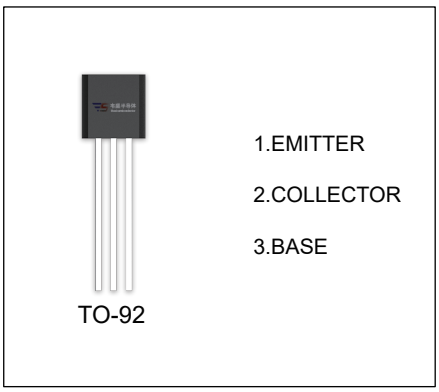
2SB1116 / 2SB1116A TRANSISTOR (PNP)



FEATURES

- **High Collector Power Dissipation .**
- **Complementary to 2SD1616/2SD1616A**

ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
2SB1116	TO-92	Bulk	1000pcs/Bag
2SB1116-TA	TO-92	Tape	2000pcs/Box
2SB1116A	TO-92	Bulk	1000pcs/Bag
2SB1116A-TA	TO-92	Tape	2000pcs/Box

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

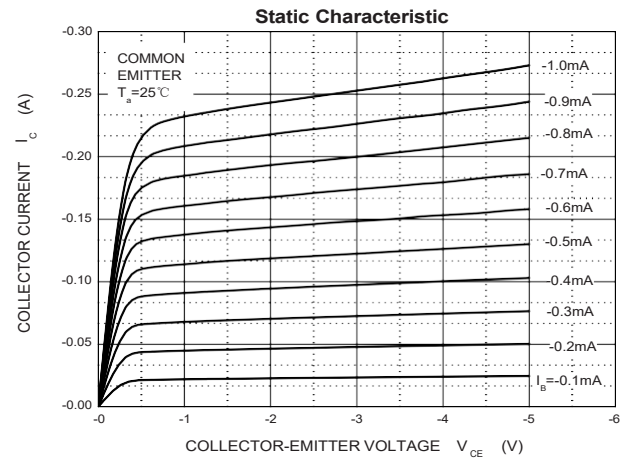
Symbol	Parameter		Value	Unit
V_{CBO}	Collector-Base Voltage	2SB1116 2SB1116A	-60 -80	V
V_{CEO}	Collector-Emitter Voltage	2SB1116 2SB1116A	-50 -60	V
V_{EBO}	Emitter-Base Voltage		-6	V
I_C	Collector Current -Continuous		-1	A
P_C	Collector Power Dissipation		0.75	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range		-55-150	℃

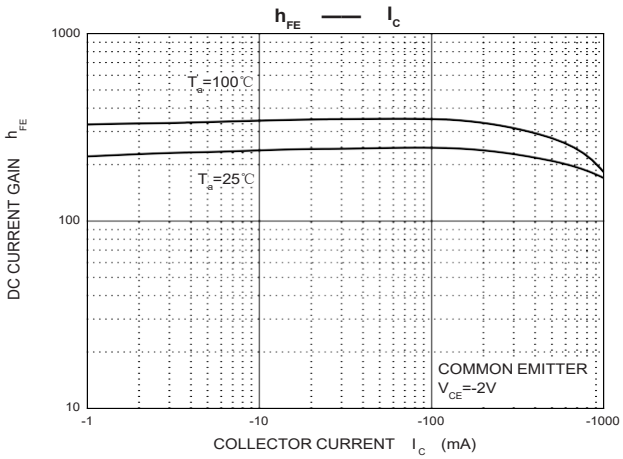
T_a=25℃ unless otherwise specified

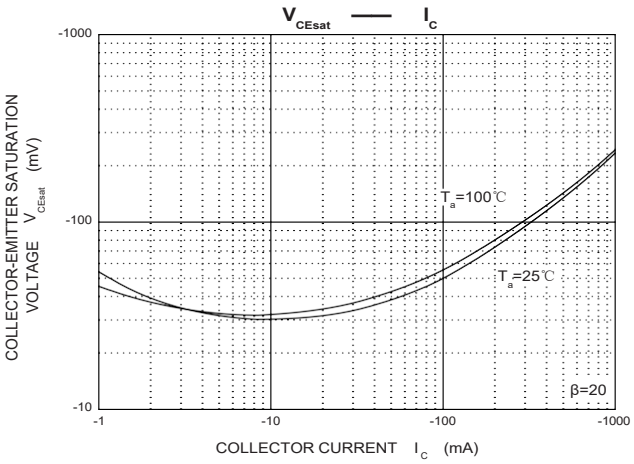
Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100μA,I_E=0	2SB1116 2SB1116A	-60 -80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA,I_B=0	2SB1116 2SB1116A	-50 -60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA,I_C=0		-6			V
Collector cut-off current	I_{CBO}	V_{CB}=-60V,I_E=0	2SB1116			-0.1	μA
		V_{CB}=-60V,I_E=0	2SB1116A				
Emitter cut-off current	I_{EBO}	V_{EB}=-6V,I_C=0				-0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=-2V,I_C=-0.1A		135		600	
	$h_{FE(2)}$	V_{CE}=-2V,I_C=-1A		81			
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
Base -emitter voltage	V_{BE}	V_{CE}=-2V,I_C=-0.05A		-0.6		-0.7	V
Transition frequency	f_T	V_{CE}=-2V,I_C=-0.1A		70			MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f=1MHz			25		pF
Turn-on time	t_{on}	V_{CC}=-10V,I_C=-0.1A,I_{B1}=-I_{B2}=-0.01A, $V_{BE(Off)}$=2to3V			0.07		us
Storage time	t_s				0.7		us
Fall time	t_f				0.07		us

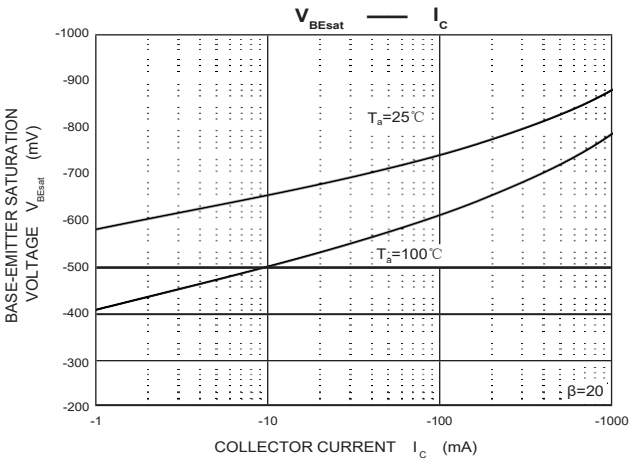
CLASSIFIC ATION OF $h_{FE(1)}$

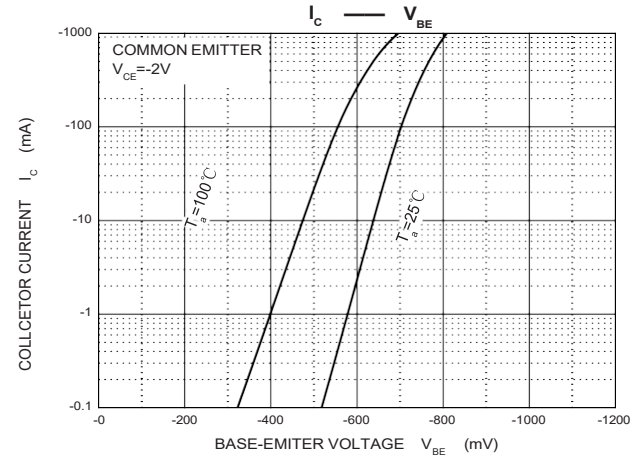
Rank	L	K	U
Range	135-270	200-400	300-600

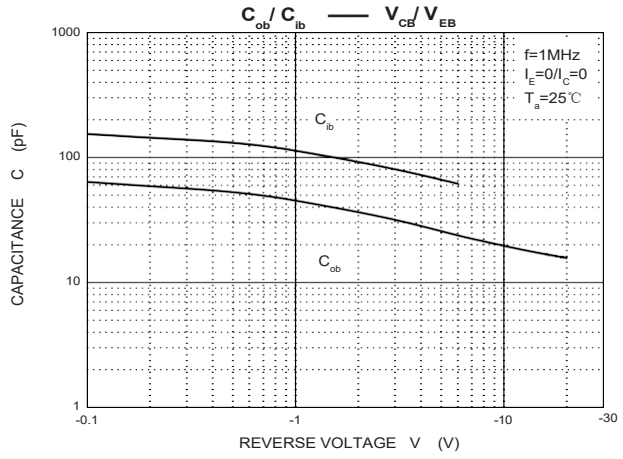

Static Characteristic
COMMON EMITTER
T_a=25℃
-1.0mA
-0.9mA
-0.8mA
-0.7mA
-0.6mA
-0.5mA
-0.4mA
-0.3mA
-0.2mA
I_B=-0.1mA
COLLECTOR CURRENT I_C (A)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

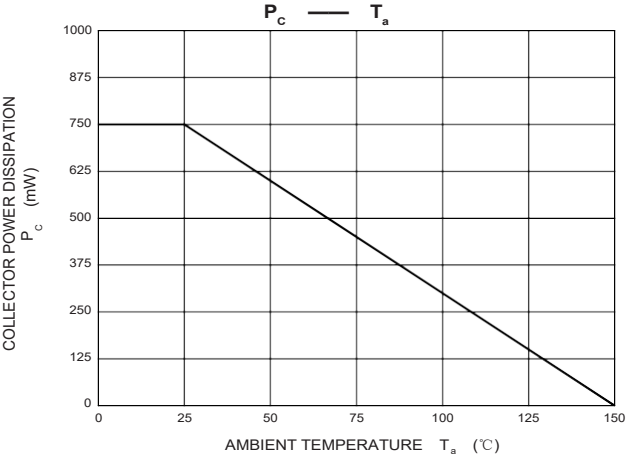

h_{FE} —— I_C
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}=-2V
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (mA)


V_{CEsat} —— I_C
T_a=100℃
T_a=25℃
β=20
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
COLLECTOR CURRENT I_C (mA)


V_{BEsat} —— I_C
T_a=25℃
T_a=100℃
β=20
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
COLLECTOR CURRENT I_C (mA)


I_C —— V_{BE}
COMMON EMITTER
V_{CE}=-2V
T_a=100℃
T_a=25℃
COLLCETOR CURRENT I_C (mA)
BASE-EMITER 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 (℃)