TKS9013

TRANSISTOR (NPN)

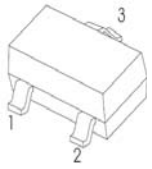
SOT-23 Plastic-Encapsulate Transistors

FEATURES

- High Collector Current.
- Complementary to TKS9012.
- Excellent h_{FE} Linearity.

MARKING: J3

SOT－23



1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	
V_{CBO}	Collector-Base Voltage	40	
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	500 mA	
P_C	Collector Power Dissipation	300 mW	
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	416	℃/W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55～+150	℃

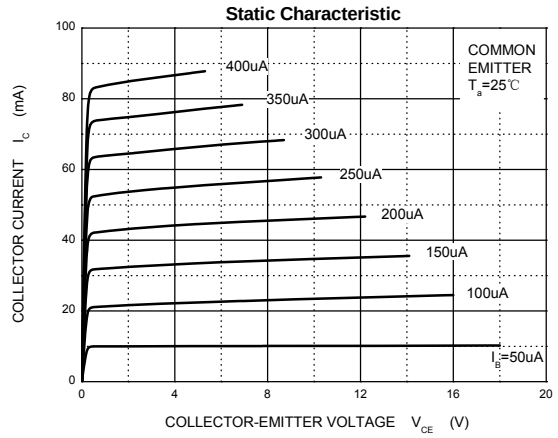
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

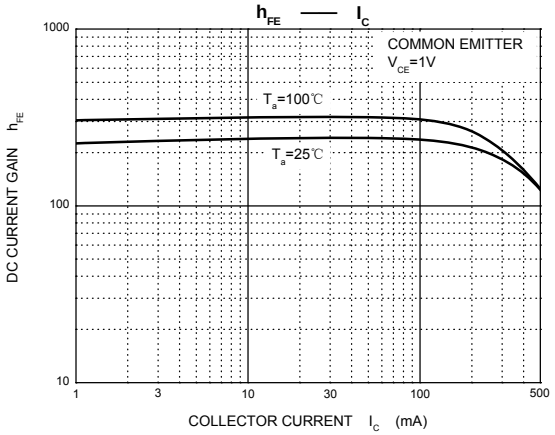
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=0.1mA, I_E=0	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=0.1mA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=40V, I_E=0			0.1	uA
Collector cut-off current	I_{CEO}	V_{CE}=20V, I_B=0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0			0.1	uA
DC current gain	$h_{FE(1)}$	V_{CE}=1V, I_C=50mA	200		350	
	$h_{FE(2)}$	V_{CE}=1V, I_C=500mA	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500mA, I_B=50mA			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=500mA, I_B=50mA			1.2	V
Base-emitter voltage	V_{BE}	V_{CB}=1V,I_C=10mA,			0.7	V
Transition frequency	f_T	V_{CE}=6V,I_C=20mA, f=30MHz	150			MHz
Collector output capacitance	C_{ob}	V_{CB}=6V, I_E=0, f=1MHz			8	pF

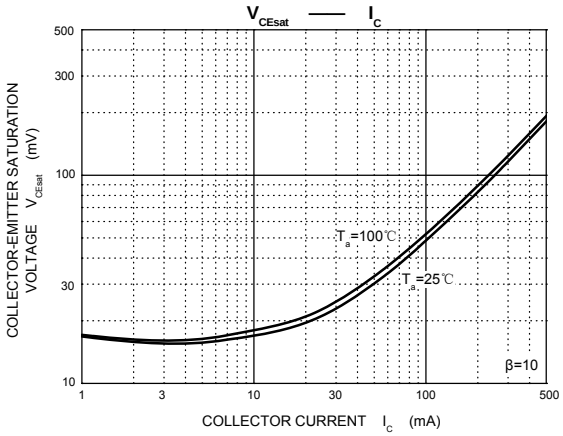
CLASSIFICATION OF $h_{FE(1)}$

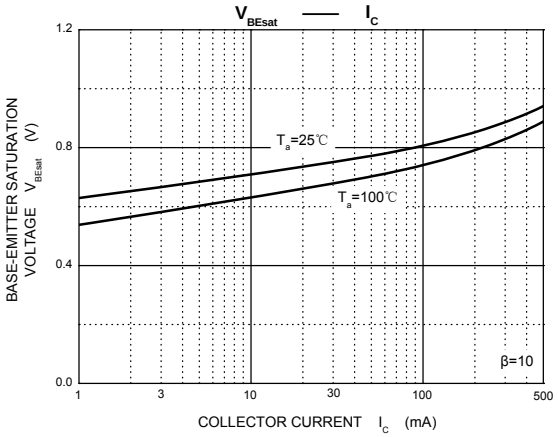
RANGE	200-350

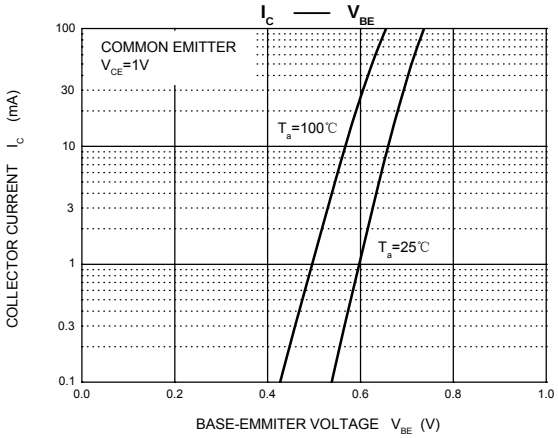
Typical Characteristics

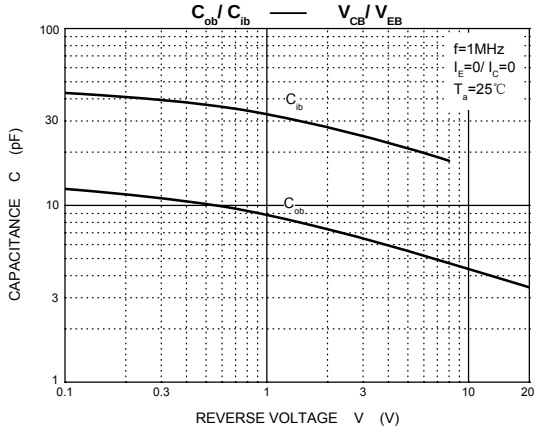


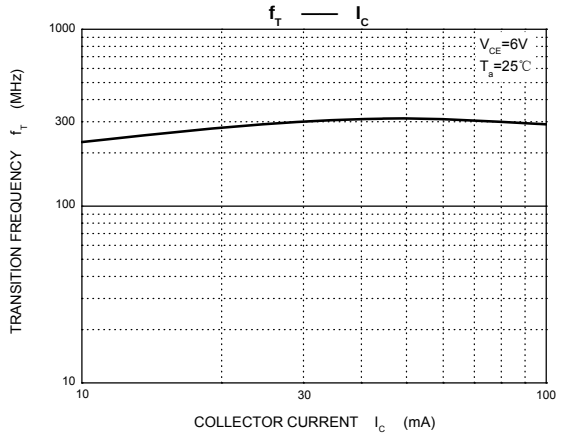


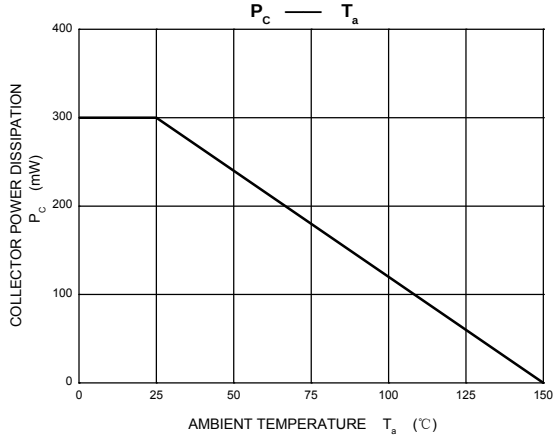


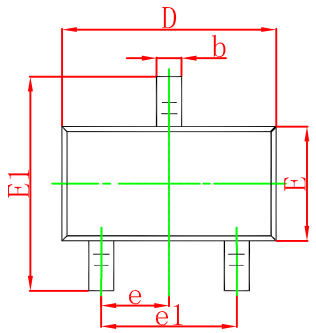


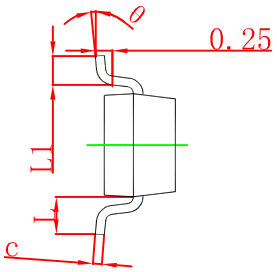


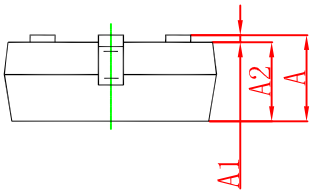






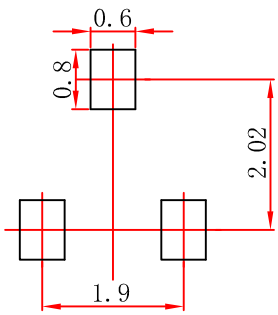






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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.