TKC945

TRANSISTOR (NPN)

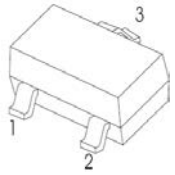
SOT-23 Plastic-Encapsulate Transistors

FEATURE

- Excellent h_{FE} Linearity
- Low noise
- Complementary to A733

MARKING:CR •

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS (T_a=25℃ 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	150	mA
P_C	Collector Power Dissipation	200	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	625	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

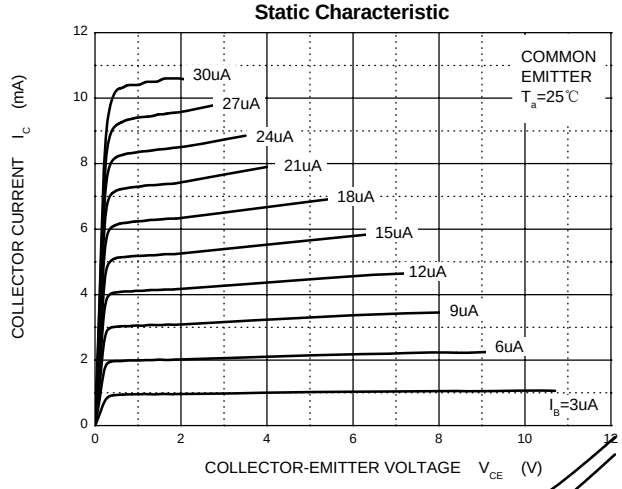
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100uA, I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA , I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=0.1mA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0			0.1	uA
Collector cut-off current	I_{CER}	V_{CE}=55V,R=10MΩ			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}=6 V , I_C=1mA	130		400	
	$h_{FE(2)}$	V_{CE}=6 V , I_C=0.1mA	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=100mA, I_B=10mA			1	V
Transition frequency	f_T	V_{CE}=6V,I_C=10mA,f =30 MHz	150			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0,f=1MHz			3.0	pF
Noise figure	NF	VCE=6V,IC=0.1mA Rg=10kΩ,f=1kMHz		4	10	dB

CLASSIFICATION OF $h_{FE(1)}$

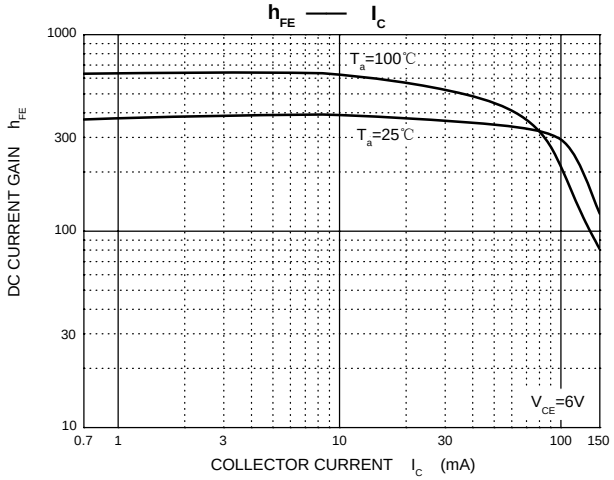
Rank	L	H
Range	130-200	200-400

Typical Characteristics

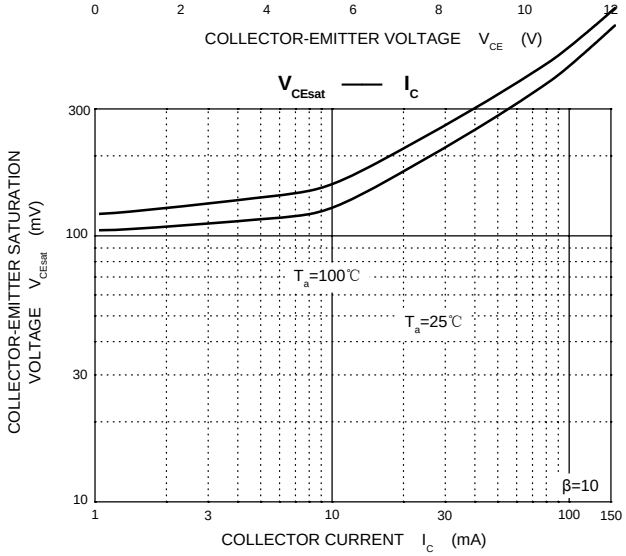
Static Characteristic



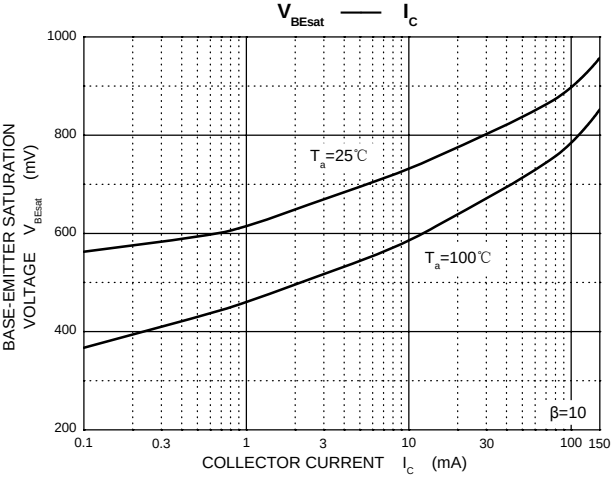
h_{FE} —— I_C



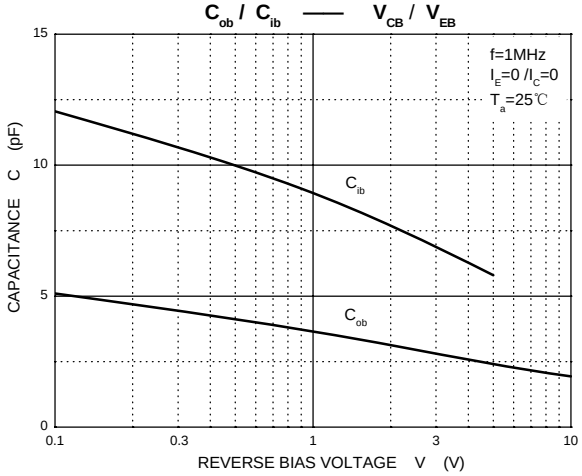
V_{CEsat} —— I_C



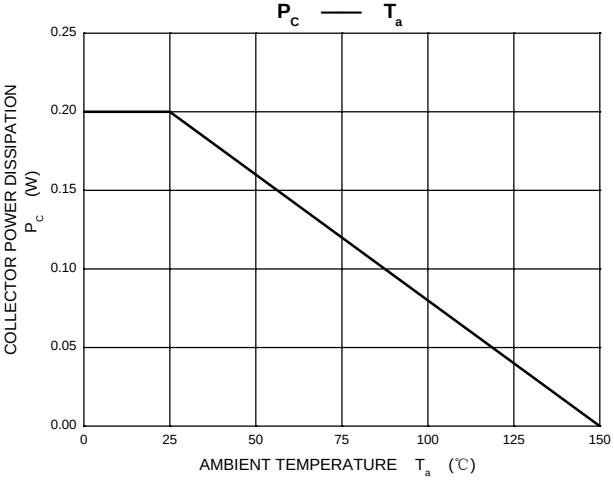
V_{BEsat} —— I_C

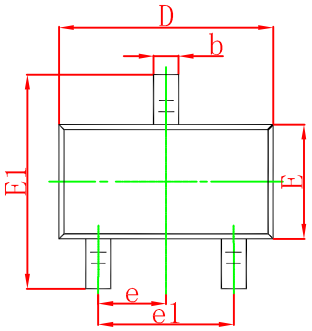


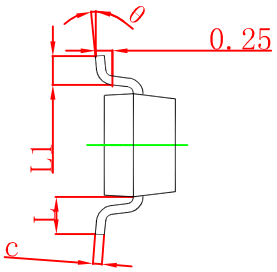
C_{ob} / C_{ib} —— V_{CB} / V_{EB}

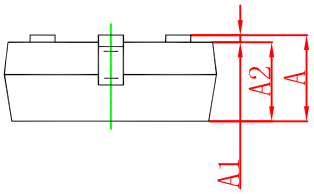


P_C —— T_a



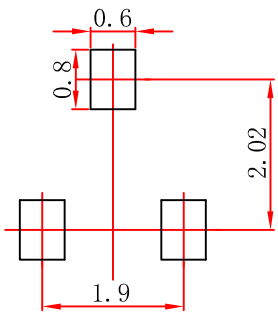






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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:± 0.05mm.
3.The pad layout is for reference purposes only.