



Micro Commercial Components



Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311

Phone: (818) 701-4933

Fax: (818) 701-4939

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
- Halogen free available upon request by adding suffix "-HF"

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
--------	-----------	-----	-----	-------

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_{CM}	Collector Current-Pulsed	-500		mA
I_{CBO}	Collector Cutoff Current ($V_{CB} = -200\text{V}$, $I_E = 0$)		-250	nA
I_{EBO}	Emitter Cutoff Current ($V_{EB} = -5\text{V}$, $I_C = 0$)		-100	nA

ON CHARACTERISTICS

h_{FE}	DC Current Gain* ($I_C = -1.0\text{mA}$, $V_{CE} = -10\text{V}$) ($I_C = -10\text{mA}$, $V_{CE} = -10\text{V}$) ($I_C = -30\text{mA}$, $V_{CE} = -10\text{V}$)	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

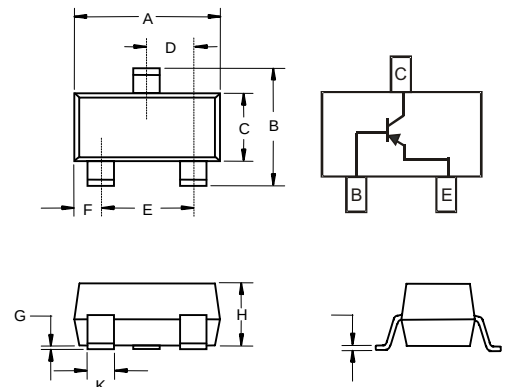
SMALL-SIGNAL CHARACTERISTICS

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

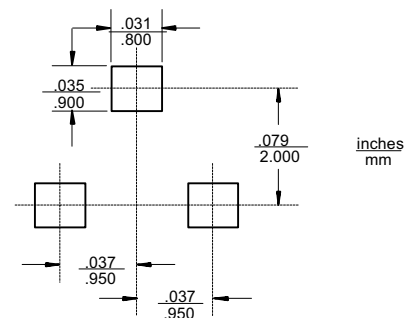
SOT-23



DIMENSIONS

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



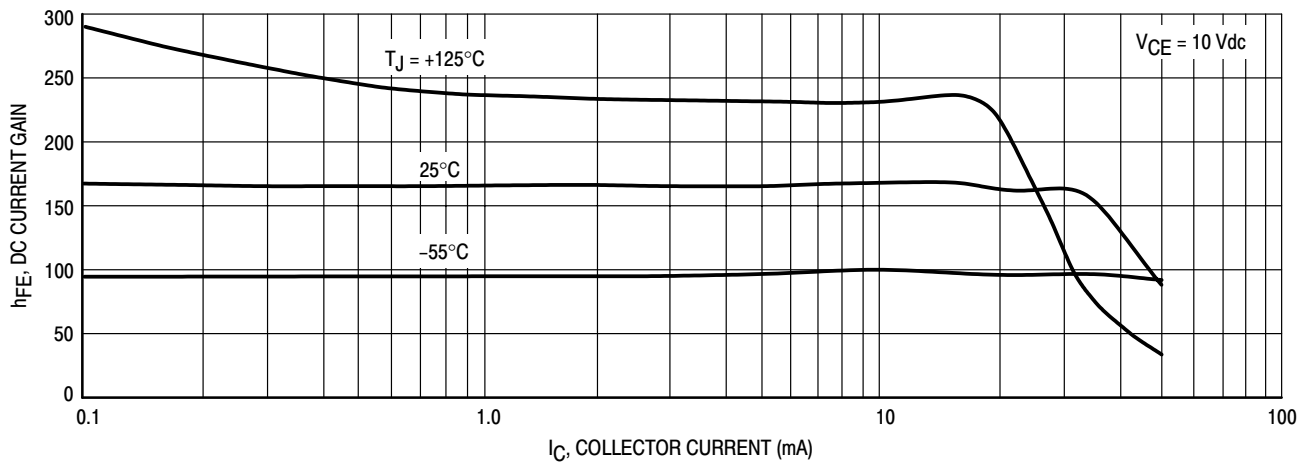


Figure 1. DC Current Gain

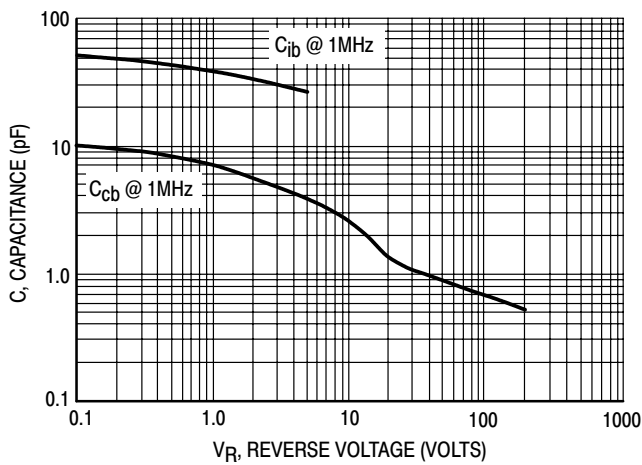


Figure 2. Capacitance

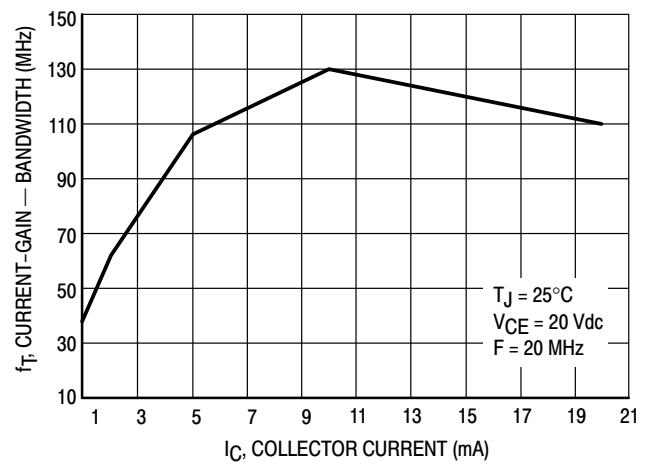


Figure 3. Current-Gain – Bandwidth

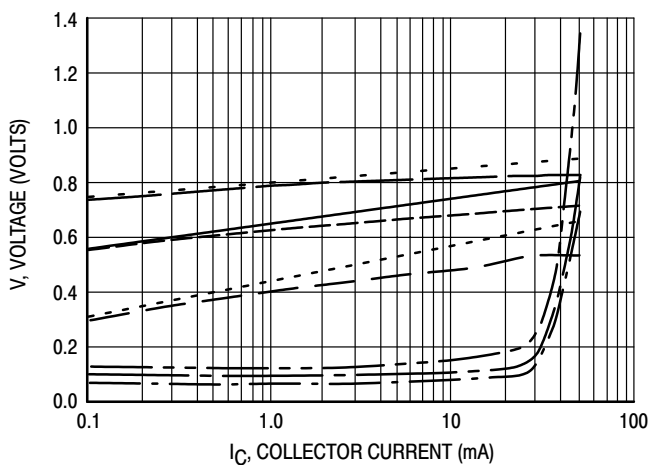


Figure 4. "ON" Voltages

——— $V_{CE(sat)}$ @ 25°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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

CUSTOMER AWARENESS

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.