



# WBFBP-03A Plastic-Encapsulate Transistors

## MMBTA92E TRANSISTOR

### DESCRIPTION

PNP Epitaxial Silicon Transistor

### FEATURES

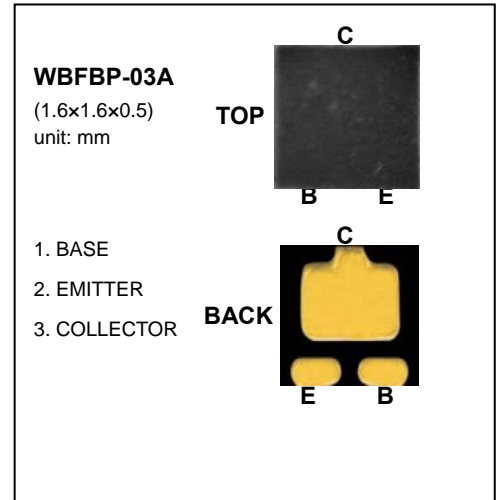
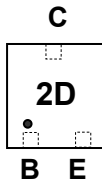
Power dissipation  $P_{CM}$  : 0.15 W ( $T_{amb}=25^{\circ}C$ )

### APPLICATION

High Voltage Amplifier

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

### MARKING:2D



### MAXIMUM RATINGS $T_A=25^{\circ}C$ unless otherwise noted

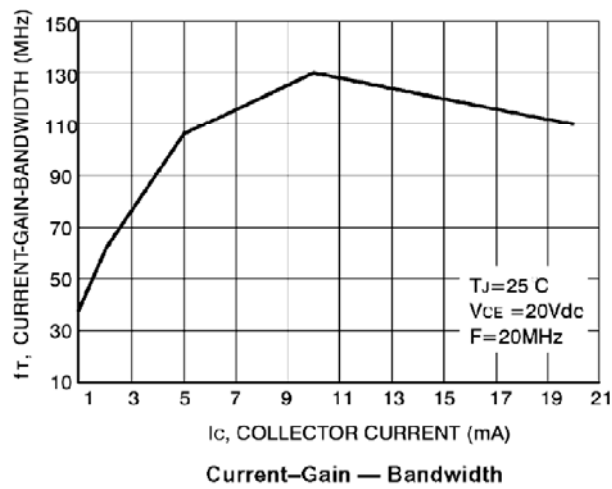
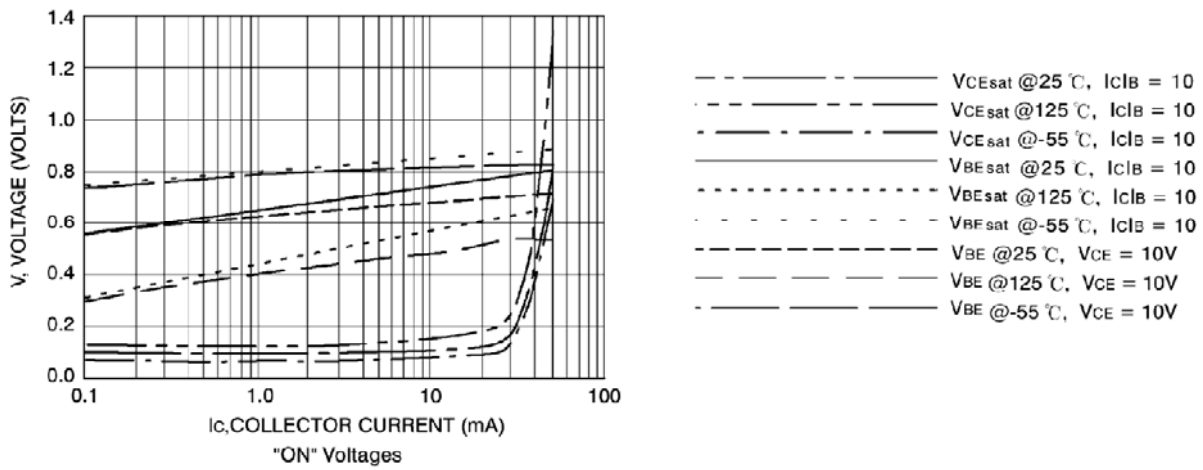
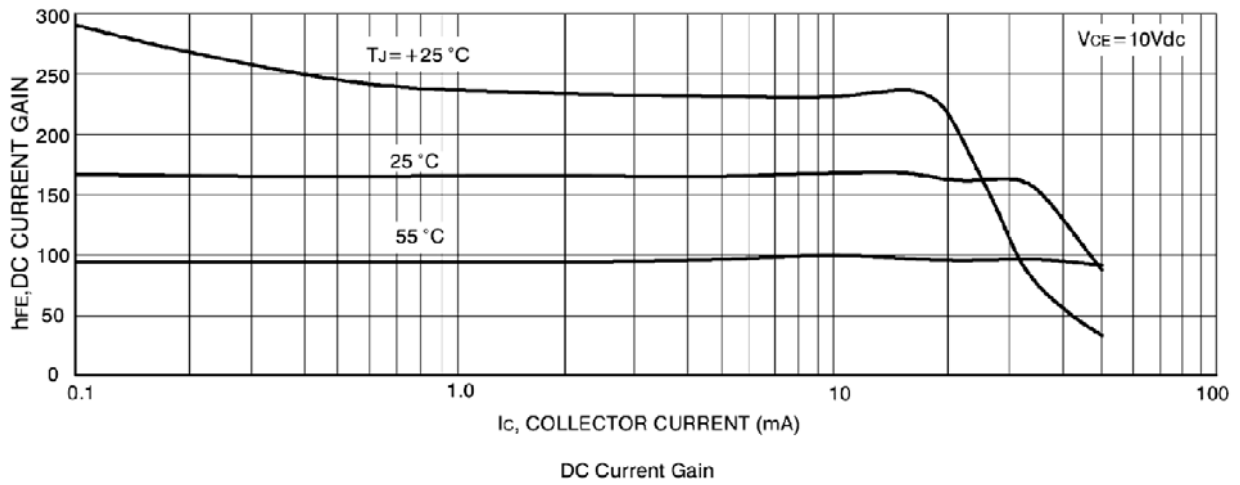
Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-310	V
$V_{CEO}$	Collector-Emitter Voltage	-305	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current -Continuous	-300	mA
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature	-55-150	$^{\circ}C$
$R_{\theta JA}$	Thermal Resistance, junction to Ambient	200	$^{\circ}C/W$
$R_{\theta JC}$	Thermal Resistance, unction to Case	83.3	$^{\circ}C/W$

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

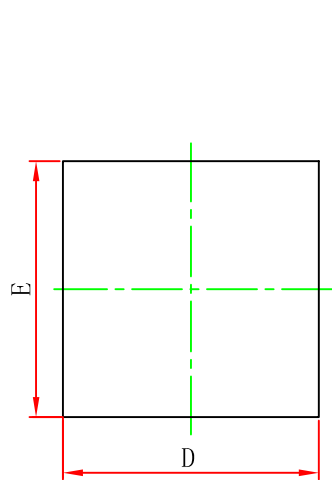
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu A, I_E = 0$	-310		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1mA, I_B = 0$	-305		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu A, I_C = 0$	-5		V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -200V, I_E = 0$		-0.25	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CE} = -200V, I_B = 0$		-0.25	$\mu A$
		$V_{CE} = -300V, I_B = 0$		-5	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5V, I_C = 0$		-0.1	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE} = -10V, I_C = -1mA$	60		
	$h_{FE(2)}$	$V_{CE} = -10V, I_C = -10mA$	100	200	
	$h_{FE(3)}$	$V_{CE} = -10V, I_C = -30mA$	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -20mA, I_B = -2mA$		-0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -20mA, I_B = -2mA$		-0.9	V
Transition frequency	$f_T$	$V_{CE} = -20V, I_C = -10mA$ $f = 30MHz$	50		MHz

# Typical Characteristics

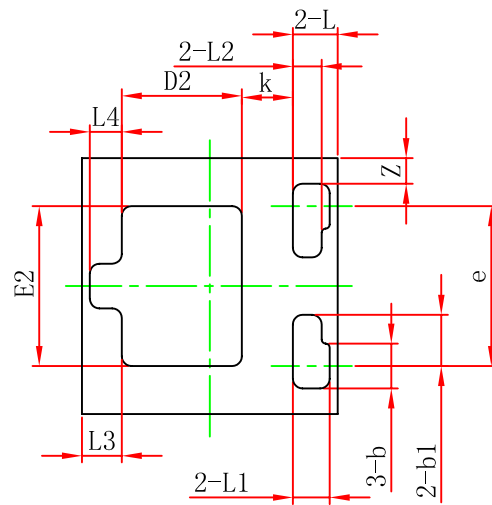
# MMBTA92E



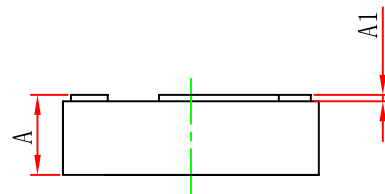
# WBFBP-03A(1.6×1.6×0.5) PACKAGE OUTLINE DIMENSIONS



TOP VIEW

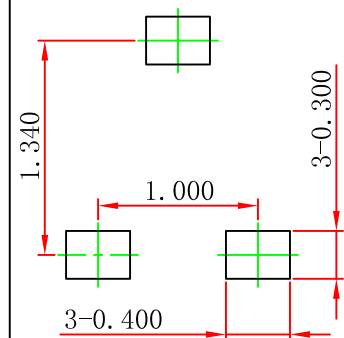


BOTTOM VIEW



SIDE VIEW

(LAND PATTERN RECOMMENDATION)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.090	0.000	0.004
b	0.230	0.330	0.009	0.013
b1	0.320 REF.		0.013 REF.	
D	1.550	1.650	0.061	0.065
E	1.550	1.650	0.061	0.065
D2	0.750 REF.		0.030 REF.	
E2	1.000 REF.		0.040 REF.	
e	1.000 TYP.		0.040 TYP.	
L	0.280 REF.		0.011 REF.	
L1	0.230 REF.		0.009 REF.	
L2	0.180 REF.		0.007 REF.	
L3	0.250 REF.		0.010 REF.	
L4	0.200 REF.		0.008 REF.	
k	0.320 REF.		0.013 REF.	
z	0.160 REF.		0.006 REF.	