2SB1440 TRANSISTOR (PNP)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-89

FEATURES

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- For low-frequency output amplification
- Complementary to 2SD2185

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

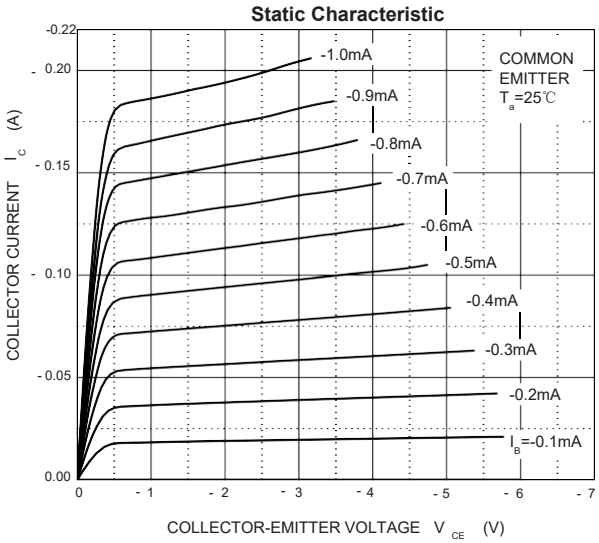
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-2	A
P_C	Collector Power Dissipation	500	mW
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~150	℃

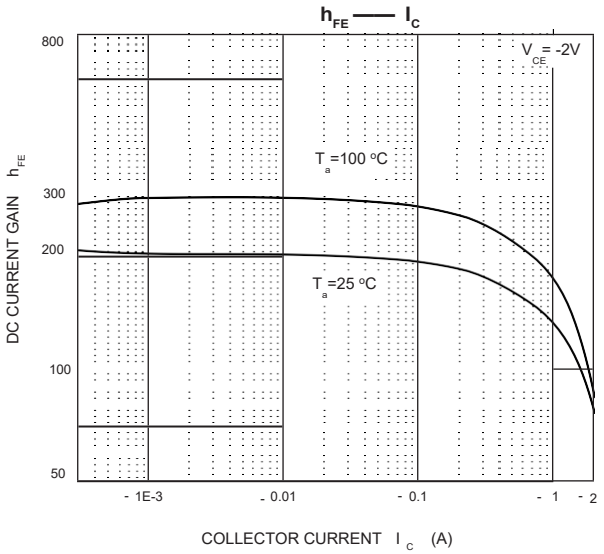
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

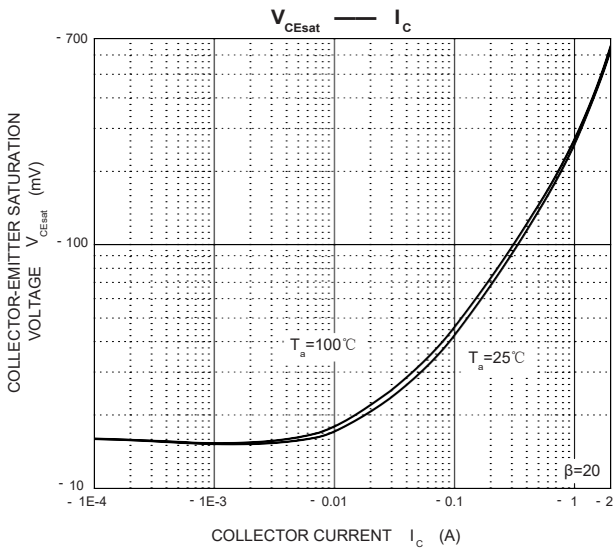
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10μA, I_E=0	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10μA, I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-50V, I_E=0			-1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-5V, I_C=0			-1	μA
DC current gain	h_{FE1}	V_{CE}=-2V, I_C=-200mA	120		340	
	h_{FE2}	V_{CE}=-2V, I_C=-1A	60			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-1A, I_B=-50mA			-0.3	V
Base- emitter saturation voltage	$V_{BE(sat)}$	I_C=-1A, I_B=-50mA			-1..2	V
Transition frequency	f_T	V_{CE}=-10V, I_C=50mA, f=200MHz		80		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz			60	pF

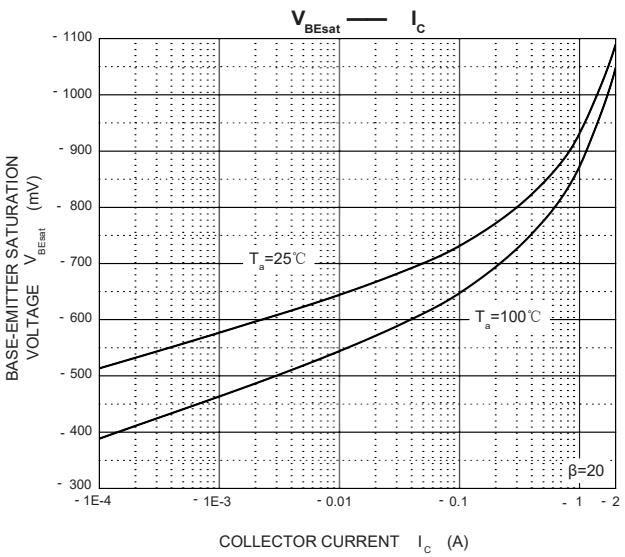
CLASSIFICATION OF h_{FE1}

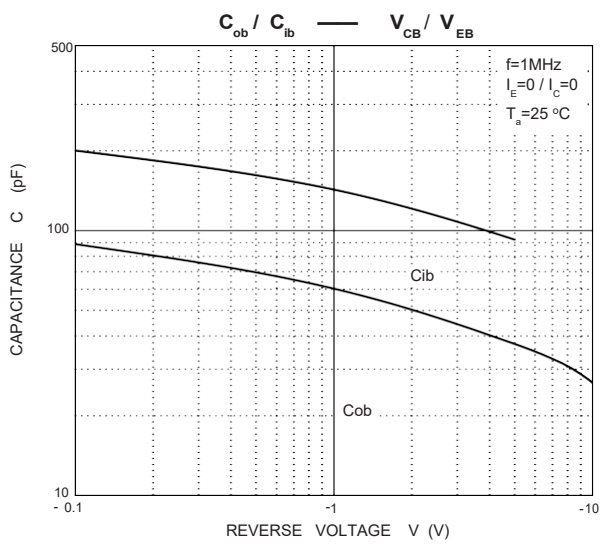
Rank	R	S
Range	120-240	170-340
Marking	1L	

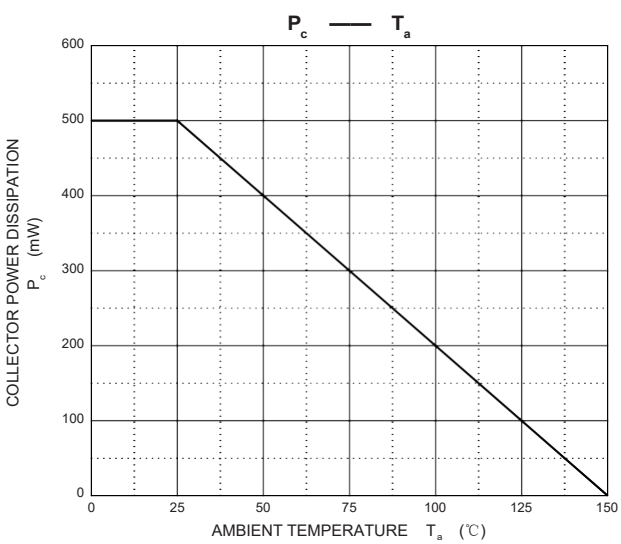

Static Characteristic
COMMON EMITTER
Ta=25℃
-1.0mA
-0.9mA
-0.8mA
-0.7mA
-0.6mA
-0.5mA
-0.4mA
-0.3mA
-0.2mA
IB=-0.1mA
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)


hFE — IC
VCE= -2V
Ta=100 °C
Ta=25 °C
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (A)


VCEsat — IC
Ta=100℃
Ta=25℃
β=20
COLLECTOR-EMITTER SATURATION VOLTAGE VCEsat (mV)
COLLECTOR CURRENT IC (A)


VBEsat — IC
Ta=25℃
Ta=100℃
β=20
BASE-EMITTER SATURATION VOLTAGE VBEsat (mV)
COLLECTOR CURRENT IC (A)


Cob / Cib — VCB / VEB
f=1MHz
IE=0 / IC=0
Ta=25 °C
Cib
Cob
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


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