



Micro Commercial Components

Micro Commercial Components
 20736 Marilla Street Chatsworth
 CA 91311
 Phone: (818) 701-4933
 Fax: (818) 701-4939

MMBTA42

Features

- Surface Mount SOT-23 Package
- Capable of 300mWatts of Power Dissipation
- Continuous Collector Current : 300mA
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Marking:1D

NPN Silicon High Voltage Transistor

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ($I_C=1.0mA$, $I_B=0$)	300		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=100\mu A$, $I_E=0$)	300		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=100\mu A$, $I_C=0$)	6.0		Vdc
I_{CBO}	Collector Cutoff Current ($V_{CB}=200Vdc$, $I_E=0$)		0.1	μA
I_{EBO}	Emitter Cutoff Current ($V_{EB}=6.0Vdc$, $I_C=0$)		0.1	μA

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

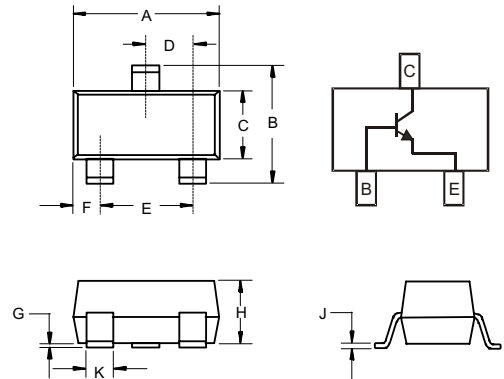
f_T	Current Gain-Bandwidth Product ($I_C=10mA$, $V_{CE}=20Vdc$, $f=100MHz$)	50		MHz
C_{cb}	Collector-Emitter Capacitance ($V_{CB}=20Vdc$, $I_E=0$, $f=1.0MHz$)		3.0	pF

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, ⁽¹⁾ $T_A = 25^\circ C$ Derate above 25°C	P_D	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ C/W$
Total Device Dissipation Alumina Substrate, ⁽²⁾ $T_A = 25^\circ C$ Derate above 25°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	$^\circ C$

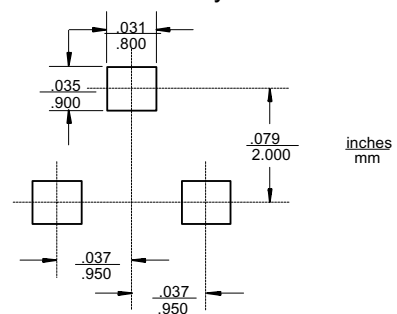
*Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$

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



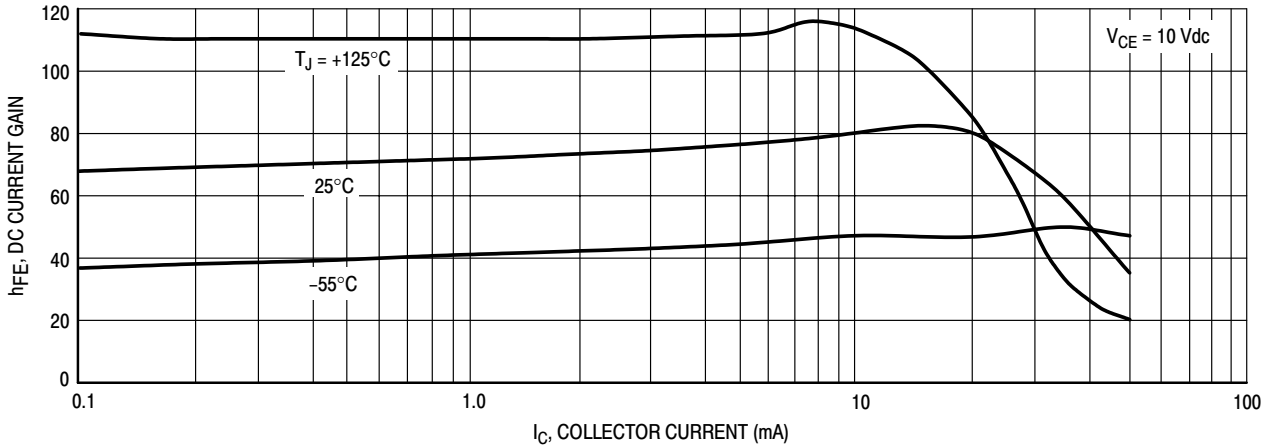


Figure 1. DC Current Gain

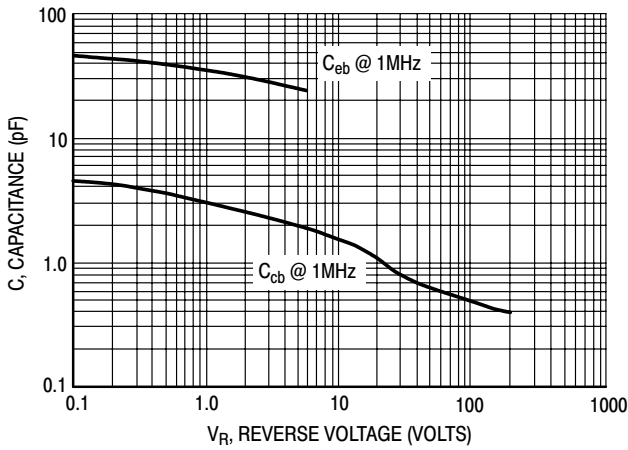


Figure 2. Capacitance

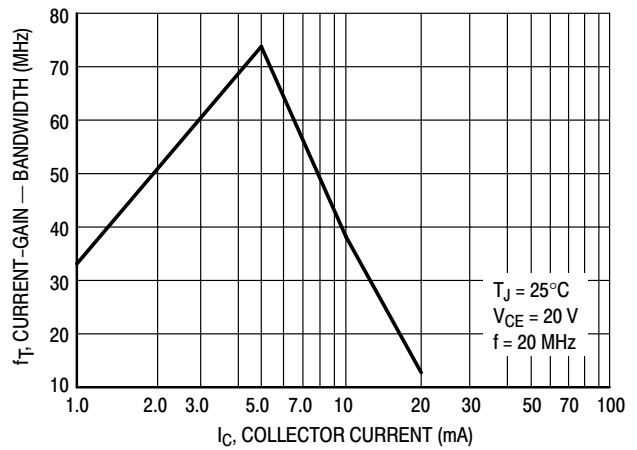


Figure 3. Current-Gain - Bandwidth

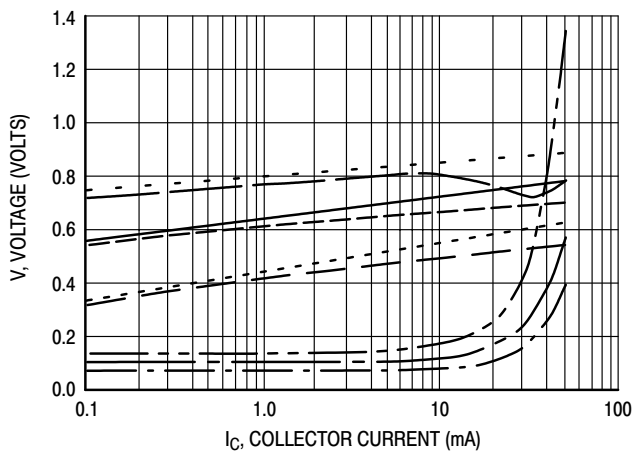


Figure 4. "ON" Voltages



Micro Commercial Components

Ordering Information

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

*****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.

*****APPLICATIONS DISCLAIMER*****

Products offer by *Micro Commercial Components Corp.* are not intended for use in Medical, Aerospace or Military Applications.