# JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

TO-92S Plastic-Encapsulate Transistors
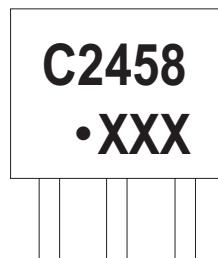
2SC2458 TRANSISTOR (NPN)

FEATURES

- High Current Capability
- High DC Current Gain
- Excellent h_{FE} Linearity
- Complementary to 2SA1048

TO – 92S

1. EMITTER

2. COLLECTOR

3. BASE

1 2 3
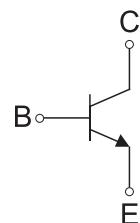
MARKING

C2458
•XXX

C2458=Device code
Solid dot = Green molding compound device,
if none, the normal device
XXX=Code

Equivalent Circuit

C

B

E

ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
2SC2458	TO-92S	Bulk	1000pcs/Bag
2SC2458-TA	TO-92S	Tape	3000pcs/Box

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	0.15	A
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	℃/W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

ELECTRICAL CHARACTERISTICS
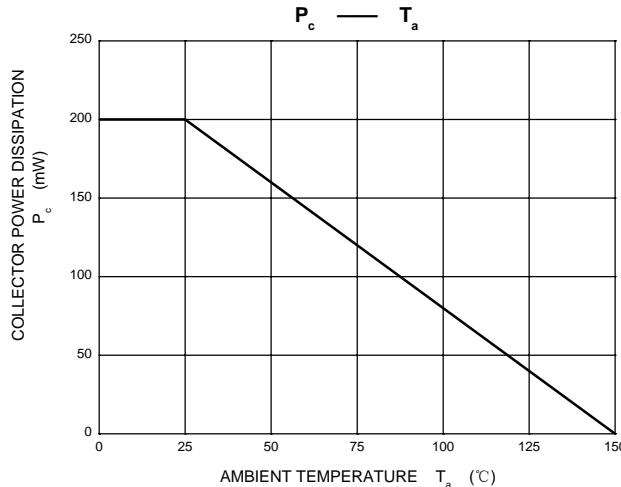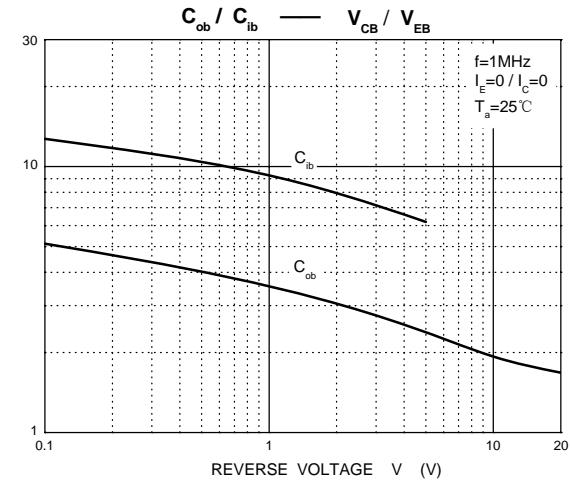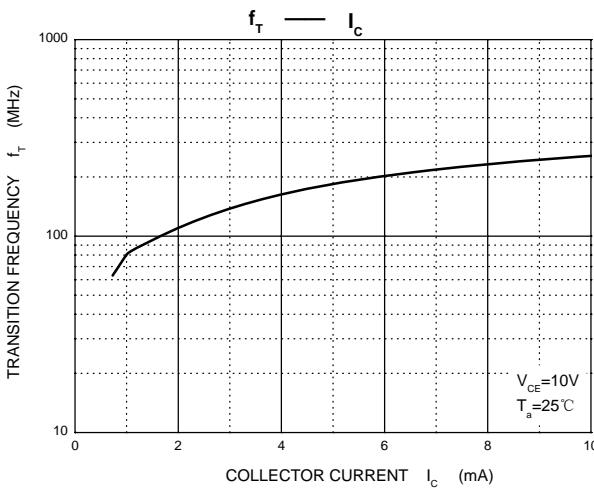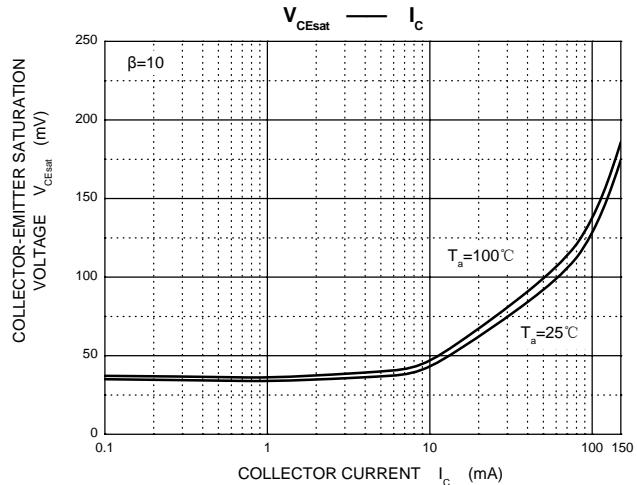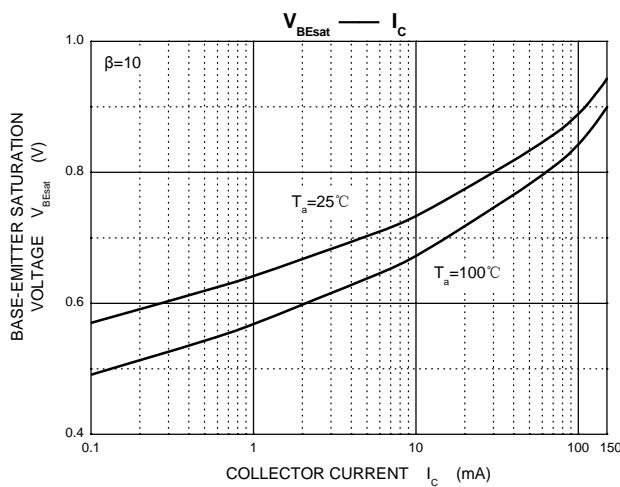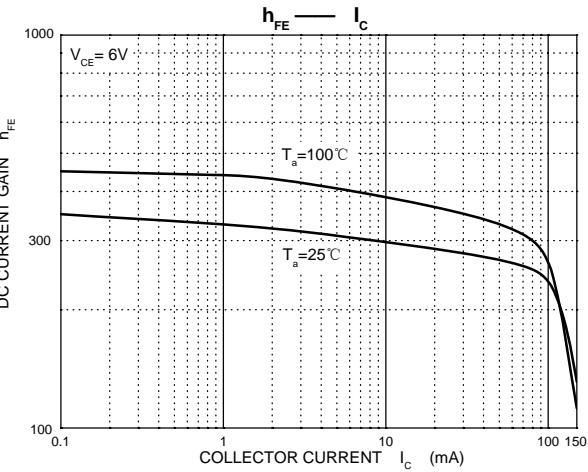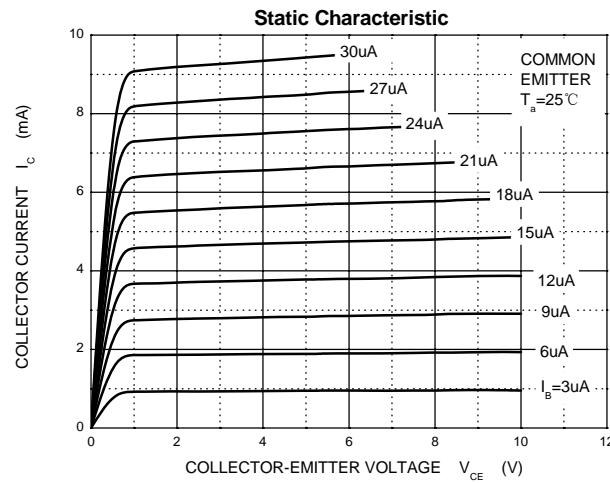
T$_a$=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V$_{(BR)CBO}$	I$_C$= 0.1mA,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$_E$=0.1mA,I$_C$=0	5			V
Collector cut-off current	I$_{CBO}$	V$_{CB}$=50V,I$_E$=0			0.1	μA
Emitter cut-off current	I$_{EBO}$	V$_{EB}$=5V,I$_C$=0			0.1	μA
DC current gain	h$_{FE}$	V$_{CE}$=6V, I$_C$=2mA	70		700	
Collector-emitter saturation voltage	V$_{CE(sat)}$	I$_C$=100mA,I$_B$=10mA			0.25	V
Collector output capacitance	C$_{ob}$	V$_{CB}$=10V,I$_E$=0, f=1MHz			3.5	pF
Transition frequency	f$_T$	V$_{CE}$=10V,I$_C$=1mA	80			MHz
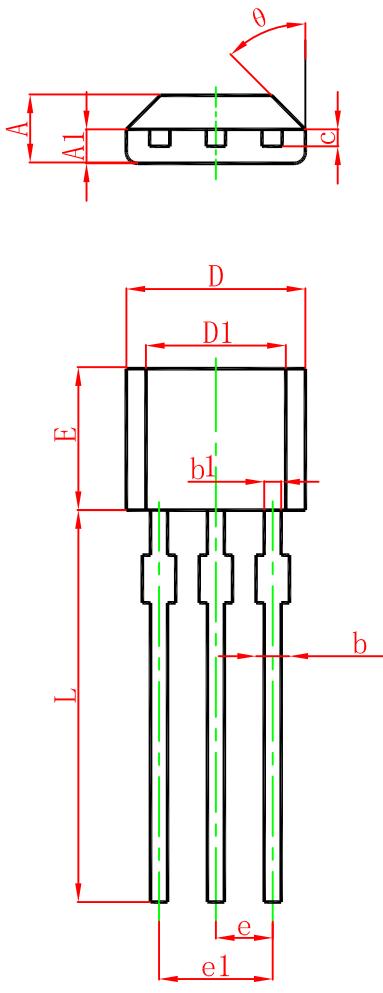
CLASSIFICATION OF h$_{FE}$

RANK	O	Y	GR	BL
RANGE	70-140	120-240	200-400	350-700

Typical Characteristics

Static Characteristic

COLLECTOR CURRENT I_C (mA)

COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

COMMON EMITTER T_a=25℃

30uA
27uA
24uA
21uA
18uA
15uA
12uA
9uA
6uA
I_B=3uA

h_{FE} —— I_C

V_{CE}= 6V

DC CURRENT GAIN h_{FE}

COLLECTOR CURRENT I_C (mA)

T_a=100℃
T_a=25℃

V_{BEsat} —— I_C

β=10

BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (V)

COLLECTOR CURRENT I_C (mA)

T_a=25℃
T_a=100℃

V_{CEsat} —— I_C

β=10

COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)

COLLECTOR CURRENT I_C (mA)

T_a=100℃
T_a=25℃

f_T —— I_C

TRANSITION FREQUENCY f_T (MHz)

COLLECTOR CURRENT I_C (mA)

V_{CE}=10V
T_a=25℃

C_{ob} / C_{ib} —— V_{CB} / V_{EB}

f=1MHz
I_E=0 / I_C=0
T_a=25℃

CAPACITANCE C (pF)

REVERSE VOLTAGE V (V)

C_{ib}
C_{ob}

P_c —— T_a

COLLECTOR POWER DISSIPATION P_c (mW)

AMBIENT TEMPERATURE T_a (℃)

TO-92S Package Outline Dimensions

| Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.420	1.620	0.056	0.064
A1	0.660	0.860	0.026	0.034
b	0.330	0.480	0.013	0.019
b1	0.400	0.510	0.016	0.020
c	0.330	0.510	0.013	0.020
D	3.900	4.100	0.154	0.161
D1	2.280	2.680	0.090	0.106
E	3.050	3.250	0.120	0.128
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	15.100	15.500	0.594	0.610
θ	45° TYP.		45° TYP.	

TO-92S Suggested Pad Layout
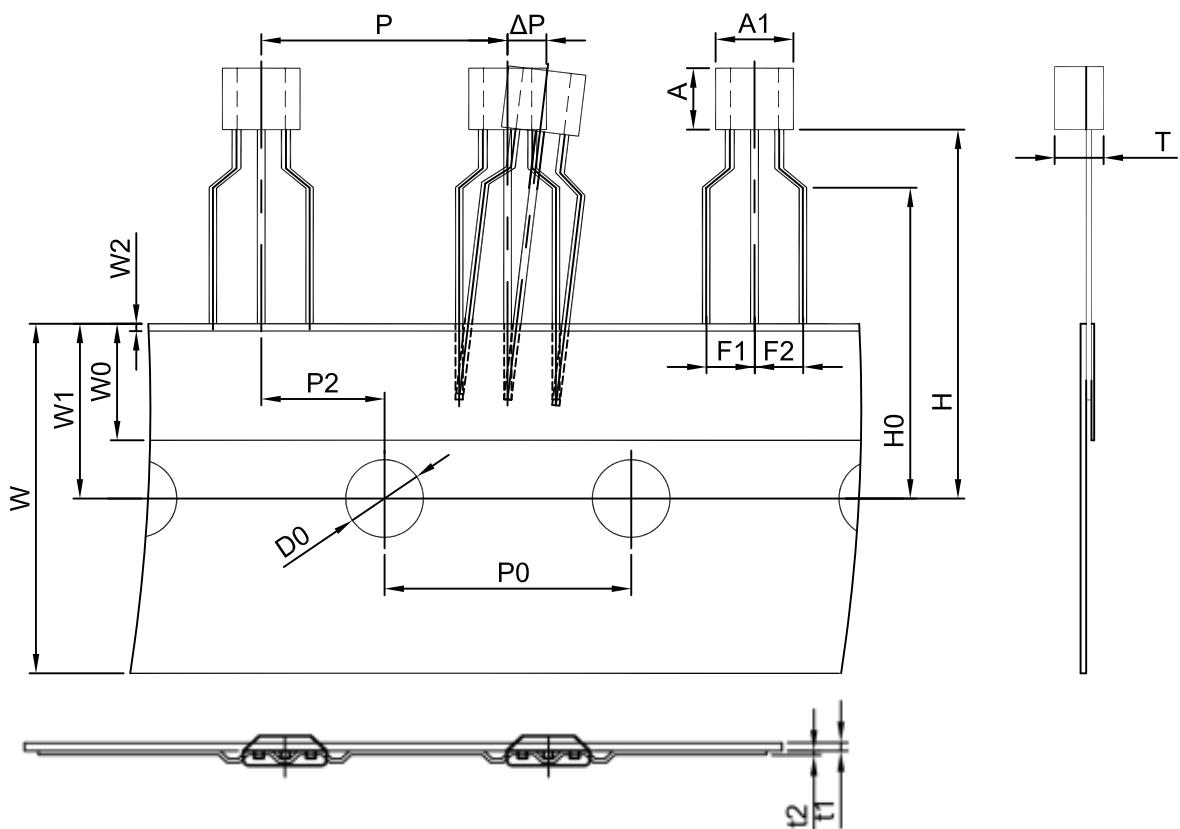
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.
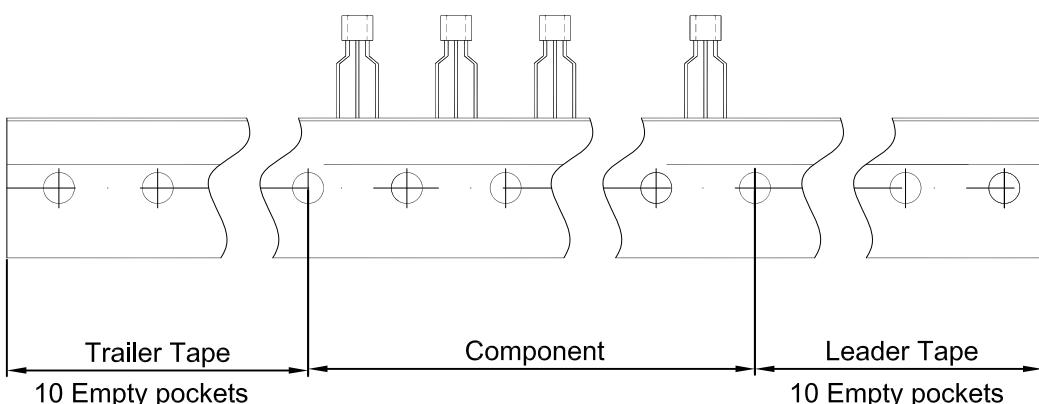
NOTICE
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TO-92S PACKAGE TAPING DIMENSION

Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.0	3.15	1.52	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	19.0	16.0	4.0	0.4	0.2	0

Trailer Tape
10 Empty pockets

Component

Leader Tape
10 Empty pockets

Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92S	3000 pcs	333×162×43	30,000 pcs	350×340×250

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