Micro Commercial Components
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MMBTA42

NPN Silicon High Voltage Transistor

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Capable of 300mWatts of Power Dissipation
- Continuous Collector Current : 300mA
- Marking:1D

Electrical Characteristics @ 25ºC Unless Otherwise Specified

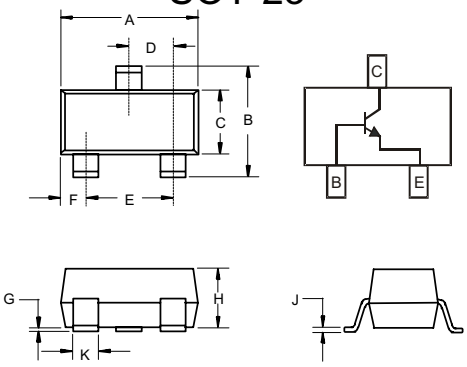
Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* (I_C=1.0mAdc, I_B=0)	300		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=100μAdc, I_E=0)	300		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_E=100μAdc, I_C=0)	6.0		Vdc
I_{CBO}	Collector Cutoff Current (V_{CB}=200Vdc, I_E=0)		0.1	uAdc
I_{EBO}	Emitter Cutoff Current (V_{EB}=6.0Vdc, I_C=0)		0.1	uAdc
ON CHARACTERISTICS				
h_{FE}	DC Current Gain* (I_C=1.0mAdc, V_{CE}=10Vdc) (I_C=10mAdc, V_{CE}=10Vdc) (I_C=30mAdc, V_{CE}=10Vdc)	25 40 40	----	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=20mAdc, I_B=2.0mAdc)		0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C=20mAdc, I_B=2.0mAdc)		0.9	Vdc
SMALL-SIGNAL CHARACTERISTICS				
f_T	Current Gain-Bandwidth Product (I_C=10mAdc, V_{CE}=20Vdc, f=100MHz)	50		MHz
C_{cb}	Collector-Emitter Capacitance (V_{CB}=20Vdec, 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°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate,(2) T_A = 25°C Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J, T_{stg}	–55 to +150	°C

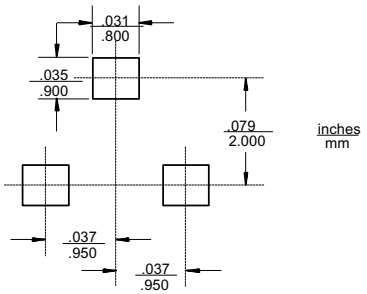
*Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%

SOT-23



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
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



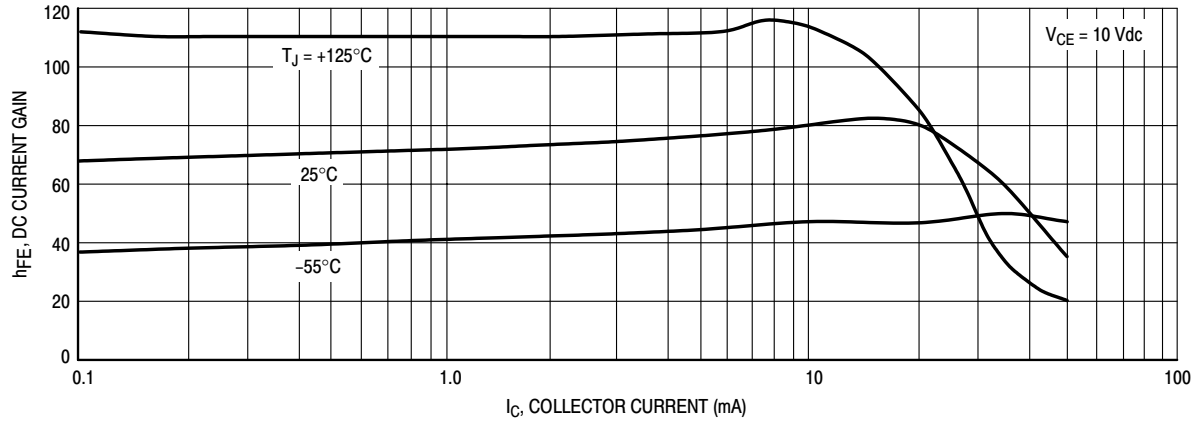


Figure 1. DC Current Gain

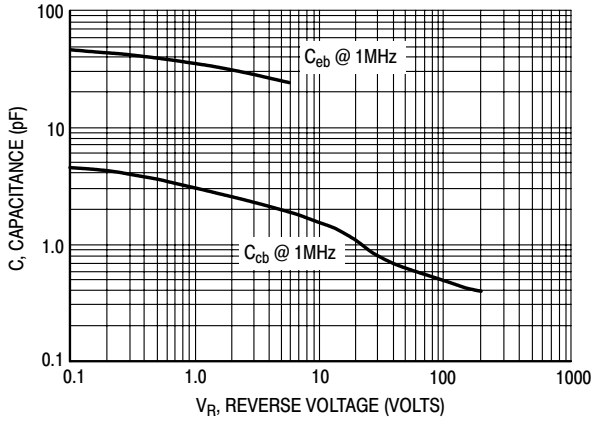


Figure 2. Capacitance

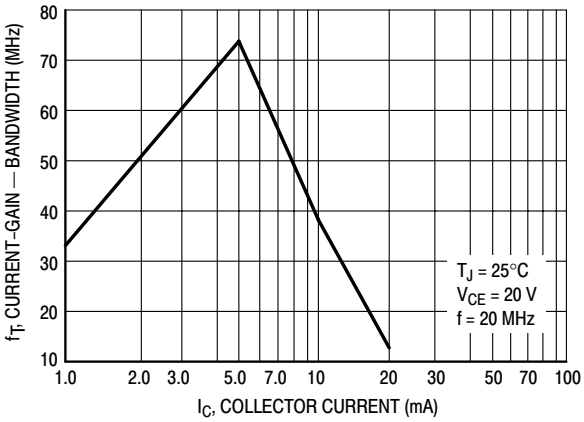
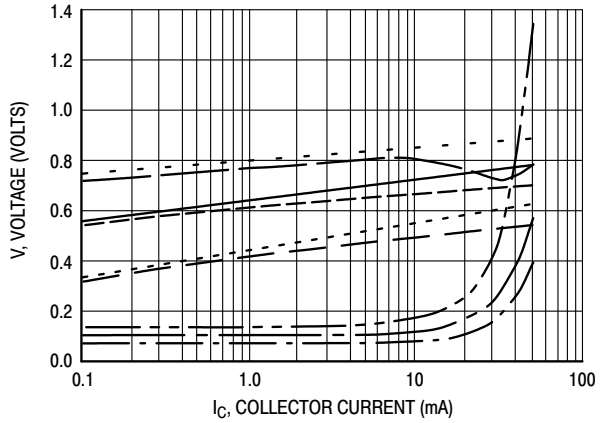


Figure 3. Current–Gain – Bandwidth



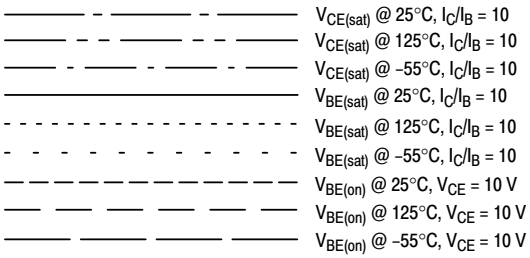


Figure 4. "ON" Voltages

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Ordering Information :

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

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