

**WBFBP-03A Plastic-Encapsulate Transistors****TK2907ATTD03 TRANSISTOR****DESCRIPTION**

PNP Epitaxial planar type Silicon Transistor

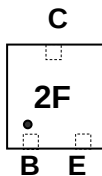
FEATURES

Complementary NPN Type available (TK2222ATTD03)

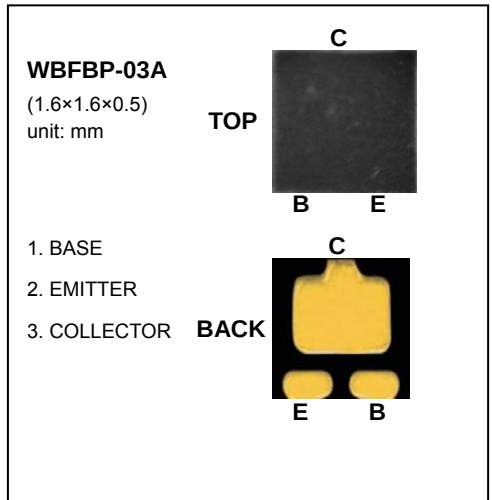
PPLICATION

general purpose amplifier, switching.

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

MARKING:2F**MAXIMUM RATINGS** $T_A=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
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_C	Collector Dissipation	150	mW
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55to+150	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS** ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$			-0.01	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-0.01	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = -10\text{V}, I_C = -0.1\text{mA}$	75			
	$h_{FE(2)}$	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$	100			
	$h_{FE(3)}$	$V_{CE} = -10\text{V}, I_C = -10\text{mA}$	100			
	$h_{FE(4)}$	$V_{CE} = -10\text{V}, I_C = -150\text{mA}$	100		300	
	$h_{FE(5)}$	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$ $I_C = -150\text{mA}, I_B = -15\text{mA}$			-1.6 -0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$ $I_C = -150\text{mA}, I_B = -15\text{mA}$			-2.6 -1.3	V
Transition frequency	f_T	$V_{CE} = -20\text{V}, I_C = -50\text{mA}$ $f = 100\text{MHz}$	200			MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$			8	pF
Noise figure	NF	$V_{CB} = -5\text{V}, I_C = -0.1\text{mA}$, $f = 1\text{KHz}, R_s = 1\text{K}\Omega$			4	dB

ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Delay time	t_d	$V_{CC}=-30V$, $I_C=-150mA$, $I_{B1}=-15mA$			10	nS
Rise time	t_r				40	nS
Storage time	t_s	$V_{CC}=-6V$, $I_C=-150mA$ $I_{B1}=-I_{B2}=-15mA$			225	nS
Fall time	t_f				30	nS

Typical Characteristics

TK2907ATTD03

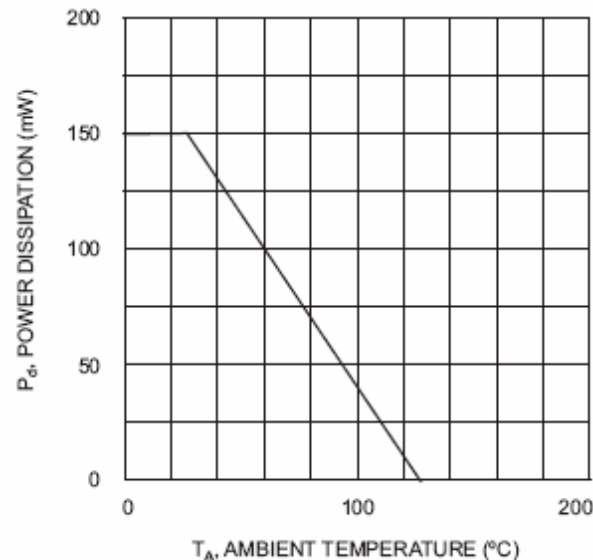


Fig. 1 Power Derating Curve, Total Package

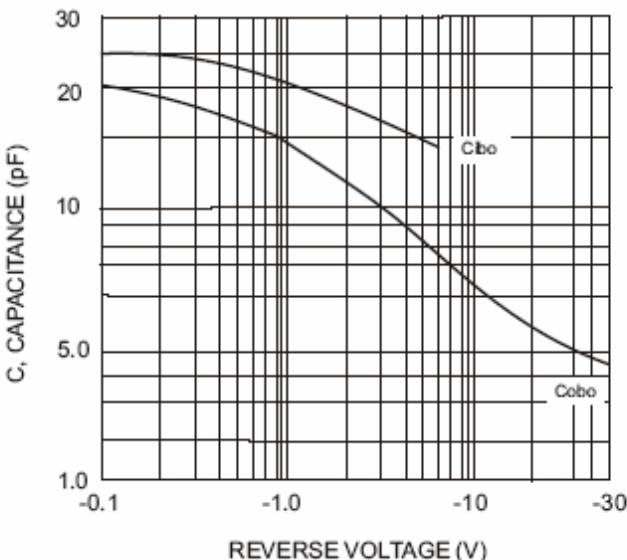


Fig. 2 Capacitances (Typical)

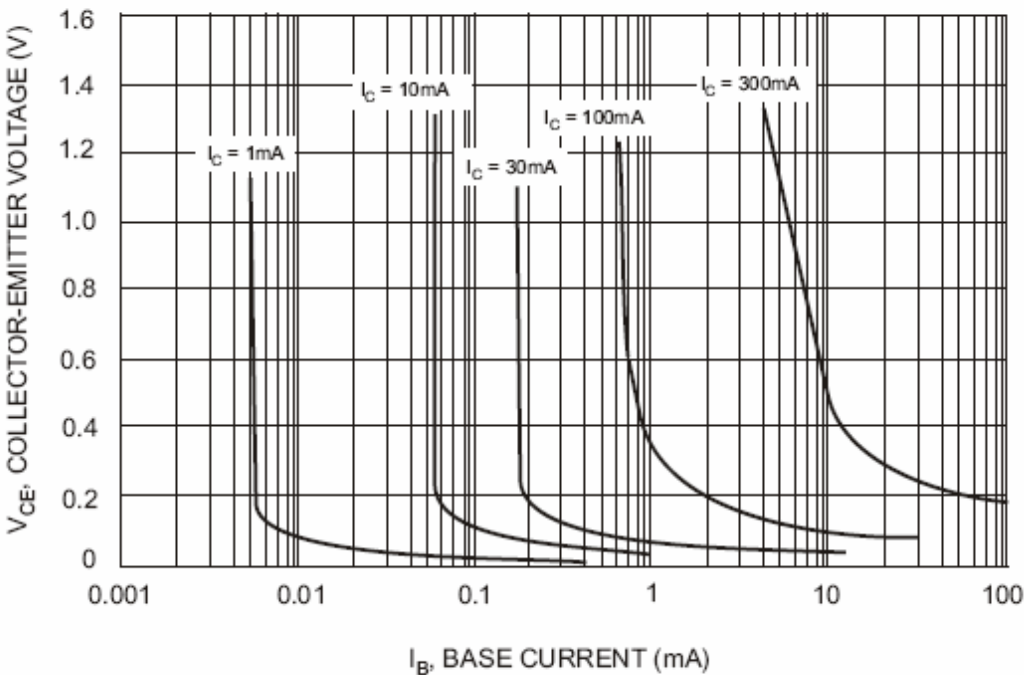


Fig. 3 Typical Collector Saturation Region

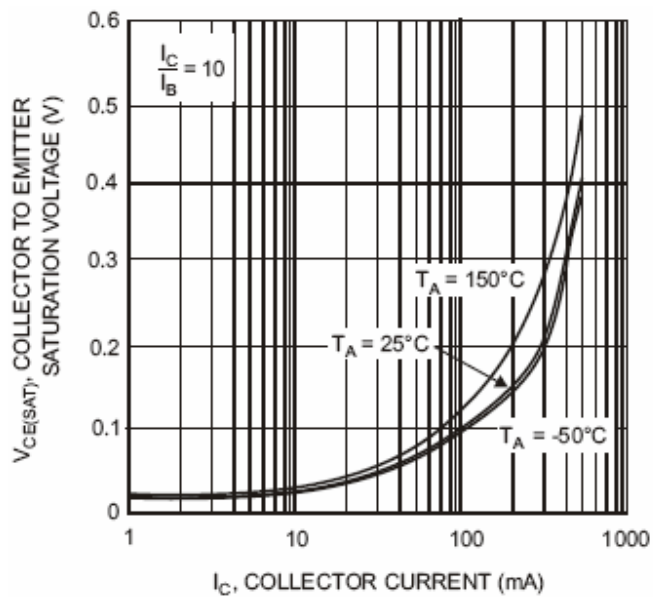


Fig. 4, Collector Emitter Saturation Voltage vs. Collector Current

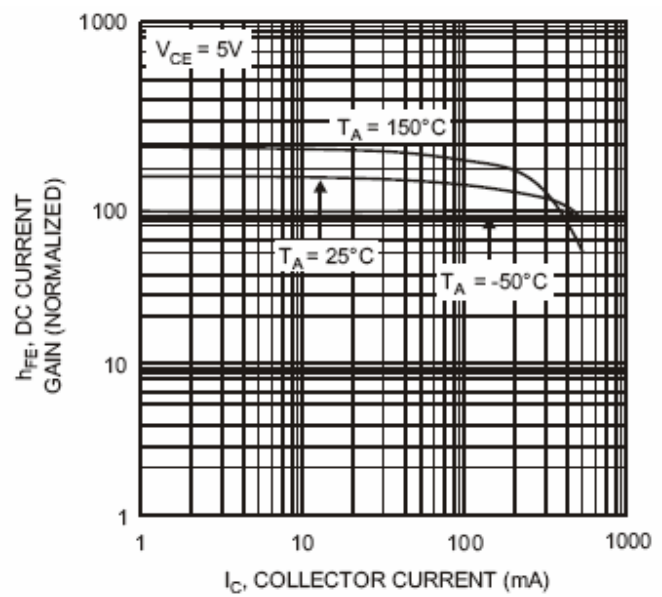


Fig. 5, DC Current Gain vs. Collector Current

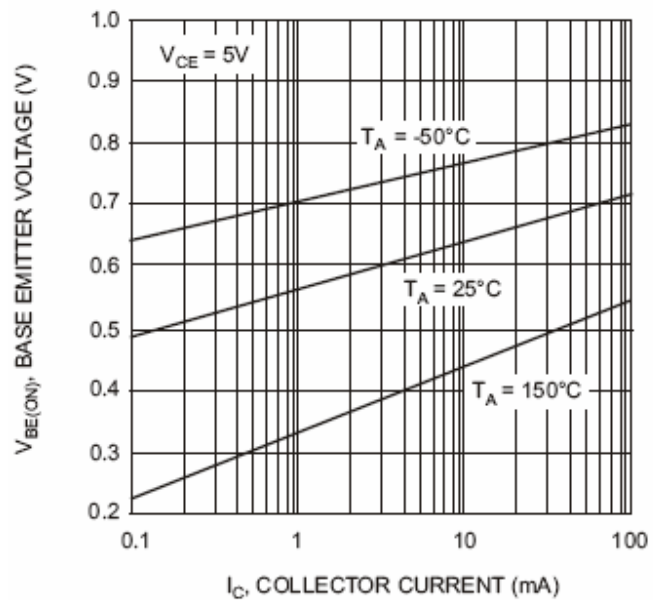


Fig. 6, Base Emitter Voltage vs. Collector Current

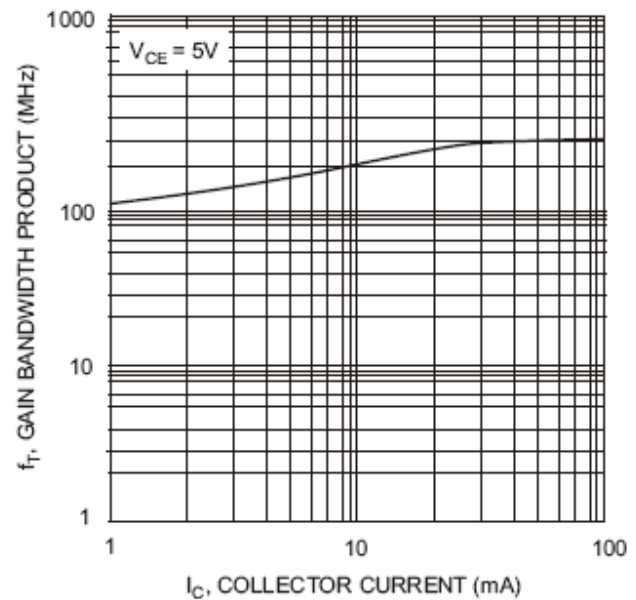


Fig. 7, Gain Bandwidth Product vs. Collector Current