PZT3906 TRANSISTOR (PNP)

SOT-223

1.BASE
2.COLLECTOR
3.EMITTER

FEATURES

- Low Voltage and Low Current
- Complementary to PZT3904
- General Purpose Amplifier and Switch Application

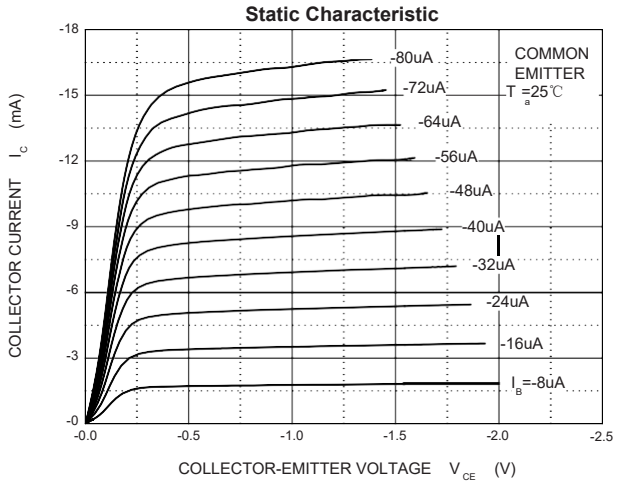
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

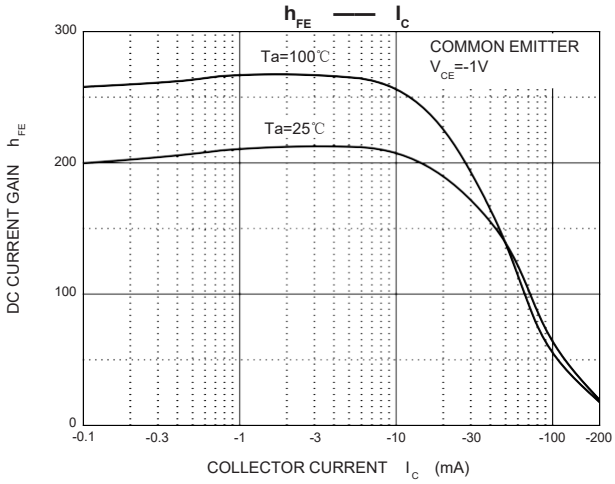
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-200	mA
P_C	Collector Power Dissipation	1	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	125	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

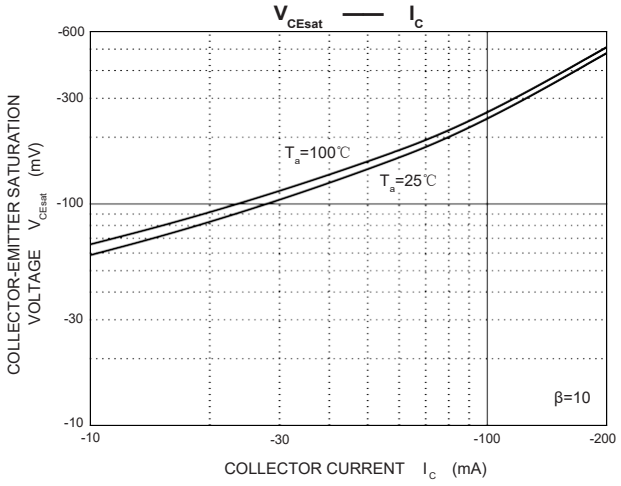
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

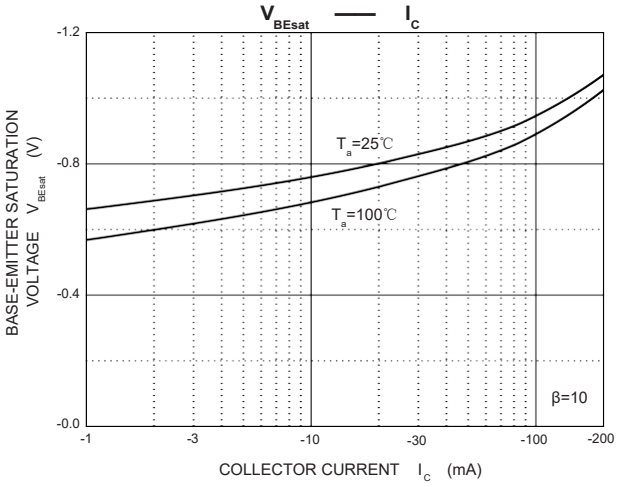
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$*	I_C=-0.01mA,I_E=0	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$*	I_C=-1mA,I_B=0	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$*	I_E=0.01mA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-30V,I_E=0			-50	nA
Collector cut-off current	I_{CEX}	V_{CE}=-30V, $V_{BE(off)}$=-3V			-50	nA
DC current gain	$h_{FE(1)}$*	V_{CE}=-1V, I_C=-0.1mA	60			
	$h_{FE(2)}$	V_{CE}=-1V, I_C=-1mA	80			
	$h_{FE(3)}$	V_{CE}=-1V, I_C=-10mA	100		300	
	$h_{FE(4)}$	V_{CE}=-1V, I_C=-50mA	60			
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=-10mA,I_B=-1mA			-0.25	V
		I_C=-50mA,I_B=-5mA			-0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=-10mA,I_B=-1mA	-0.65		-0.85	V
		I_C=-50mA,I_B=-5mA			-0.95	V
Transition frequency	f_T	V_{CE}=-20V,I_C=-10mA, f=100MHz	250			MHz
Collector output capacitance	C_{ob}	V_{CB}=-5V, I_E=0, f=1MHz			4.5	pF
Emitter input capacitance	C_{ib}	V_{BE}=-0.5V, I_C=0, f=1MHz			10	pF
Delay time	t_d	V_{CC}=-3V, $V_{BE(off)}$=-0.5V I_C=-10mA,			35	ns
Rise time	t_r	I_{B1}= -I_{B2}=-1mA			35	
Storage time	t_s	V_{CC}=-3V, I_C=-10mA,			225	ns
Fall time	t_f	I_{B1}=-I_{B2}=-1mA			75	

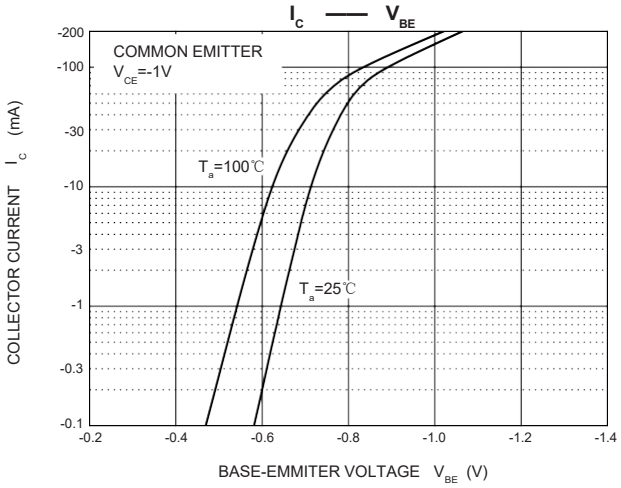
*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.

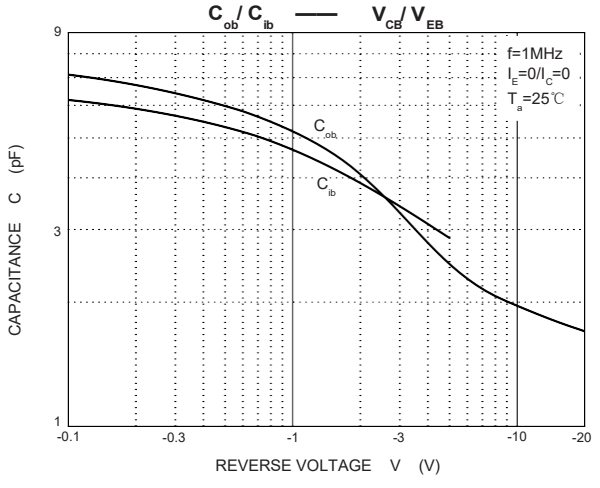

Static Characteristic
COMMON EMITTER
T a=25℃
-80uA
-72uA
-64uA
-56uA
-48uA
-40uA
-32uA
-24uA
-16uA
I B=-8uA
COLLECTOR CURRENT I C (mA)
COLLECTOR-EMITTER VOLTAGE V CE (V)

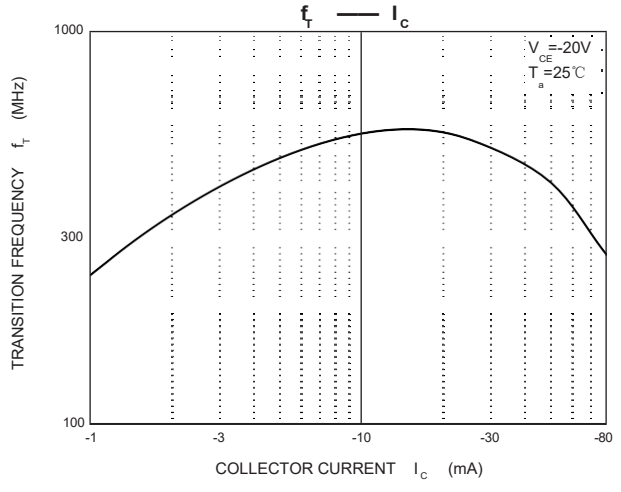

h FE — I C
Ta=100℃
Ta=25℃
COMMON EMITTER
V CE=-1V
DC CURRENT GAIN h FE
COLLECTOR CURRENT I C (mA)

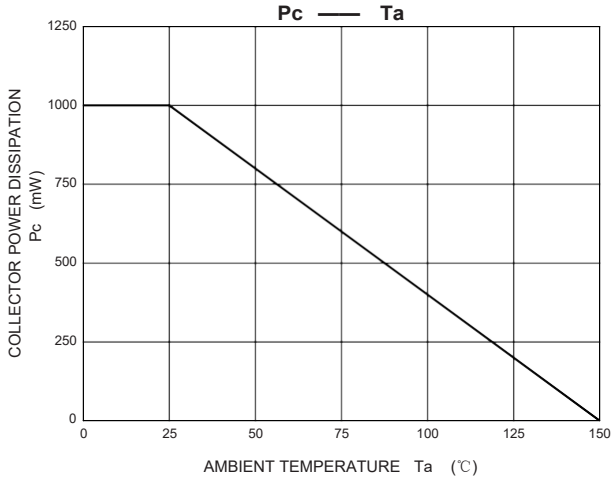

V CEsat — I C
T a=100℃
T a=25℃
β=10
COLLECTOR-EMITTER SATURATION VOLTAGE V CEsat (mV)
COLLECTOR CURRENT I C (mA)


V BEsat — I C
T a=25℃
T a=100℃
β=10
BASE-EMITTER SATURATION VOLTAGE V BEsat (V)
COLLECTOR CURRENT I C (mA)


I C — V BE
COMMON EMITTER
V CE=-1V
T a=100℃
T a=25℃
COLLECTOR CURRENT I C (mA)
BASE-EMMITER VOLTAGE V BE (V)


C ob / C ib — V CB / V EB
f=1MHz
I E=0/I C=0
T a=25℃
C ob
C ib
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


f T — I C
V CE=-20V
T a=25℃
TRANSITION FREQUENCY f T (MHz)
COLLECTOR CURRENT I C (mA)


Pc — Ta
COLLECTOR POWER DISSIPATION Pc (mW)
AMBIENT TEMPERATURE Ta (℃)