



Micro Commercial Components

Micro Commercial Components  
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# MMBTA43

## Features

- Surface Mount SOT-23 Package
- Capable of 300mWatts of Power Dissipation
- Marking: M1E ,ABX

## NPN Silicon High Voltage Transistor

### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ( $I_C=1.0mA$ , $I_B=0$ )	200		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=100\mu A$ , $I_E=0$ )	200		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=100\mu A$ , $I_C=0$ )	6.0		Vdc
$I_{CBO}$	Collector Cutoff Current ( $V_{CB}=160Vdc$ , $I_E=0$ )		0.1	$\mu A$
$I_{EBO}$	Emitter Cutoff Current ( $V_{EB}=4.0Vdc$ , $I_C=0$ )		0.1	$\mu A$

### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain* ( $I_C=1.0mA$ , $V_{CE}=10Vdc$ ) ( $I_C=10mA$ , $V_{CE}=10Vdc$ ) ( $I_C=30mA$ , $V_{CE}=10Vdc$ )	25 40 40	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=20mA$ , $I_B=2.0mA$ )		0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=20mA$ , $I_B=2.0mA$ )		0.9	Vdc

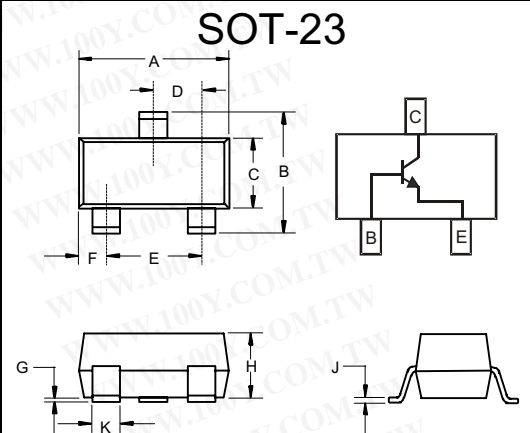
### SMALL-SIGNAL CHARACTERISTICS

$f_T$	Current Gain-Bandwidth Product ( $I_C=10mA$ , $V_{CE}=20Vdc$ , $f=100MHz$ )	50		MHz
$C_{cb}$	Collector-Emitter Capacitance ( $V_{CB}=20Vdc$ , $I_E=0$ , $f=1.0MHz$ )		4.0	pF

### THERMAL CHARACTERISTICS

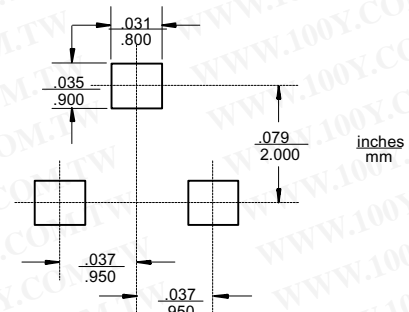
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, <sup>(1)</sup> $T_A = 25^\circ C$ Derate above $25^\circ C$	$P_D$	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ C/W$
Total Device Dissipation Alumina Substrate, <sup>(2)</sup> $T_A = 25^\circ C$ Derate above $25^\circ C$	$P_D$	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ C/W$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ C$

\*Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Suggested Solder Pad Layout



# MMBTA43

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
 Http://www.100y.com.tw

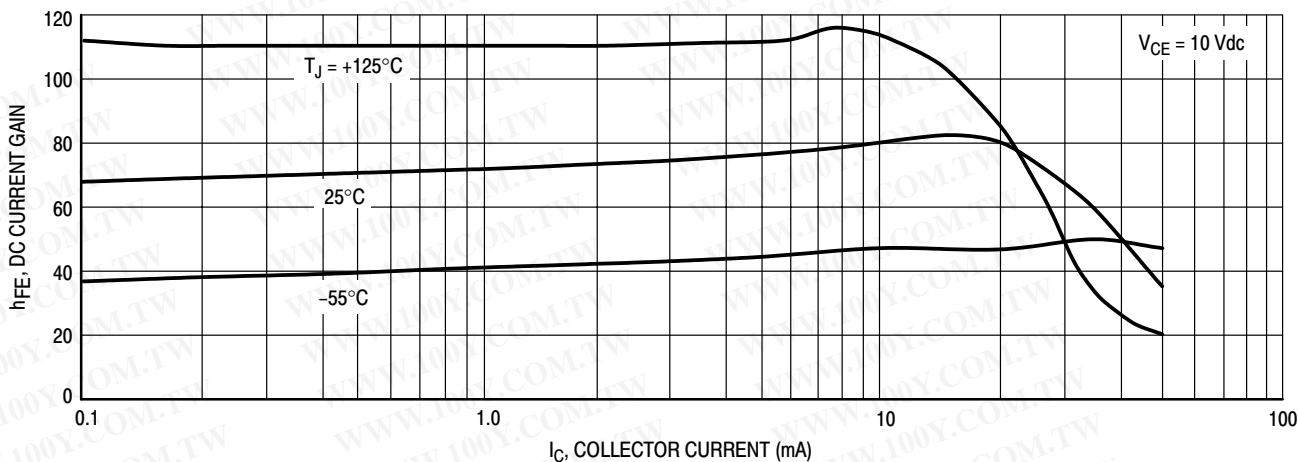


Figure 1. DC Current Gain

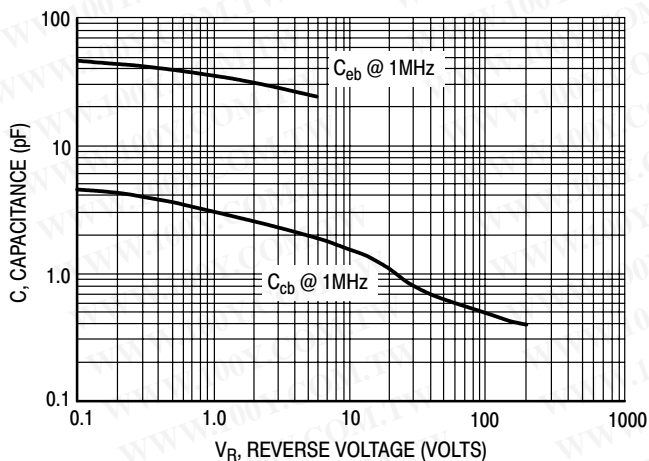


Figure 2. Capacitance

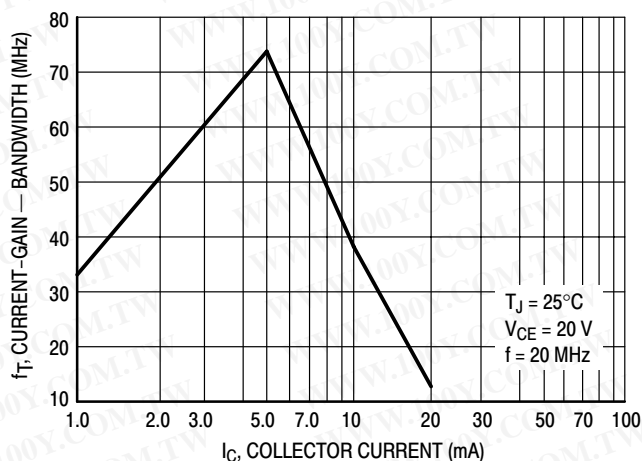


Figure 3. Current-Gain - Bandwidth

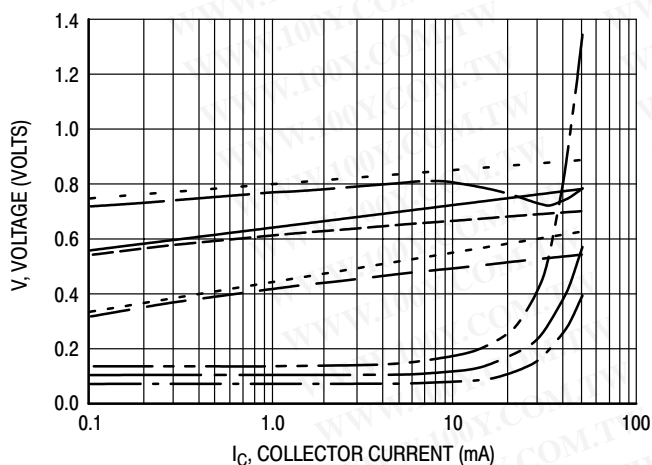


Figure 4. "ON" Voltages

- VCE(sat) @ 25°C, IC/IB = 10
- - - VCE(sat) @ 125°C, IC/IB = 10
- VCE(sat) @ -55°C, IC/IB = 10
- VBE(sat) @ 25°C, IC/IB = 10
- - - VBE(sat) @ 125°C, IC/IB = 10
- - - VBE(sat) @ -55°C, IC/IB = 10
- VBE(on) @ 25°C, VCE = 10 V
- - - VBE(on) @ 125°C, VCE = 10 V
- VBE(on) @ -55°C, VCE = 10 V

## Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;3Kpcs/Reel

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