

TO-92 Plastic-Encapsulate Transistors

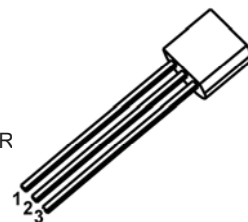
2SA836 TRANSISTOR (PNP)

FEATURES

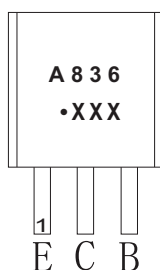
- High DC Current Gain
- Low Frequency Amplifier

TO - 92

1. EMITTER
2. COLLECTOR
3. BASE

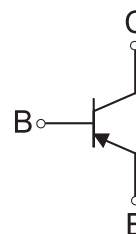


MARKING



A836=Device code
Solid dot=Green molding compound device,
if none,the normal device
XXX=Code

Equivalent Circuit



ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
2SA836	TO-92	Bulk	1000pcs/Bag
2SA836-TA	TO-92	Tape	2000pcs/Box

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-55	V
V_{CEO}	Collector-Emitter Voltage	-55	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-0.1	A
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

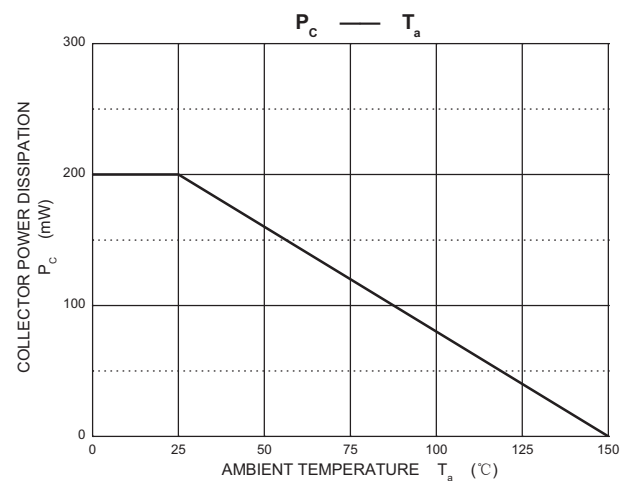
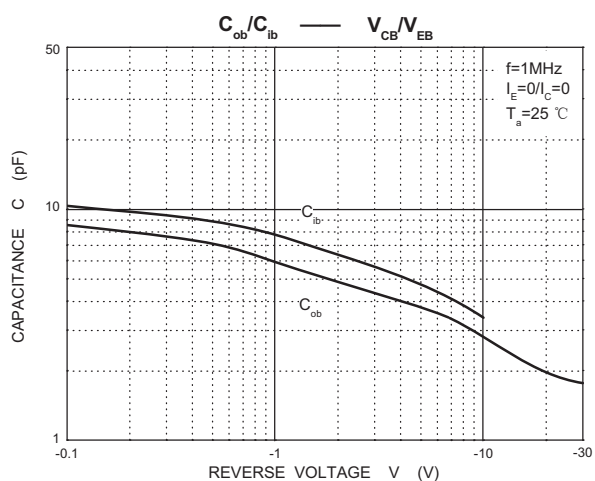
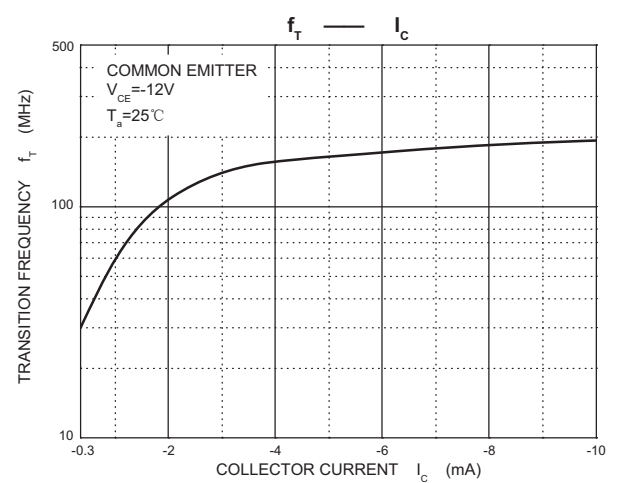
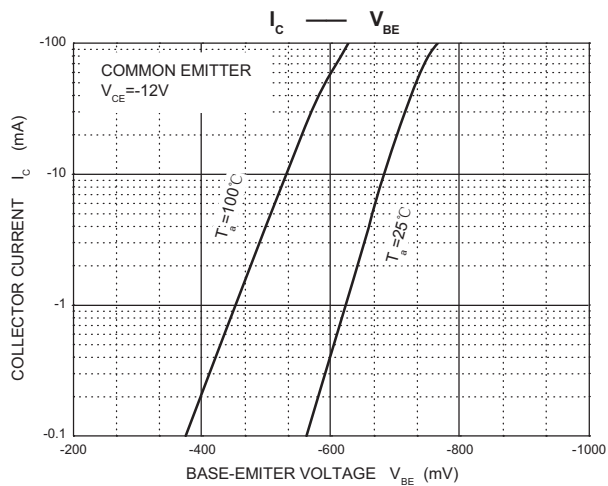
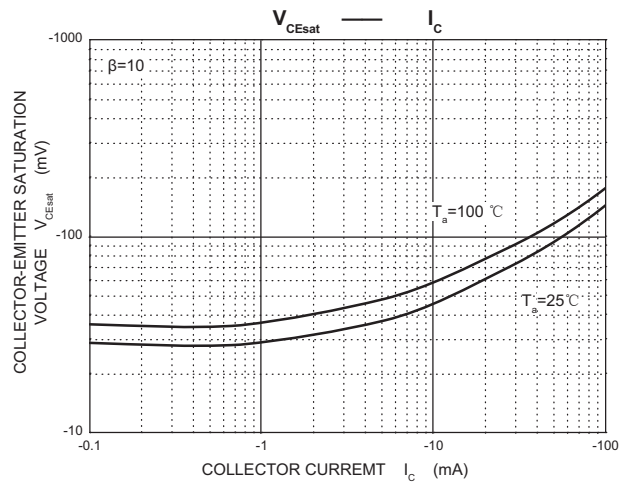
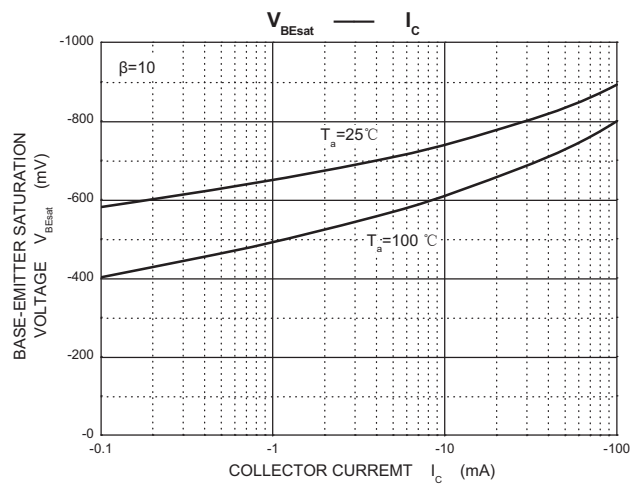
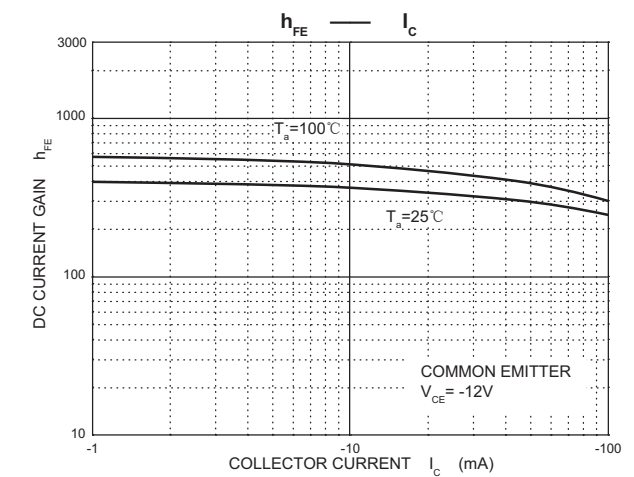
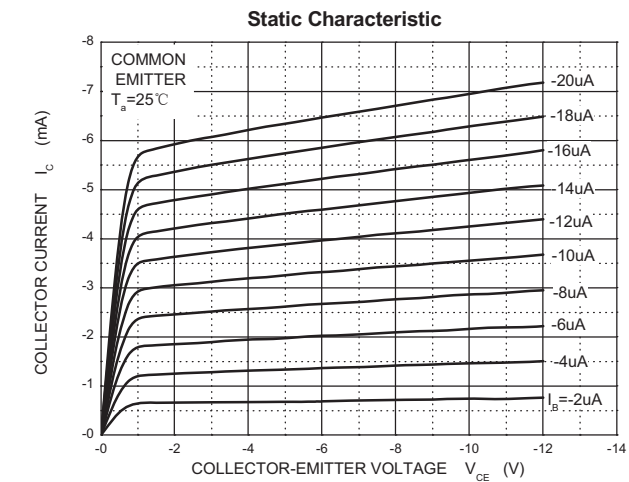
$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -0.01\text{mA}, I_E = 0$	-55			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-55			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -0.01\text{mA}, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -18\text{V}, I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -2\text{V}, I_C = 0$			-0.05	μA
DC current gain	h_{FE}	$V_{CE} = -12\text{V}, I_C = -2\text{mA}$	160		500	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$			-0.5	V
Base-emitter voltage	V_{BE}	$V_{CE} = -12\text{V}, I_C = -2\text{mA}$			-0.75	V
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$			4	pF
Transition frequency	f_T	$V_{CE} = -12\text{V}, I_C = -2\text{mA}$	150			MHz

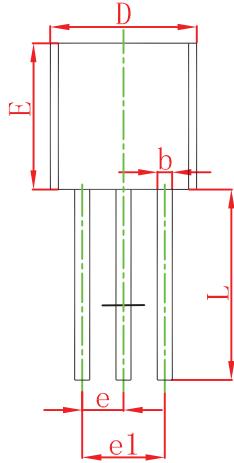
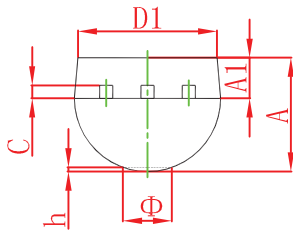
CLASSIFICATION OF h_{FE}

RANK	C	D
RANGE	160-320	250-500

Typical Characteristics

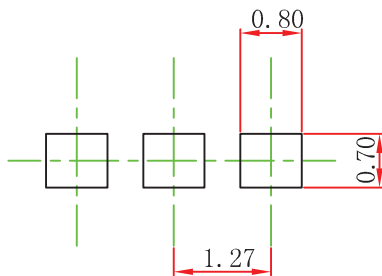


TO-92 Package Outline Dimensions



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



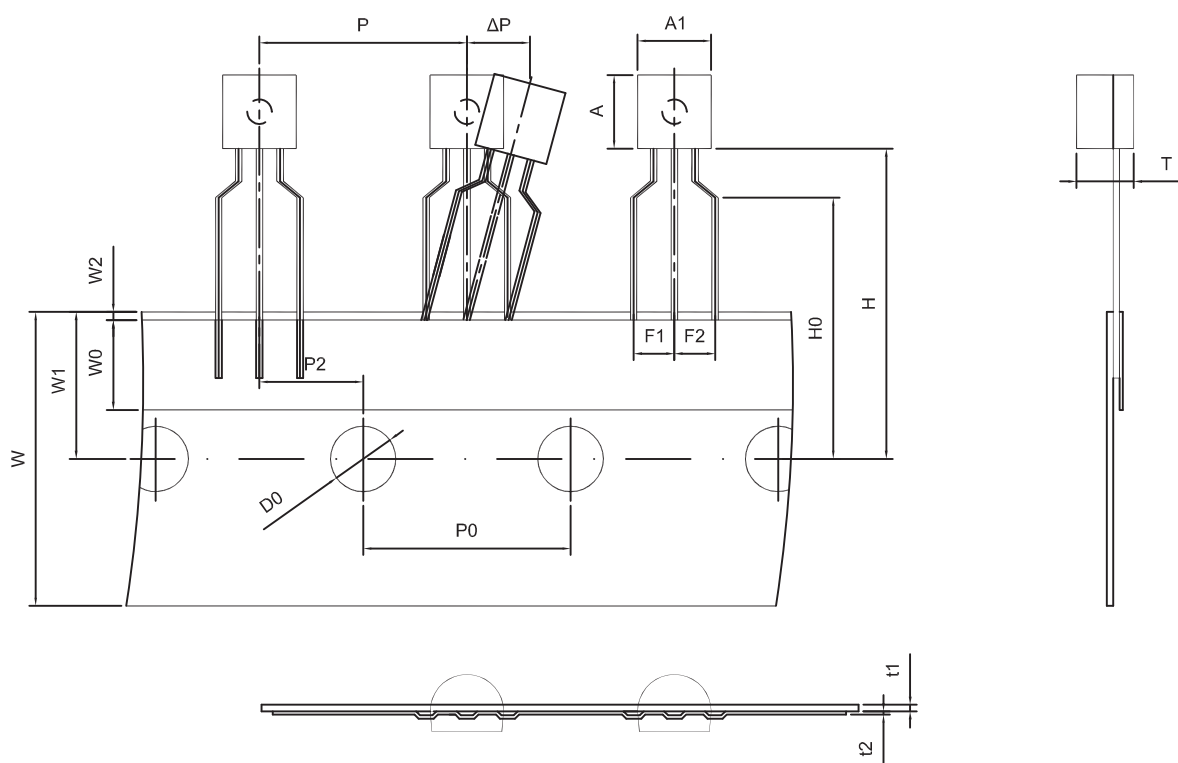
Note:

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

NOTICE

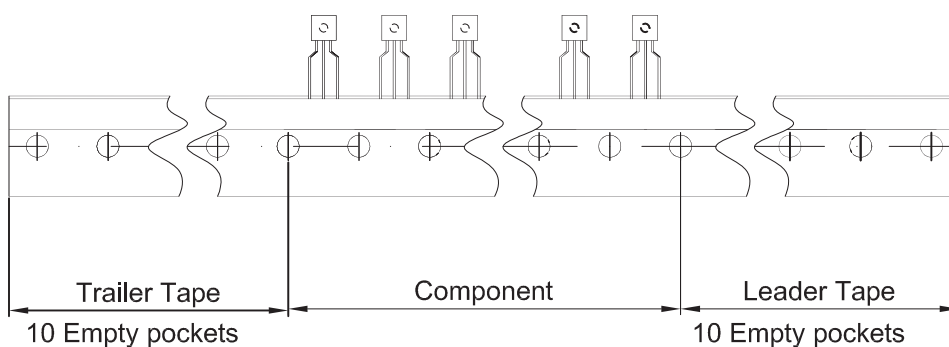
JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

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