BSR33 TRANSISTOR (PNP)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-89

FEATURES

- Low Voltage
- High Current
- Complement to BSR43

AAPLICATIONS

- Medium Power Transistor

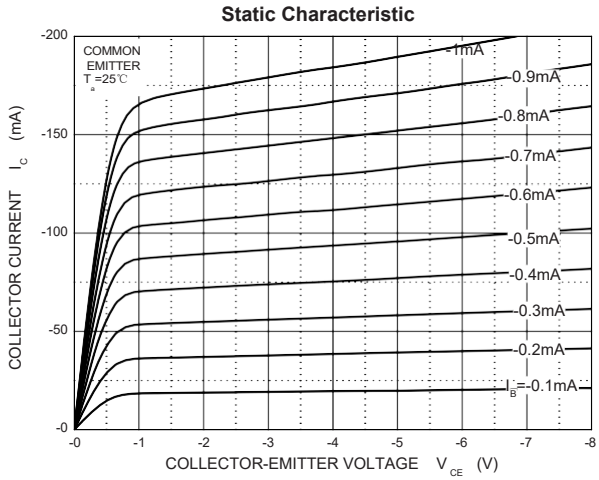
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

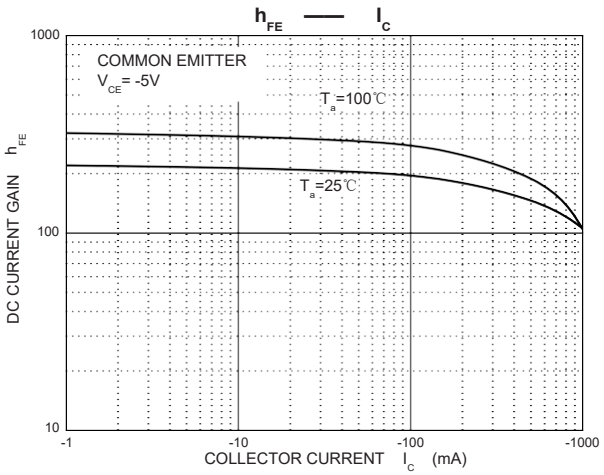
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-90	V
V_{CEO}	Collector-Emitter Voltage	-80	V
V_{EBO}	Emitter-Base Vo ltage	-5	V
I_C	Collector Current	-1	A
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

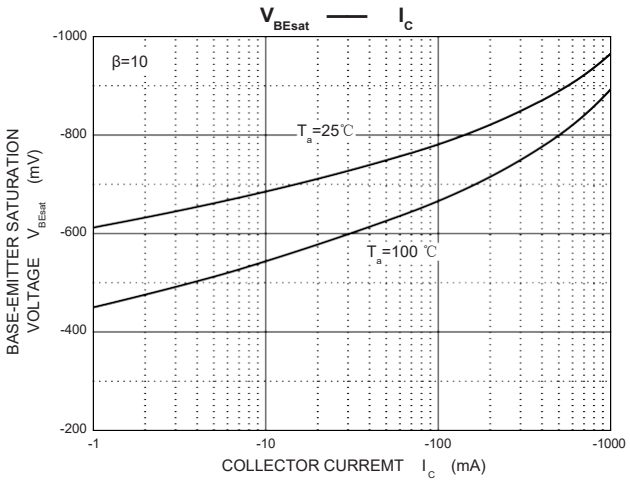
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

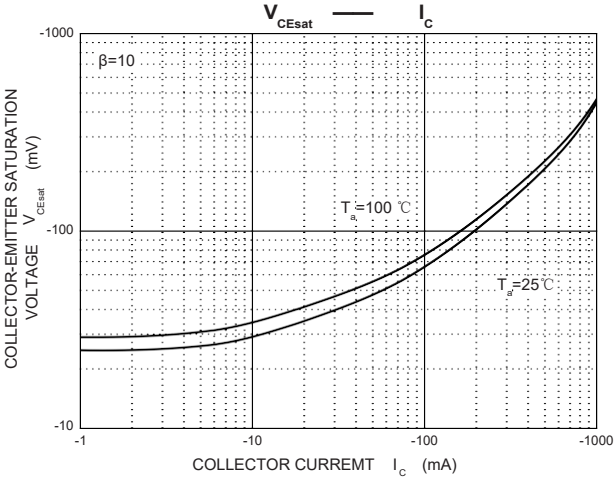
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100μA,I_E=0	-90			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA,I_B=0	-80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-60V,I_E=0			-100	nA
Emitter cut-off current	I_{EBO}	V_{EB}=-5V,I_C=0			-100	nA
DC current gain	$h_{FE(1)}$*	V_{CE}=-5V, I_C=0.1mA	30			
	$h_{FE(2)}$*	V_{CE}=-5V, I_C=-100mA	100		300	
	$h_{FE(3)}$*	V_{CE}=-5V, I_C=-500mA	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=-150mA,I_B=-15mA			-0.25	V
		I_C=-500mA,I_B=-50mA			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=-150mA,I_B=-15mA			-1	V
		I_C=-500mA,I_B=-50mA			-1.2	V
Transition frequency	f_T	V_{CE}=-10V,I_C=-50mA, f=100MHz	100			MHz

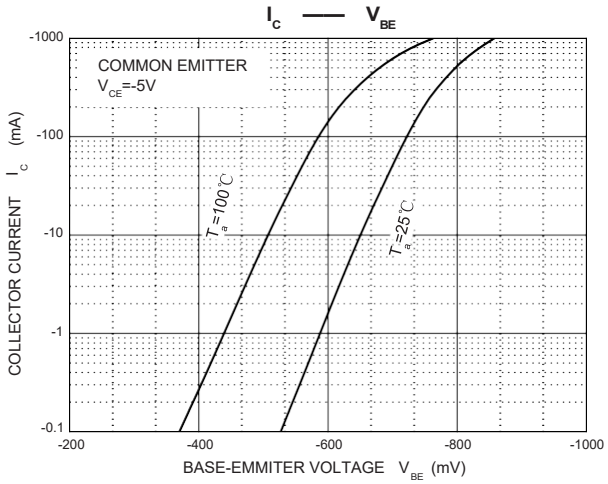
*Pulse test

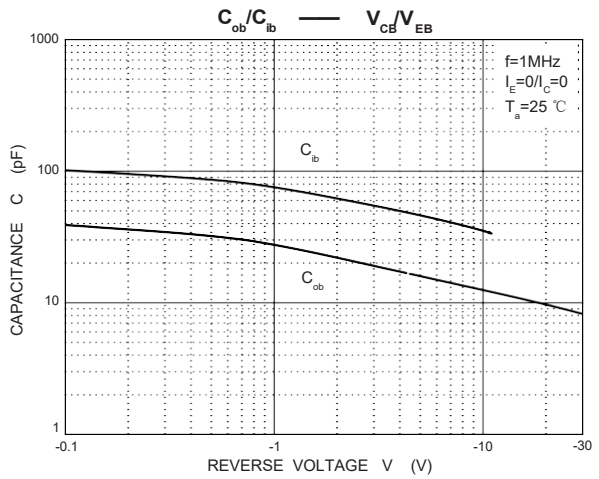

Static Characteristic
COMMON EMITTER
T a =25℃
-1mA
-0.9mA
-0.8mA
-0.7mA
-0.6mA
-0.5mA
-0.4mA
-0.3mA
-0.2mA
I B =-0.1mA
COLLECTOR CURRENT I C (mA)
COLLECTOR-EMITTER VOLTAGE V CE (V)

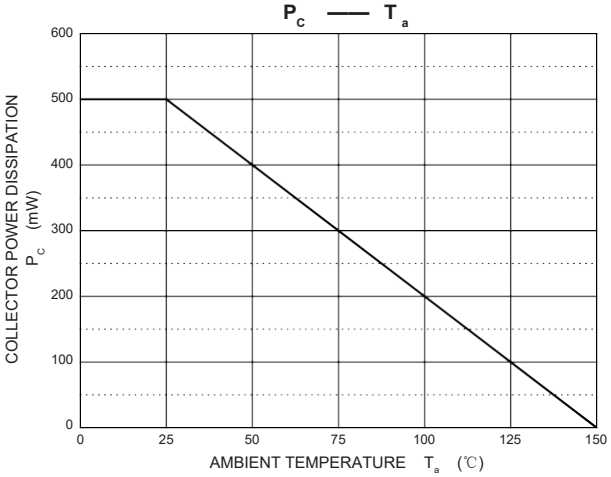

h FE — I C
COMMON EMITTER
V CE = -5V
T a =100℃
T a =25℃
DC CURRENT GAIN h FE
COLLECTOR CURRENT I C (mA)


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


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


I C — V BE
COMMON EMITTER
V CE =-5V
T a =100℃
T a =25℃
COLLECTOR CURRENT I C (mA)
BASE-EMMITER VOLTAGE V BE (mV)


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


P C — T a
COLLECTOR POWER DISSIPATION P C (mW)
AMBIENT TEMPERATURE T a (℃)