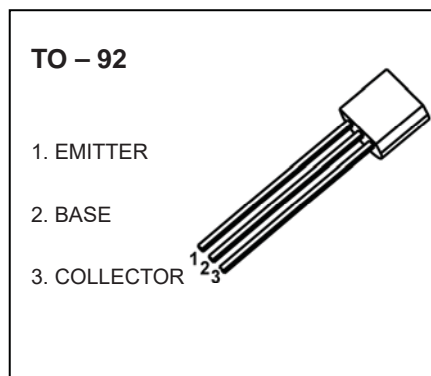


TO-92 Plastic-Encapsulate Transistors

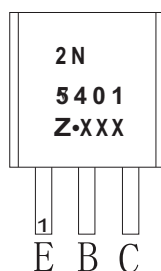
2N5401 TRANSISTOR (PNP)

FEATURES

- Switching and Amplification in High Voltage
- Applications such as Telephony
- Low Current
- High Voltage

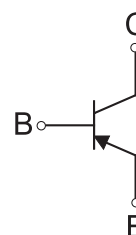


MARKING



2N5401=Device code
Solid dot=Green molding compound device,
if none,the normal device
Z=Rank of h_{FE}
XXX=Code

Equivalent Circuit



ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
2N5401	TO-92	Bulk	1000pcs/Bag
2N5401-TA	TO-92	Tape	2000pcs/Box

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-160	V
V_{CEO}	Collector-Emitter Voltage	-150	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-0.6	A
P_C	Collector Power Dissipation	625	mW
R_{KJA}	Thermal Resistance From Junction To Ambient	200	$^\circ\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

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

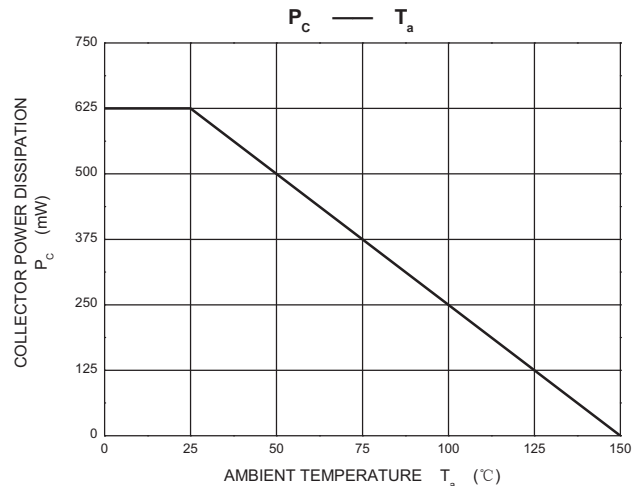
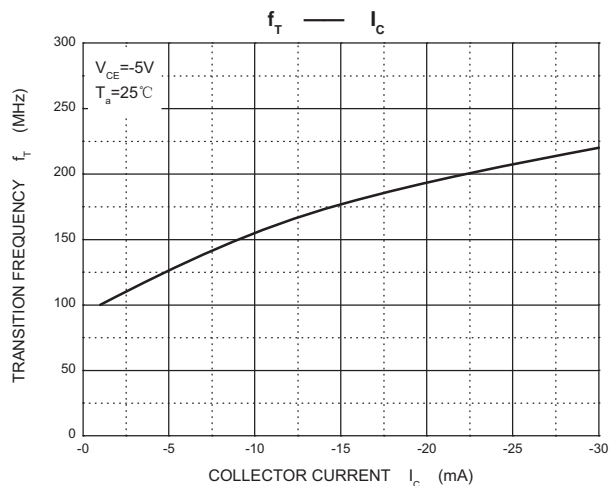
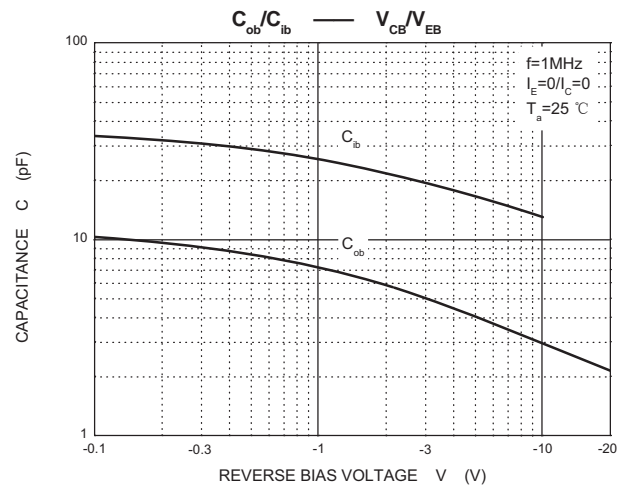
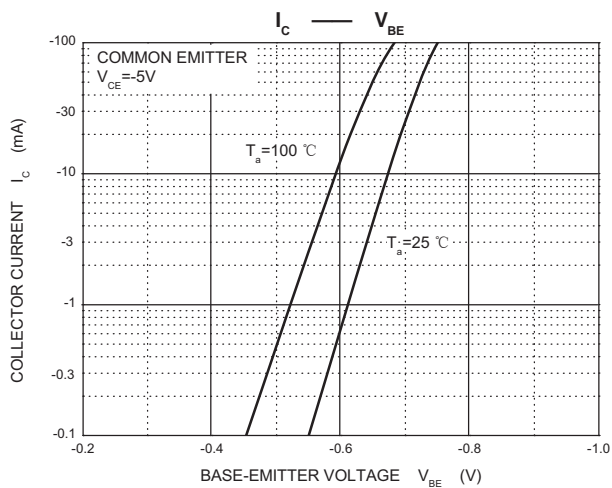
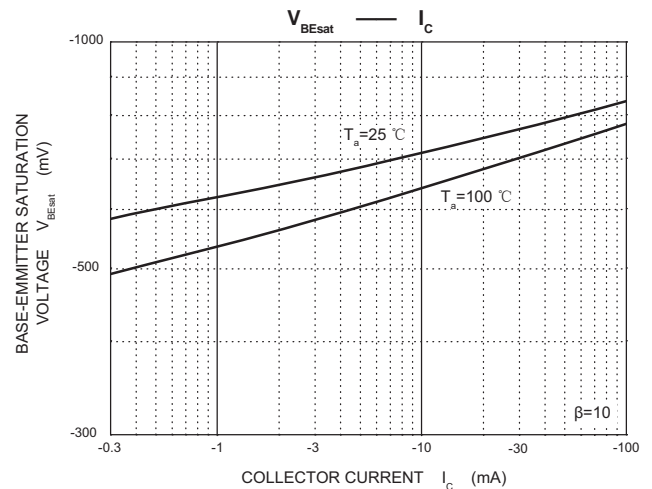
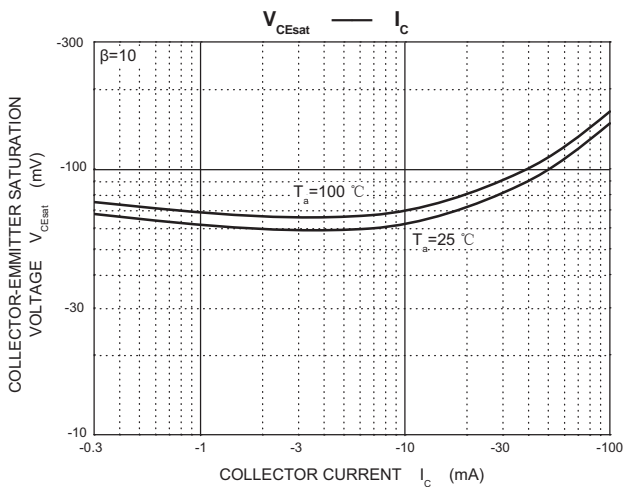
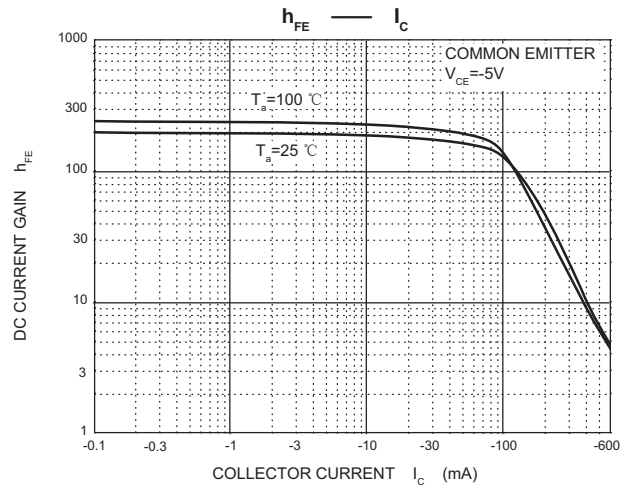
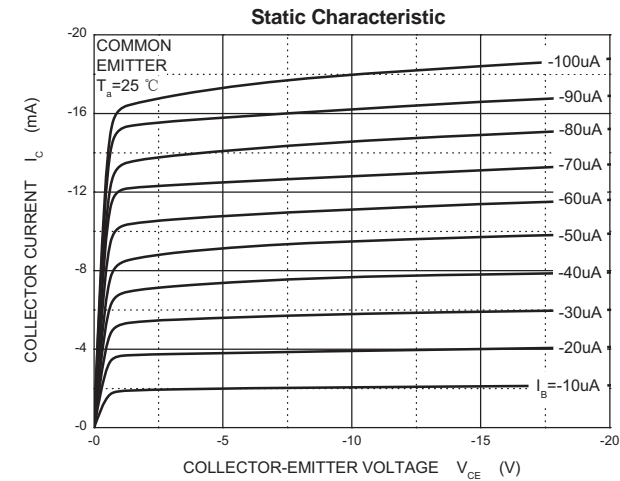
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -0.1\text{mA}, I_E = 0$	-160			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-150			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -0.01\text{mA}, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -120\text{V}, I_E = 0$			-50	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -3\text{V}, I_C = 0$			-50	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = -5\text{V}, I_C = -1\text{mA}$	80			
	$h_{FE(2)}$	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$	100		300	
	$h_{FE(3)}$	$V_{CE} = -5\text{V}, I_C = -50\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$			-1	V
Transition frequency	f_T	$V_{CE} = -5\text{V}, I_C = -10\text{mA}, f = 30\text{MHz}$	100		300	MHz

*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2.0\%$.

CLASSIFICATION OF $h_{FE(2)}$

RANK	A	B	C
RANGE	100-150	150-200	200-300

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	4.400	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



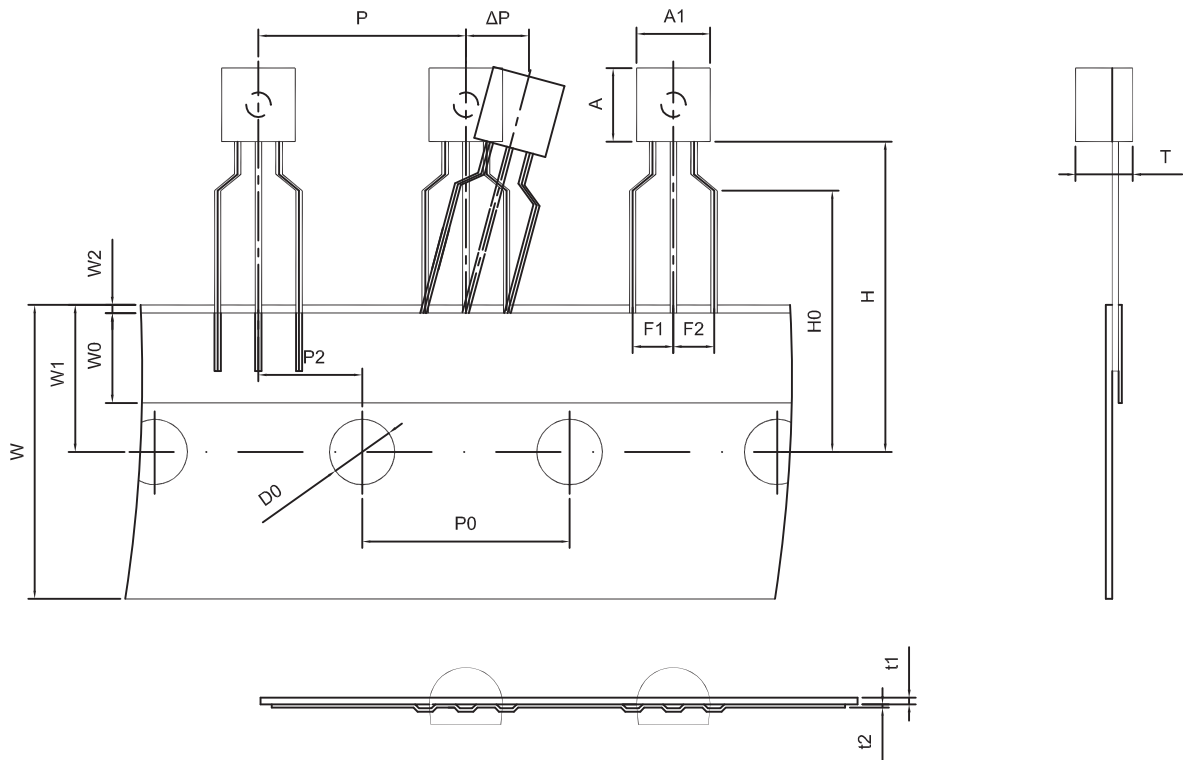
Note:

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

NOTICE

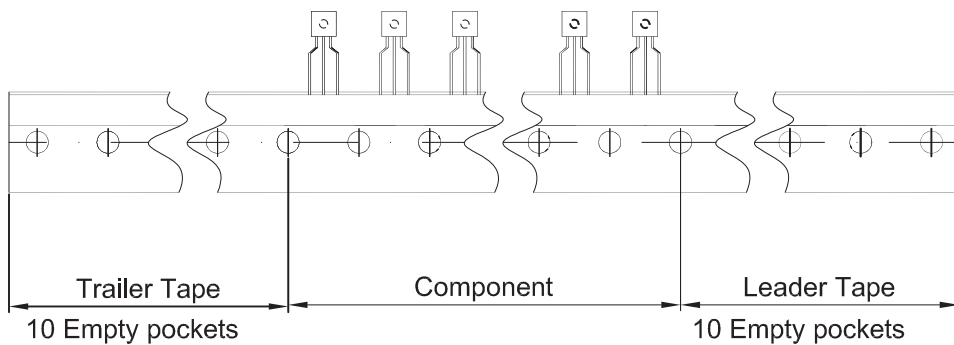
JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

TO-92 Tape and Reel



Dimensions 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