



Micro Commercial Components

Micro Commercial Components  
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# MMBTA92

## Features

- Surface Mount SOT-23 Package
- Capable of 300mWatts of Power Dissipation
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: 2D

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

Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ( $I_C = -1.0\text{mA}$ , $I_B = 0$ )	-300		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C = -100\mu\text{A}$ , $I_E = 0$ )	-300		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E = -100\mu\text{A}$ , $I_C = 0$ )	-5		Vdc
$I_C$	Collector Current-Continuous	-300		mA
$I_{CBO}$	Collector Cutoff Current ( $V_{CB} = -200\text{Vdc}$ , $I_E = 0$ )		-250	nA
$I_{EBO}$	Emitter Cutoff Current ( $V_{EB} = -5\text{Vdc}$ , $I_C = 0$ )		-100	nA

### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain* ( $I_C = -1.0\text{mA}$ , $V_{CE} = -10\text{Vdc}$ ) ( $I_C = -10\text{mA}$ , $V_{CE} = -10\text{Vdc}$ ) ( $I_C = -30\text{mA}$ , $V_{CE} = -10\text{Vdc}$ )	60 100 60	200	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C = -20\text{mA}$ , $I_B = -2.0\text{mA}$ )		-0.2	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C = -20\text{mA}$ , $I_B = -2.0\text{mA}$ )		-0.9	Vdc

### SMALL-SIGNAL CHARACTERISTICS

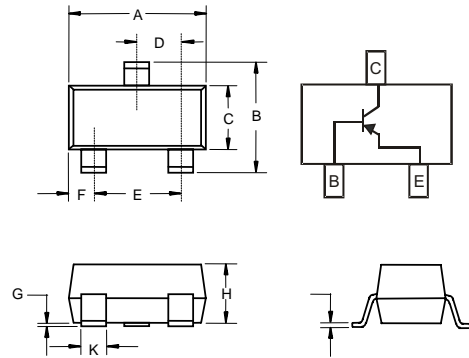
$f_T$	Current Gain-Bandwidth Product ( $I_C = -10\text{mA}$ , $V_{CE} = -20\text{Vdc}$ , $f = 30\text{MHz}$ )	50		MHz
$C_{cb}$	Collector-Base Capacitance ( $V_{CB} = -20\text{Vdc}$ , $I_E = 0$ , $f = 1.0\text{MHz}$ )		6.0	pF

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	225	mW
		1.8	$\text{mW}/^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	300	mW
		2.4	$\text{mW}/^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

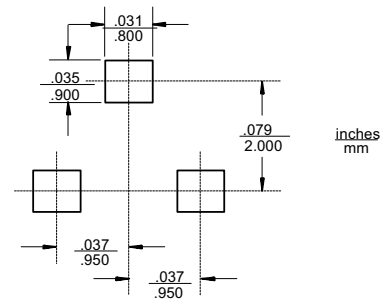
## PNP Silicon High Voltage Transistor

### SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	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



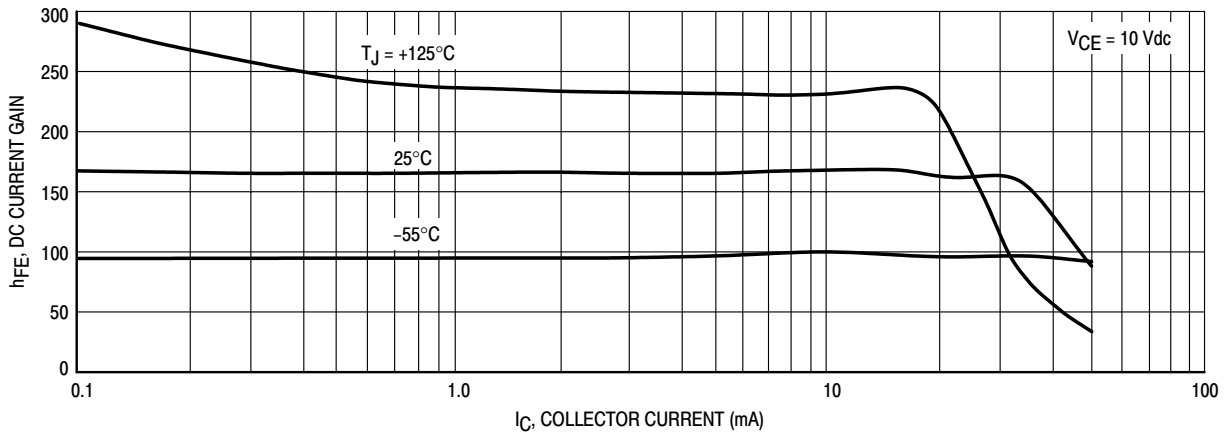


Figure 1. DC Current Gain

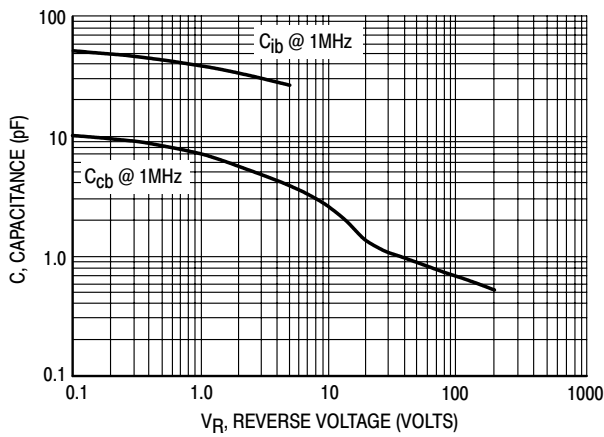


Figure 2. Capacitance

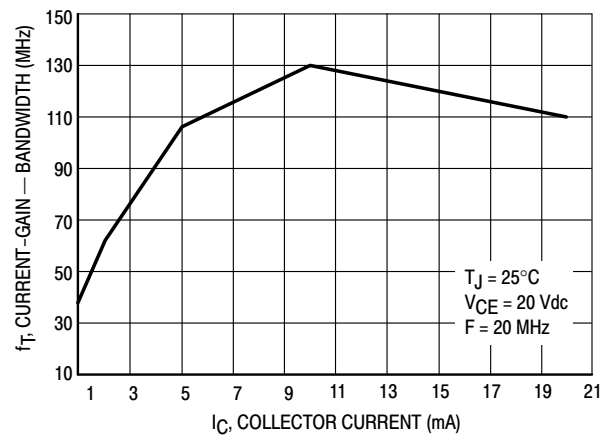


Figure 3. Current-Gain - Bandwidth

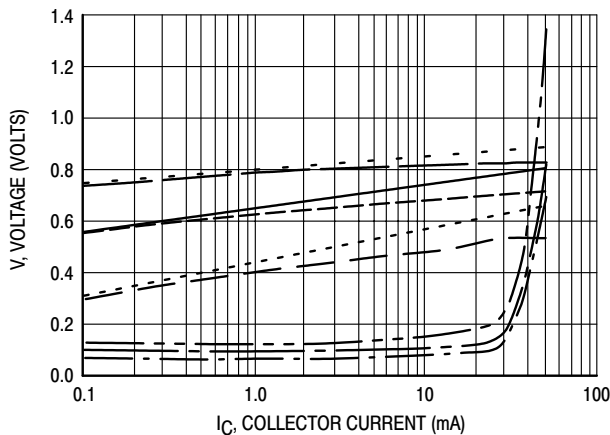


Figure 4. "ON" Voltages

- $V_{CE(sat)}$  @  $25^\circ\text{C}$ ,  $I_C/I_B = 10$
- $V_{CE(sat)}$  @  $125^\circ\text{C}$ ,  $I_C/I_B = 10$
- $V_{CE(sat)}$  @  $-55^\circ\text{C}$ ,  $I_C/I_B = 10$
- $V_{BE(sat)}$  @  $25^\circ\text{C}$ ,  $I_C/I_B = 10$
- $V_{BE(sat)}$  @  $125^\circ\text{C}$ ,  $I_C/I_B = 10$
- $V_{BE(sat)}$  @  $-55^\circ\text{C}$ ,  $I_C/I_B = 10$
- $V_{BE(on)}$  @  $25^\circ\text{C}$ ,  $V_{CE} = 10 \text{ V}$
- $V_{BE(on)}$  @  $125^\circ\text{C}$ ,  $V_{CE} = 10 \text{ V}$
- $V_{BE(on)}$  @  $-55^\circ\text{C}$ ,  $V_{CE} = 10 \text{ V}$



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### Ordering Information :

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

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