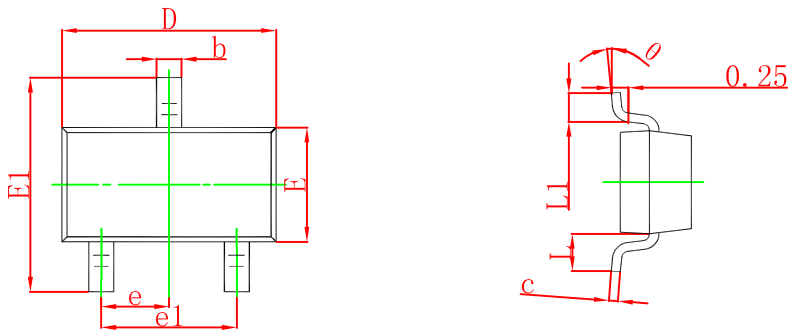


$C_{ob}/C_{ib}$  —  $V_{CB}/V_{EB}$



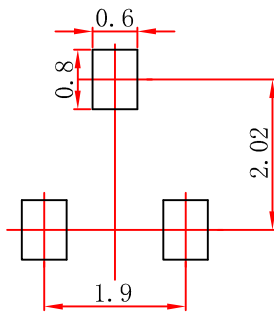
$P_c$  —  $T_a$





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:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.