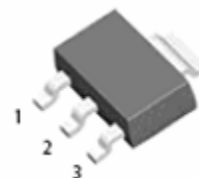
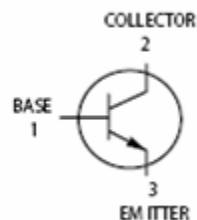


SMD General Purpose Transistor (NPN)

Features

- NPN Silicon Epitaxial Planar Transistor for Switching and Amplifier Applications
- RoHS compliance



SOT-223



Mechanical Data

Case:	SOT-223, Plastic Case
Terminals:	Solderable per MIL-STD-202G, Method 208
Weight:	Approx. 0.04 gram

Maximum Ratings ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	PZT3904	Unit	Conditions
V_{CEO}	Collector-Emitter Voltage	40	V	
V_{CBO}	Collector-Base Voltage	60	V	
V_{EB0}	Emitter-Base Voltage	6.0	V	
I_C	Collector Current	200	mA	
P_D	Total Device Power Dissipation	1.5	W	T _A =25 °C
T_J	Junction Temperature	150	°C	
T_{STG}	Storage Temperature Range	-55 to +150	°C	

SMD General Purpose Transistor (NPN)

PZT3904

Electrical Characteristics ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Off Characteristics

Symbol	Description	Min.	Max.	Unit	Conditions
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (Pulse width $\leq 380\mu s$, Duty Cycle $\leq 2.0\%$)	40	-	V	$I_C=1mA$, $I_B=0$
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	60	-	V	$I_C=10\mu A$, $I_E=0$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	6.0	-	V	$I_E=10\mu A$, $I_C=0$
I_{CEX}	Collector-Emitter Cutoff Current	-	50	nA	$V_{BE}=3V$, $V_{CE}=30V$

On Characteristics

Symbol	Description	Min.	Max.	Unit	Conditions
h_{FE}	D.C. Current Gain	40	-		$V_{CE}=1V$, $I_C=0.1mA$
		70	-		$V_{CE}=1V$, $I_C=1mA$
		100	300		$V_{CE}=1V$, $I_C=10mA$
		60	-		$V_{CE}=1V$, $I_C=50mA$
		30	-		$V_{CE}=1V$, $I_C=100mA$
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	-	200	mV	$I_C=10mA$, $I_B=1mA$
		-	300		$I_C=50mA$, $I_B=5mA$
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	650	850	mV	$I_C=10mA$, $I_B=1mA$
		-	950		$I_C=50mA$, $I_B=5mA$
C_{ob}	Output Capacitance	-	4.0	pF	$V_{CB}=5V$, $I_E=0$, $f=1.0MHz$

Dynamic Characteristics

Symbol	Description	Min.	Max.	Unit	Conditions
f_T	Transition Frequency	300	-	MHz	$V_{CE}=20V$, $I_C=10mA$, $f=100MHz$

SMD General Purpose Transistor (NPN)

PZT3904

Typical Characteristics Curves

Fig.1- DC Current Gain

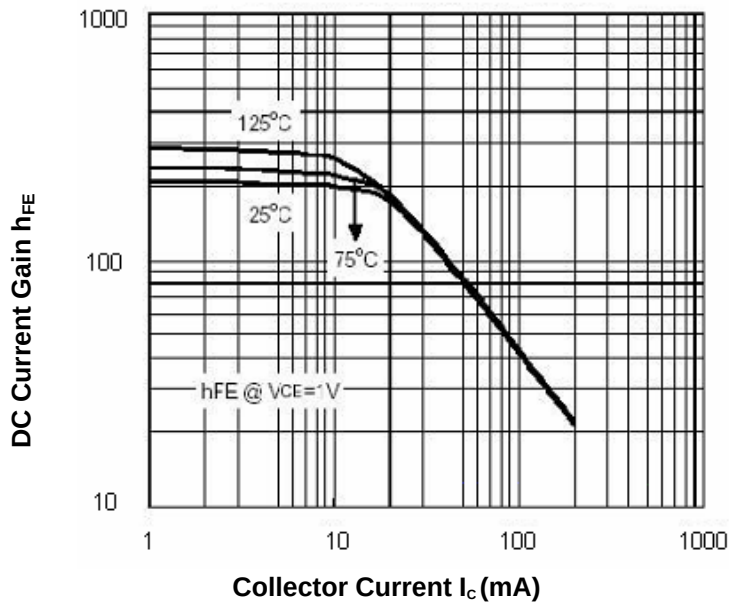


Fig.2- Collector-Emitter Saturation Voltage

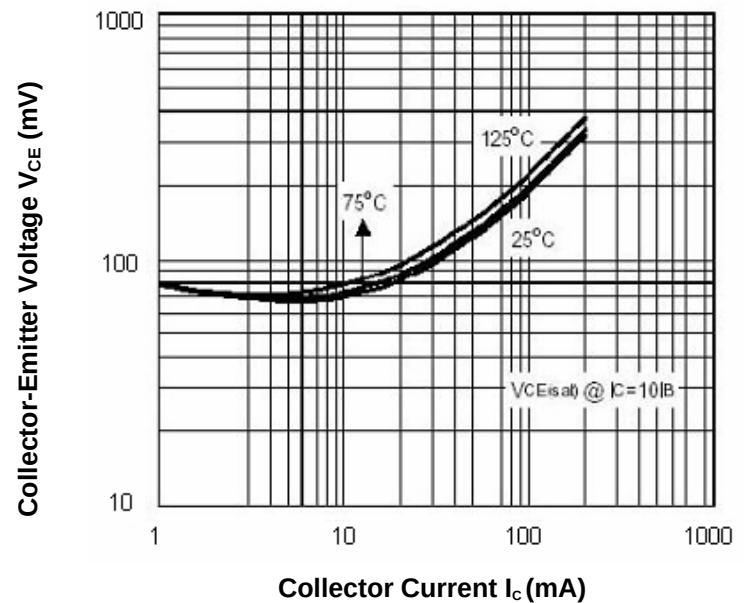


Fig.3- Base-Emitter Saturation Voltage

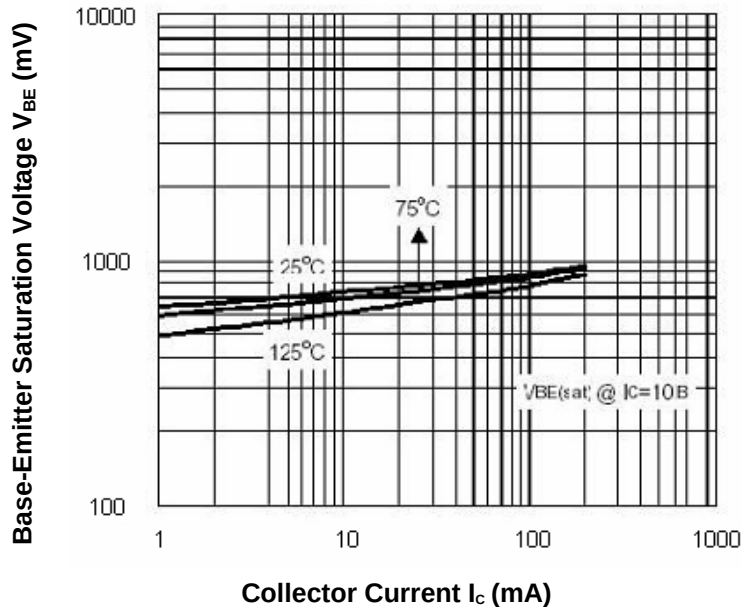
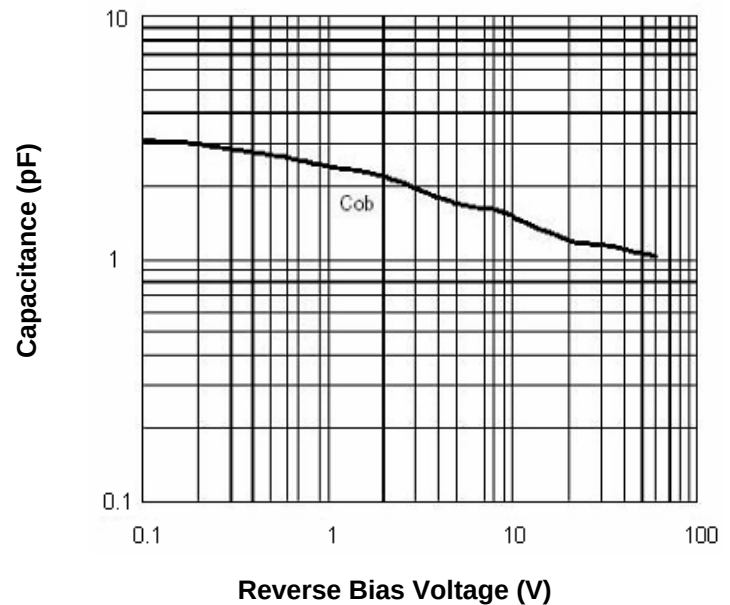


Fig.4- Capacitance



SMD General Purpose Transistor (NPN)

PZT3904

Fig.5- Cutoff Frequency

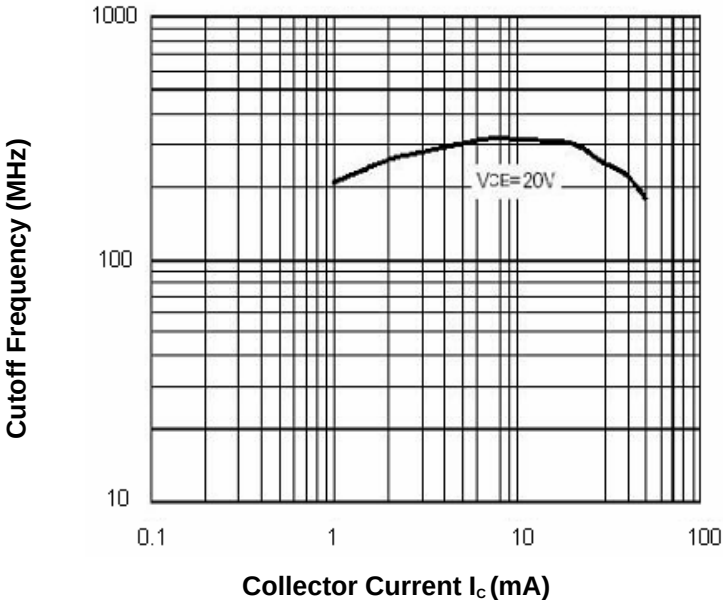
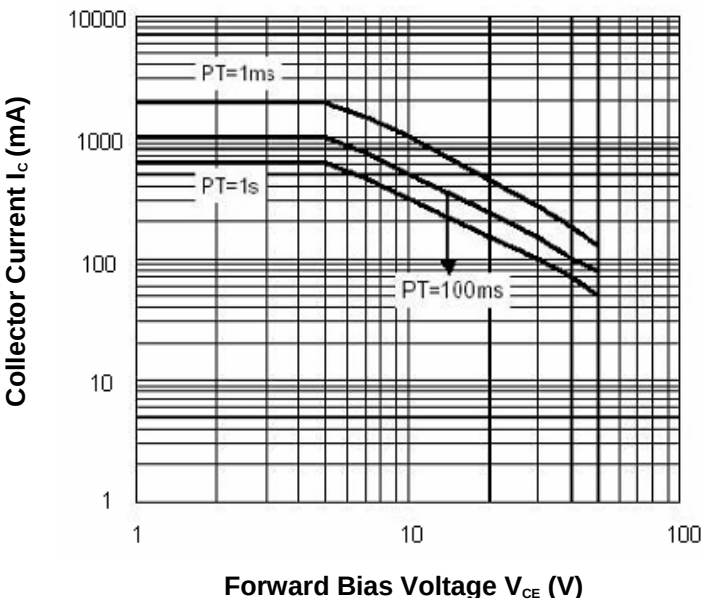


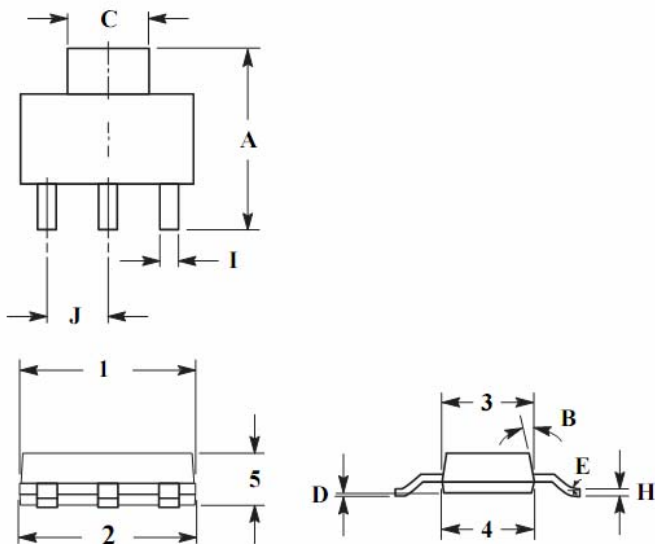
Fig.6- Safe Operating Area



Device Marking: PZT3904=3904

Dimensions in mm

SOT-223



DIM	MIN	MAX
A	6.70	7.30
C	2.90	3.10
D	0.02	0.10
E	0°	10°
I	0.60	0.80
H	0.25	0.35
B	13°Typ.	
J	2.30Ref.	
1	6.30	6.70
2	6.30	6.70
3	3.30	3.70
4	3.30	3.70
5	1.40	1.80

SMD General Purpose Transistor (NPN)

PZT3904

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