



Micro Commercial Components



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MMBTA92

PNP Silicon High Voltage Transistor

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
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	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 ($V_{CB} = -20\text{Vdc}$, $I_E = 0$)		-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

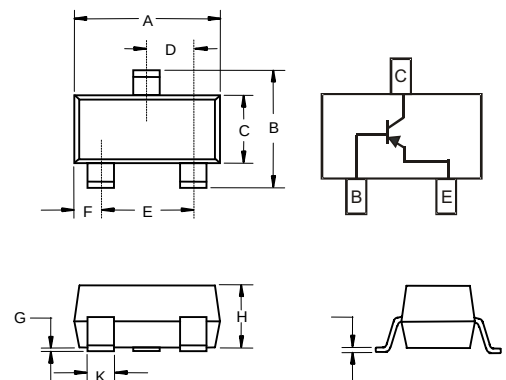
SMALL-SIGNAL CHARACTERISTICS

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

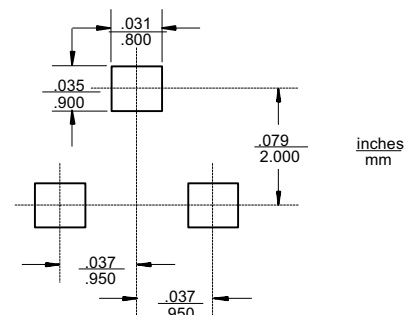
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, ⁽¹⁾ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate, ⁽²⁾ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300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

SOT-23



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



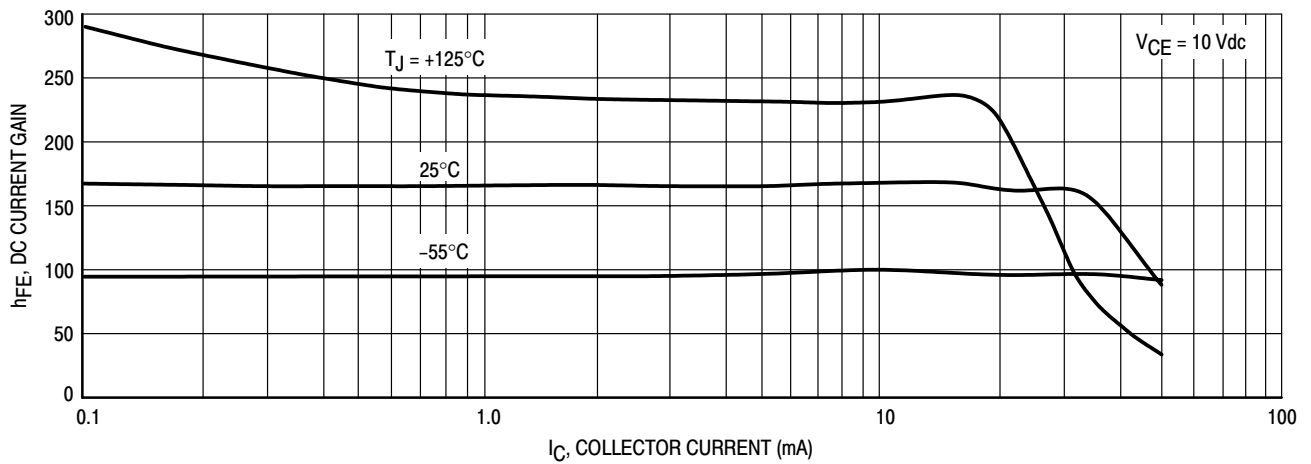


Figure 1. DC Current Gain

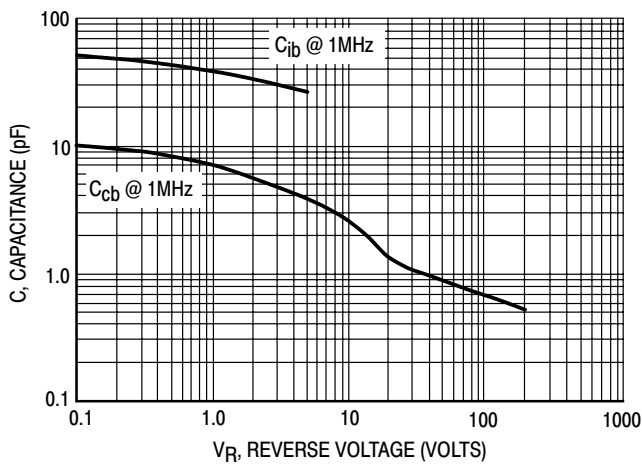


Figure 2. Capacitance

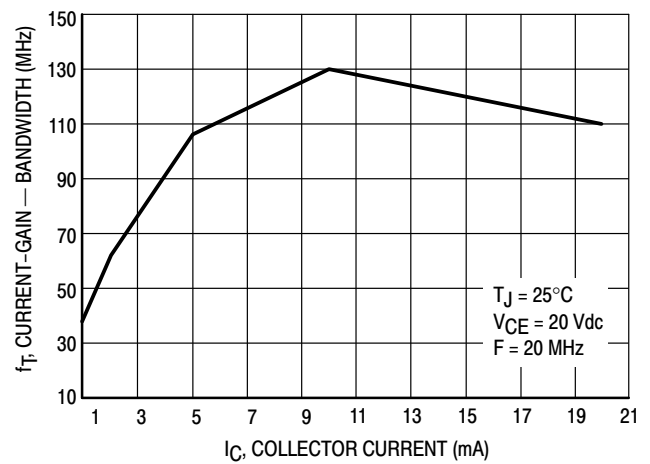


Figure 3. Current-Gain - Bandwidth

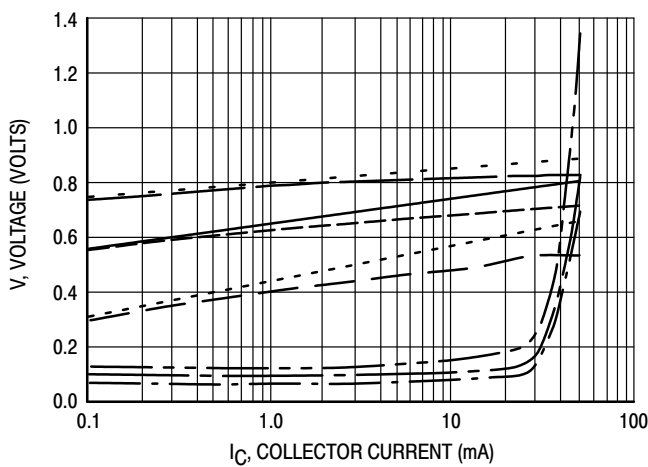


Figure 4. "ON" Voltages

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

Ordering Information :

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

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