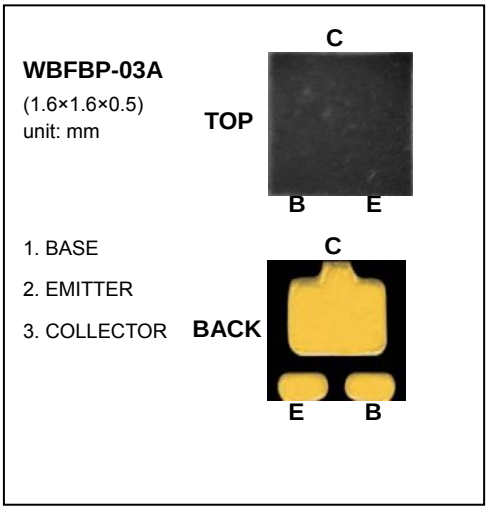
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO.,LTD

WBFBP-03A Plastic-Encapsulate Transistors

TK2222ATTD03 TRANSISTOR

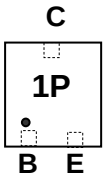


DESCRIPTION
NPN Epitaxial planar Silicon Transistor

FEATURES
Complementary PNP Type available (TK2907ATTD03)

PPLICATION
general purpose amplifier, switching.
For portable equipment:(i.e. Mobile phone,MP3, MD,CD-ROM, DVD-ROM, Note book PC, etc.)

MARKING:1P



MAXIMUM RATINGS T_A=25℃ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	600	mA
P_C	Collector Dissipation	150	mW
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55to+150	℃

ELECTRICAL CHARACTERISTICS (Tamb=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	75			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 10mA, I_B=0	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}=70 V,I_E=0			0.1	μA
Collector cut-off current	I_{CEX}	V_{CE}=60V,$V_{BE(off)}$=3V			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 3V,I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=10V,I_C= 0.1mA	35			
	$h_{FE(2)}$	V_{CE}=10V,I_C= 1mA	50			
	$h_{FE(3)}$	V_{CE}=10V,I_C= 10mA	75			
	$h_{FE(4)}$	V_{CE}=10V,I_C= 150mA	100		400	
	$h_{FE(5)}$	V_{CE}=10V,I_C= 500mA	40			
Collector-emitter saturation voltage	V_{CE}(sat)	I_C=500mA,I_B= 50mA I_C=150mA,I_B=15mA			1 0.3	V
Base-emitter saturation voltage	V_{BE}(sat)	I_C=500mA,I_B= 50mA I_C=150mA,I_B=15mA			2 1.2	V
Transition frequency	f_T	V_{CE}=20V, I_C= 20mA f=100MHz	300			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz			8	pF
Noise figure	NF	V_{CB}=10V,I_c=0.1mA, f=1KHz,Rs=1KΩ			4	dB

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Delay time	t_d	V_{CC}=30V, $V_{BE(off)}$=-0.5V			10	nS
Rise time	t_r	I_C=150mA , I_{B1}= 15mA			25	nS
Storage time	t_S	V_{CC}=30V, I_C=150mA			225	nS
Fall time	t_f	I_{B1}=-I_{B2}=15mA			60	nS

Typical Characteristics

TK2222ATTD03

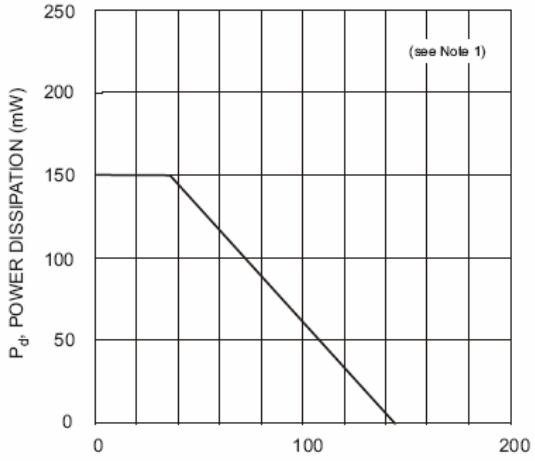


Fig. 1, Power Derating Curve

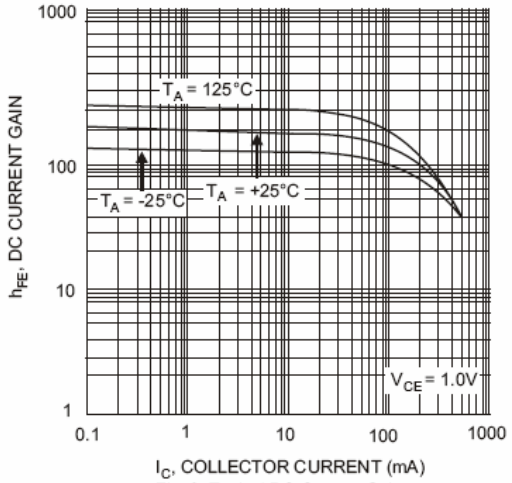


Fig. 2 Typical DC Current Gain vs Collector Current

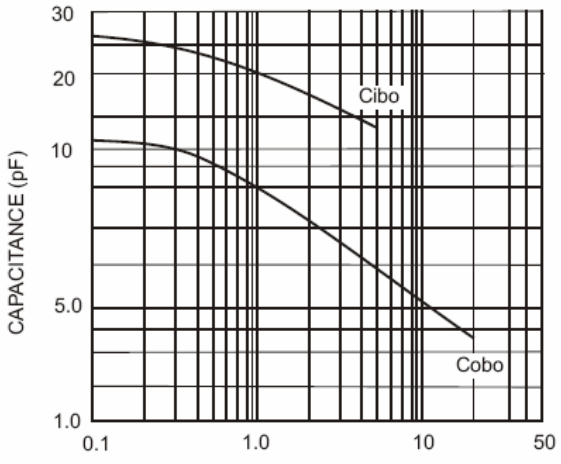


Fig. 3 Typical Capacitance

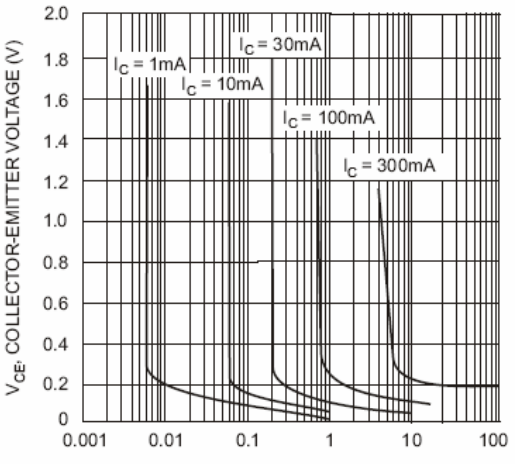


Fig. 4 Typical Collector Saturation Region

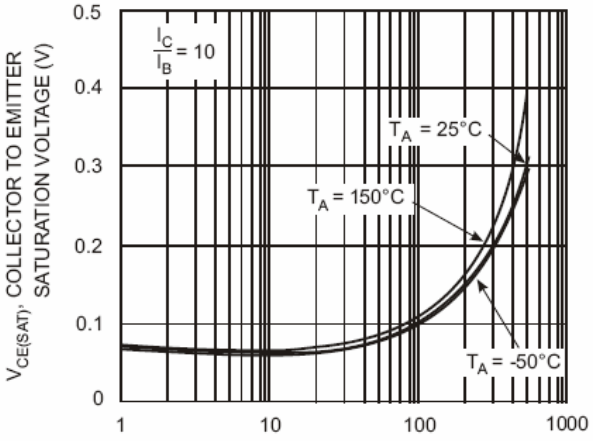


Fig. 5 Collector Emitter Saturation Voltage vs. Collector Current

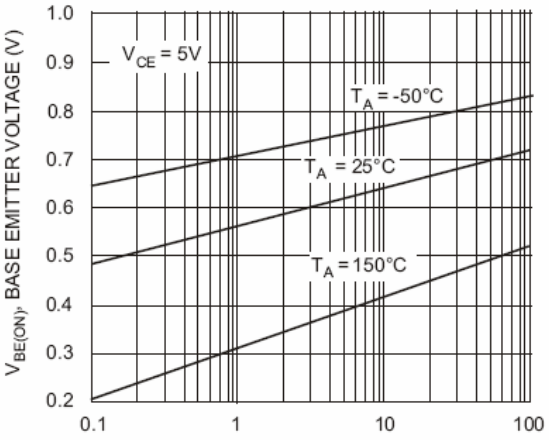


Fig. 6 Base Emitter Voltage vs. Collector Current

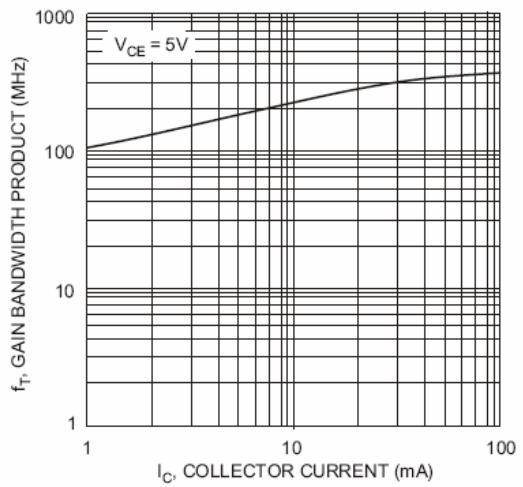


Fig. 7 Gain Bandwidth Product vs. Collector Current