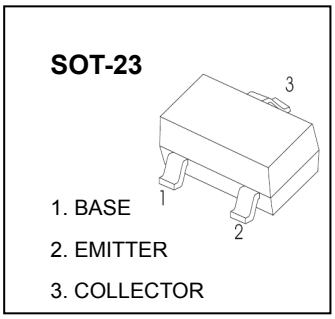
TKMMBT2907A

TRANSISTOR (PNP)

SOT-23 Plastic-Encapsulate Transistors



FEATURES

- Epitaxial planar die construction
- Complementary NPN Type available(TKMMBT2222A)

Marking: 2F

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-600	mA
P_D	Total Device Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	500	℃/W
T_J	Junction Temperature	150	
T_{stg}	Storage Temperature	-55 to +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=-10μA,I_E=0	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$*	I_C=-10mA,I_B=0	-60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10μA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-50V,I_E=0			-20	nA
Base cut-off current	I_{EBO}	V_{EB}=-3V, I_C=0			-10	nA
Collector cut-off current	I_{CEX}	V_{CE}=-30 V, $V_{BE(off)}$=-0.5V			-50	nA
DC current gain	$h_{FE(1)}$	V_{CE}=-10V,I_C=-150mA	100		300	
	$h_{FE(2)}$	V_{CE}=-10V,I_C=-0.1mA	75			
	$h_{FE(3)}$	V_{CE}=-10V,I_C=-1mA	100			
	$h_{FE(4)}$	V_{CE}=-10V,I_C=-10mA	100			
	$h_{FE(5)}$	V_{CE}=-10V,I_C=-500mA	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=-150mA,I_B=-15mA			-0.4	V
	$V_{CE(sat)}$*	I_C=-500mA,I_B=-50mA			-1.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=-150mA,I_B=-15mA			-1.3	V
	$V_{BE(sat)}$*	I_C=-500mA,I_B=-50mA			-2.6	V
Transition frequency	f_T	V_{CE}=-20V,I_C=-50mA,f=100MHz	200			MHz
Delay time	t_d	V_{CE}=-30V,I_C=-150mA,$_{B1}$=-15mA			10	ns
Rise time	t_r				25	ns
Storage time	t_S	V_{CE}=-6V,I_C=-150mA, I_{B1}=- I_{B2}=- 15mA			225	ns
Fall time	t_f				60	ns

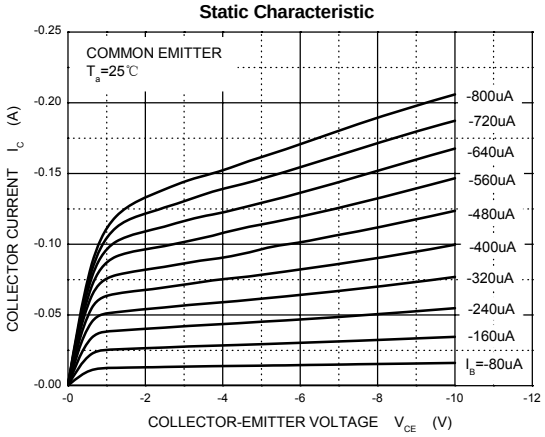
*Pulse test: t_p≤300μs, δ≤0.02.

CLASSIFICATION OF $h_{FE(1)}$

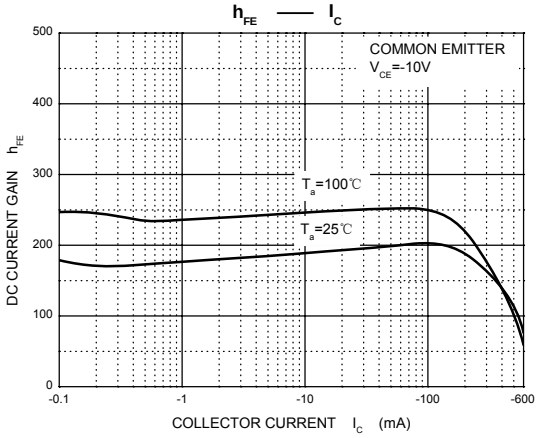
RANGE	100 - 300
MARKING	2F

Typical Characteristics

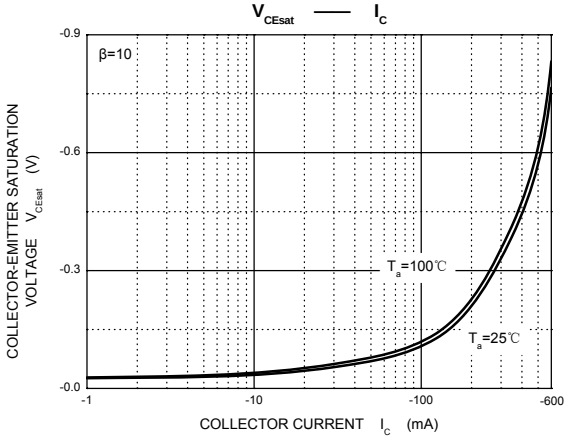
Static Characteristic



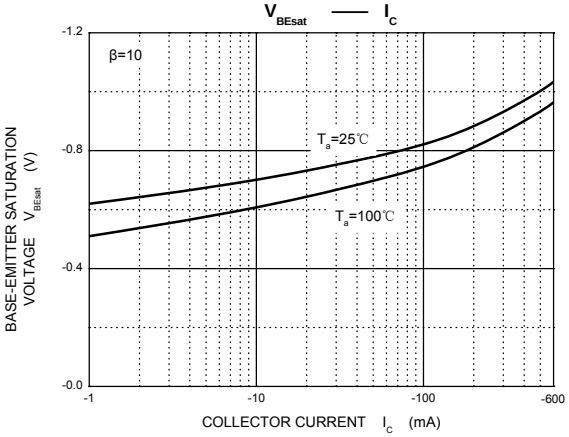
h_{FE} — I_C



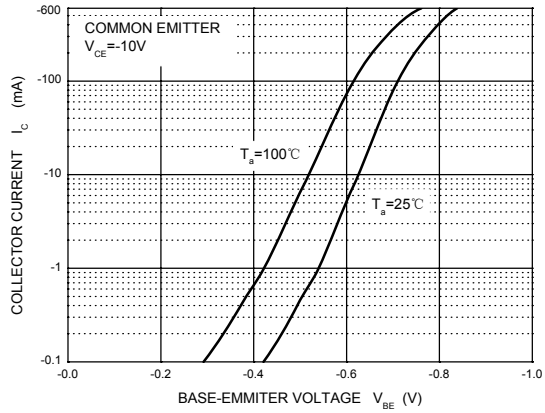
V_{CEsat} — I_C



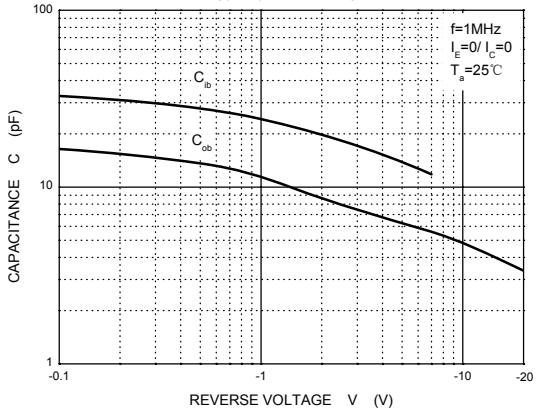
V_{BEsat} — I_C



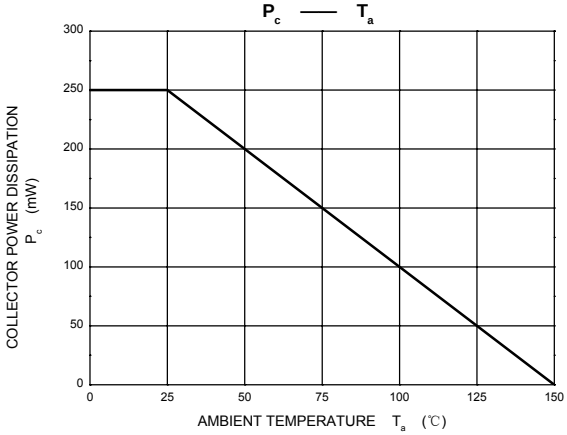
I_C — V_{BE}

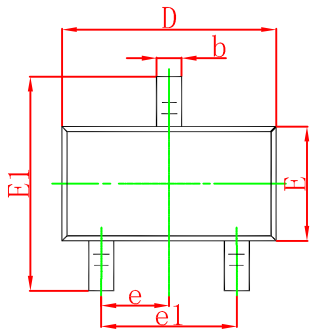


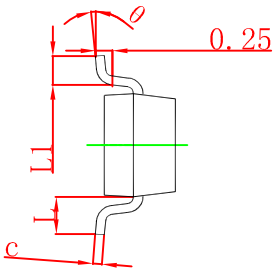
C_{ob} / C_{ib} — V_{CB} / V_{EB}

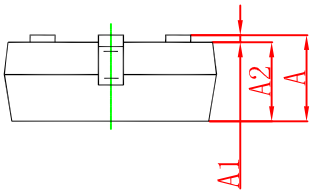


P_c — T_a



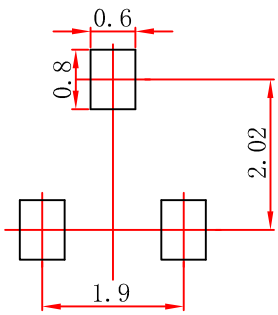






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037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