

PNP Transistor

80V 225mW SOT-23

MMBTA56

MERITEK

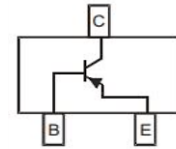
FEATURE

- Silicon Planar Design For High Voltage Application
- Collector current: 500mA
- Application: Signal Processing, Switching, Amplification



MECHANICAL DATA

- Case: SOT-23. molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026



MAXIMUM RATING

Parameter		Symbol	Value	Unit
Collector-Base Voltage		V_{CBO}	80	V
Collector-Emitter Voltage		V_{CEO}	80	V
Emitter-Base Voltage		V_{EBO}	4	V
Collector Current		I_C	500	mA
Power Dissipation (Note 2)	$T_A = 25^\circ\text{C}$	P_D	225	mW
	Derate above 25°C		1.8	mW/ $^\circ\text{C}$
Power Dissipation, (Note 3)	$T_A = 25^\circ\text{C}$	P_D	300	mW
	Derate above 25°C		2.4	mW/ $^\circ\text{C}$
Thermal Resistance	Junction to Ambient, (Note 2)	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
	Junction to Ambient, (Note 3)		417	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temperature		T_J, T_{stg}	-55 ~+150	$^\circ\text{C}$

Note:

1. $T_A = 25^\circ\text{C}$ unless otherwise noted
2. Device on FR-4 = 70 x 60 x 1mm.
3. Alumina = 0.4 x 0.3 x 0.024 in. 99.5 alumina.

ELECTRICAL CHARACTERISTICS

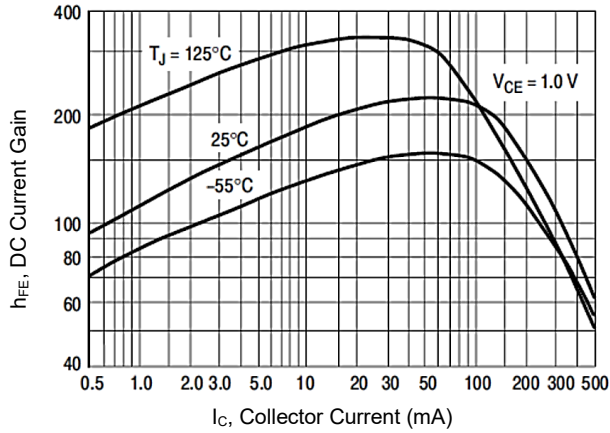
Parameter- ON Characteristic	Conditions	Symbol	Min.	Max.	Unit
DC Current Gain	$V_{CE} = 1.0\text{V}, I_C = 10\text{mA}$	h_{FE}	100	-	-
	$V_{CE} = 1.0\text{V}, I_C = 100\text{mA}$		100	-	-
Collector-Emitter Saturation Voltage	$I_C = 100\text{mA}, I_B = 10\text{mA}$	$V_{CE(SAT)}$	-	0.25	V
Base-Emitter On Voltage	$I_C = 100\text{mA}, V_{CE} = 1\text{V}$	$V_{BE(ON)}$	-	1.20	V
Parameter- OFF Characteristic	Conditions	Symbol	Min.	Max.	Unit
Collector-Emitter Breakdown Voltage	$I_C = 1.0\text{mA}, I_B = 0$	$V_{(BR)CEO}$	80	-	V
Emitter-Base Breakdown Voltage	$I_E = 100\mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	4.0	-	V
Collector Cut-Off Current	$V_{CE} = 60\text{V}, I_B = 0$	I_{CES}	-	0.1	μA
Collector Base Cut-Off Current	$V_{CB} = 80\text{V}, I_E = 0$	I_{CBO}	-	0.1	μA
Parameter-Small Signal	Conditions	Symbol	Min.	Max.	Unit
Current-Gain — Bandwidth Product	$V_{CE} = 2\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	f_T	100	-	MHz

Note:

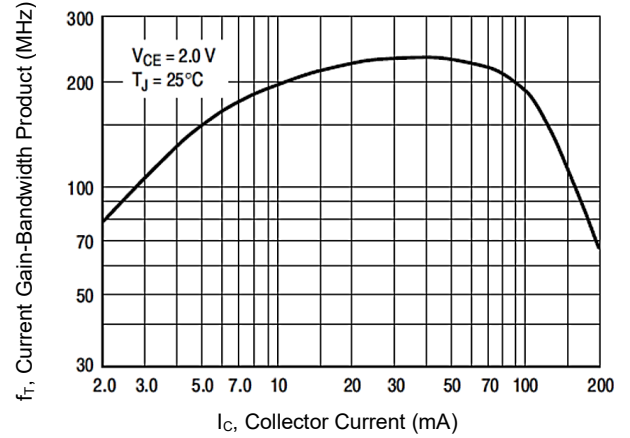
1. $T_A = 25^\circ\text{C}$ unless otherwise noted

CHARACTERISTIC CURVES

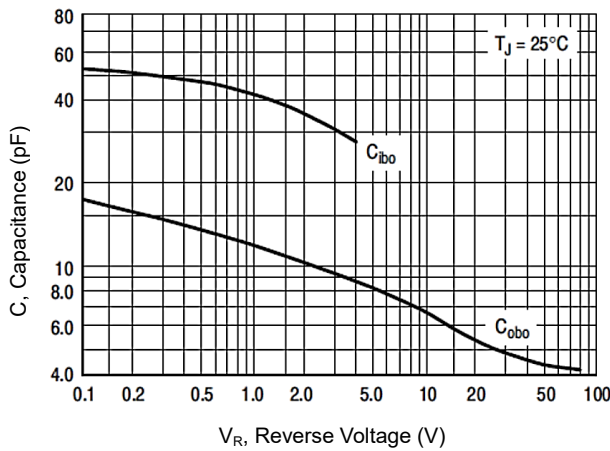
Current Gain Vs Collector Current



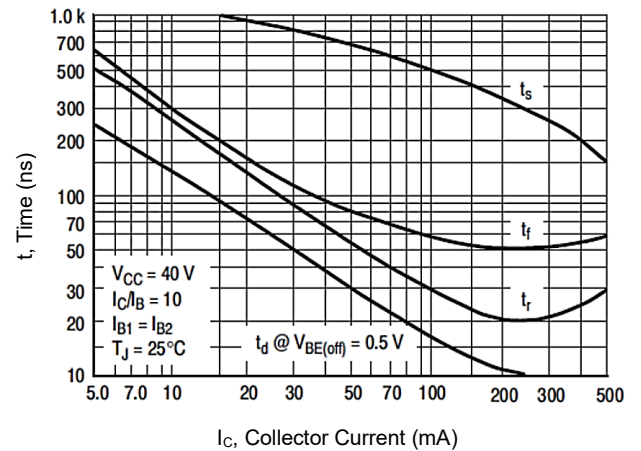
Current-Gain- Bandwidth Product



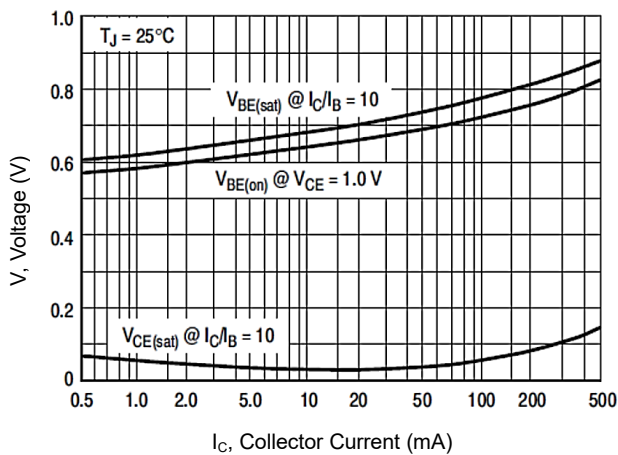
Capacitance



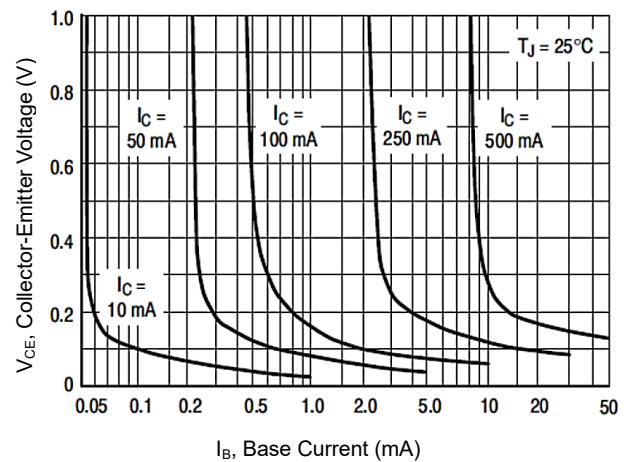
Switching Time



On Voltages



Collector Saturation Region



PNP Transistor

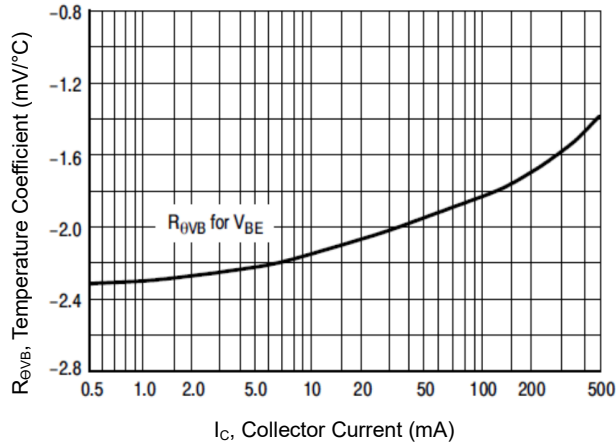
80V 225mW SOT-23

MMBTA56

MERITEK

CHARACTERISTIC CURVES

Base-Emitter Temperature Coefficient



DIMENSIONS AND RECOMMENDED LAND PATTERN

Item	Min (mm)	Max (mm)
A1	-	0.10
A2	0.89	1.40
b	0.30	0.50
c	0.08	0.20
D	2.70	3.10
e	0.89	1.02
e1	1.78	2.04
E	2.10	2.80
E1	1.20	1.60
L		0.15
X		0.80
X1		0.95
Y		1.10
Y1		0.90
Y2		2.90

