

TO-92 Plastic-Encapsulate Transistors

2SB1116/1116A TRANSISTOR (PNP)

FEATURES

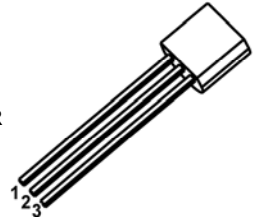
- High Collector Power Dissipation .
- Complementary to 2SD1616/2SD1616A

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage 2SB1116	-60	V
	2SB1116A	-80	
V _{CEO}	Collector-Emitter Voltage 2SB1116	-50	V
	2SB1116A	-60	
V _{EBO}	Emitter-Base Voltage	-6	V
I _C	Collector Current -Continuous	-1	A
P _C	Collector Power Dissipation	0.75	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

TO-92

1. EMITTER
2. COLLECTOR
3. BASE



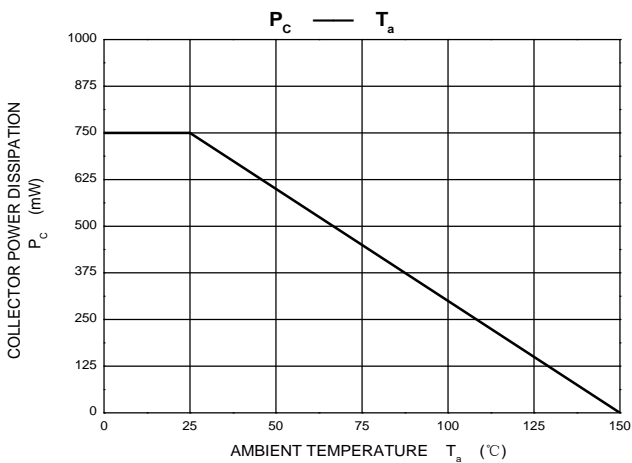
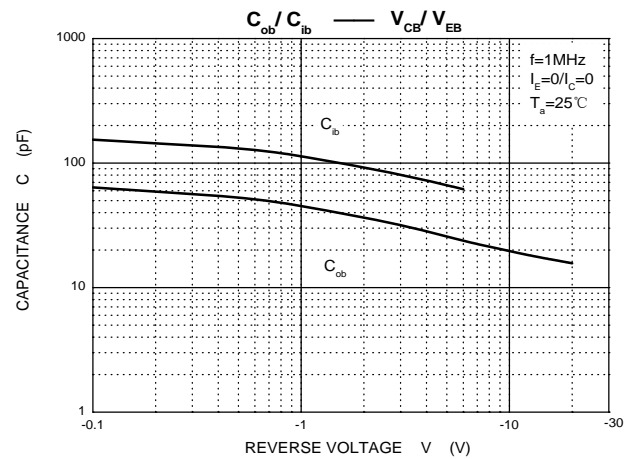
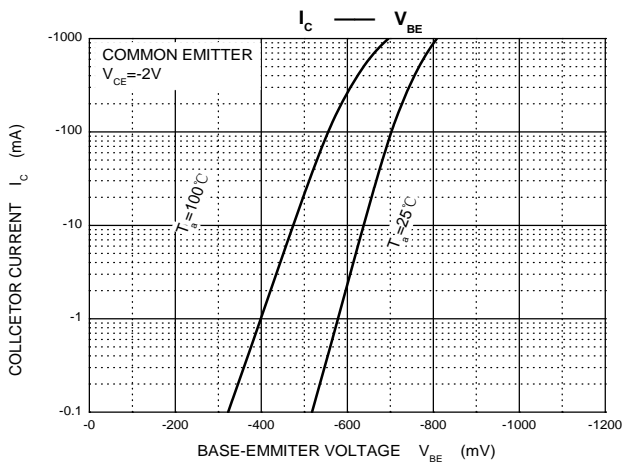
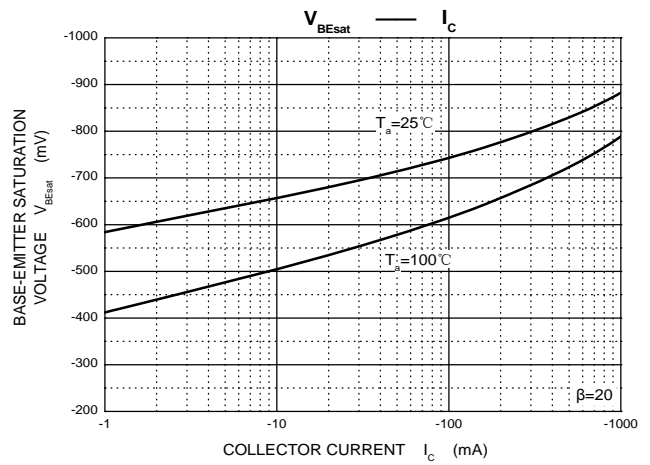
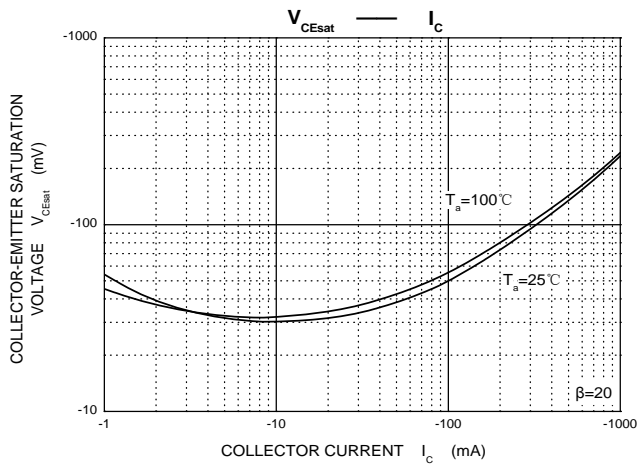
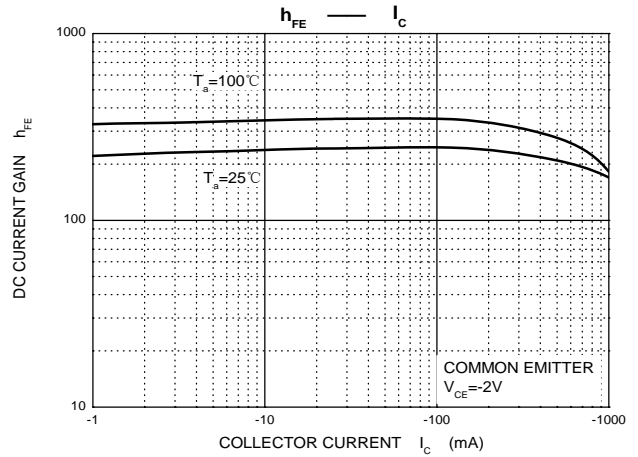
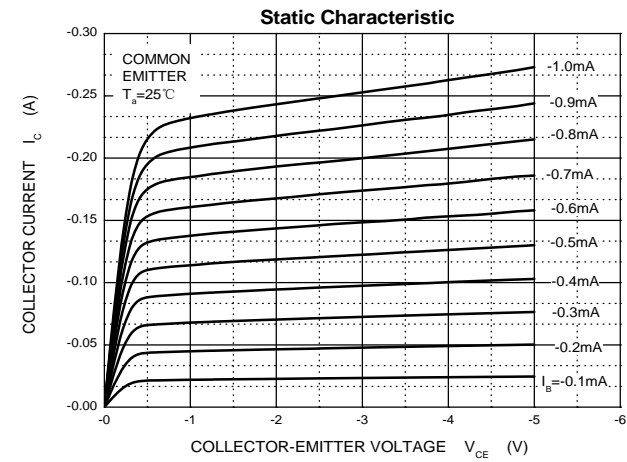
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =-100μA, I _E =0	2SB1116 -60			V
			2SB1116A -80			
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =-1mA, I _B =0	2SB1116 -50			V
			2SB1116A -60			
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

CLASSIFICATION OF h_{FE(1)}

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

Typical Characteristics



TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250