



WBFBP-03B Plastic-Encapsulate Transistors

TP9015NND03 TRANSISTOR

DESCRIPTION

PNP Epitaxial Silicon Transistor

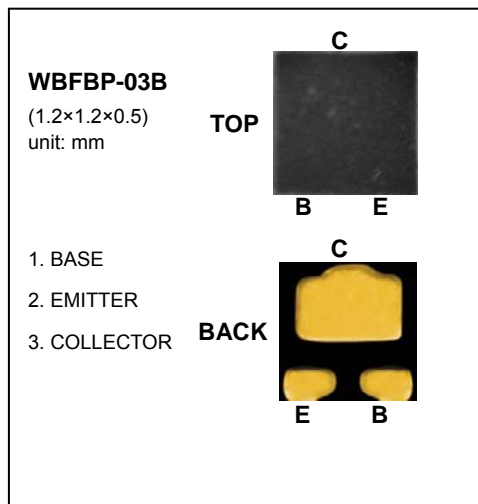
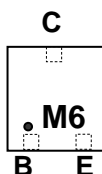
FEATURES

High h_{FE} and good linearity
Complementary to TP9014NND03

APPLICATION

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

MARKING: M6



MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-45	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_c	Collector Current -Continuous	-0.1	A
P_c	Collector Dissipation	0.15	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_c = -100\mu\text{A}, I_E = 0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_c = -0.1\text{mA}, I_B = 0$	-45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}, I_c = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_c = 0$			-0.1	μA
DC current gain	h_{FE}	$V_{CE} = -5\text{V}, I_c = -1\text{mA}$	200		1000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = -100\text{mA}, I_B = -10\text{mA}$			-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_c = -100\text{mA}, I_B = -10\text{mA}$			-1	V
Transition frequency	f_T	$V_{CE} = -5\text{V}, I_c = -10\text{mA}, f = 30\text{MHz}$	150			MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$			7	pF
Noise figure	NF	$V_{CE} = -5\text{V}, I_c = -0.2\text{mA}, f = 1\text{KHz}, R_S = 2\text{K}\Omega$			6	dB

CLASSIFICATION OF h_{FE}

Rank	L	H
Range	200-450	450-1000