

### FTD1304 TRANSISTOR (NPN)

#### FEATURES

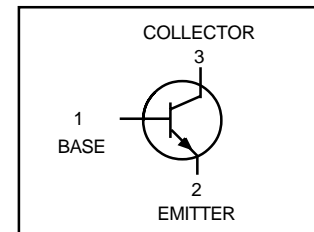
- High emitter-base voltage
- low on resistance

**MARKING: HMAX**

**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**



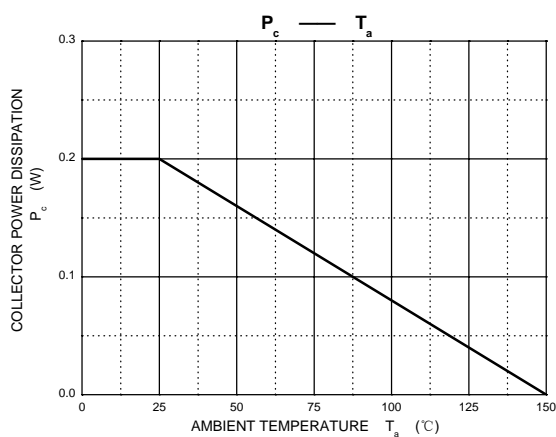
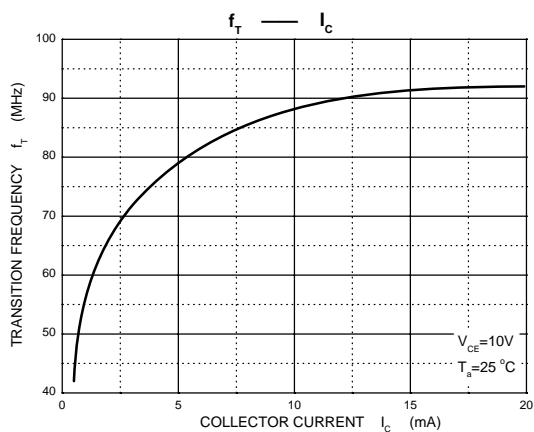
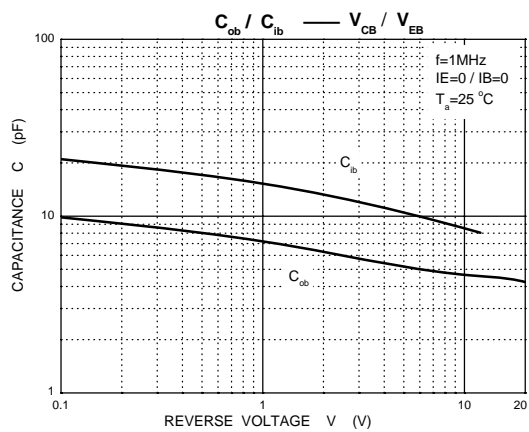
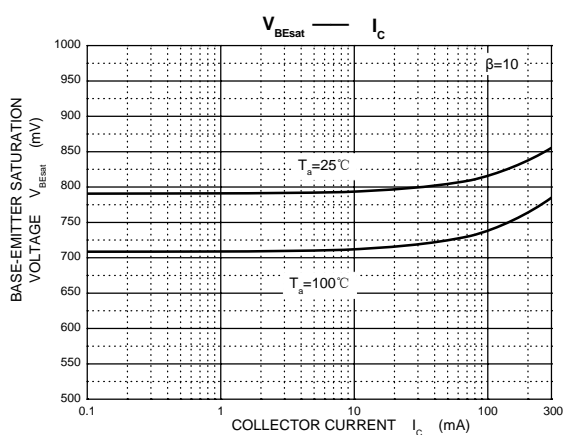
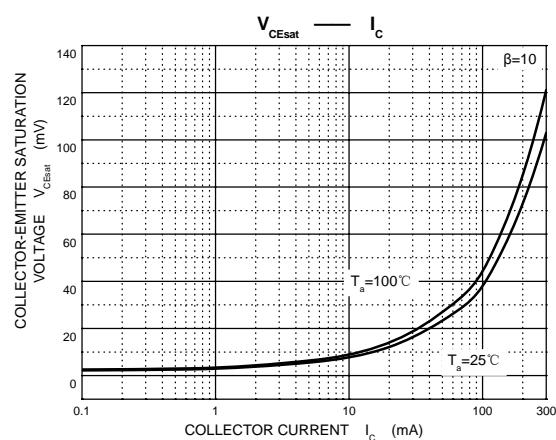
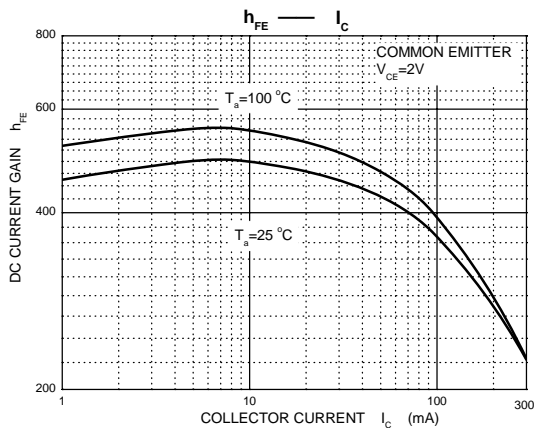
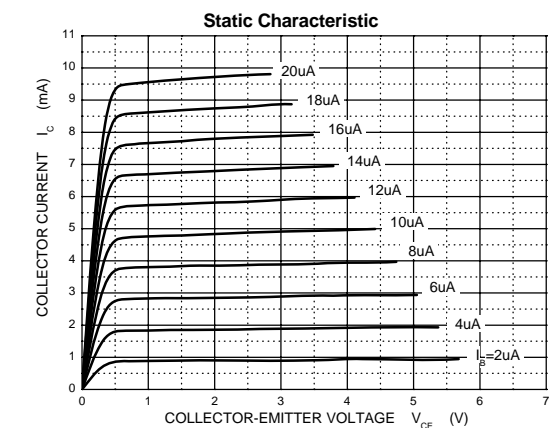
Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	25	V
V <sub>CEO</sub>	Collector-Emitter Voltage	20	V
V <sub>EBO</sub>	Emitter-Base Voltage	12	V
I <sub>C</sub>	Collector Current -Continuous	0.3	A
P <sub>C</sub>	Collector Power Dissipation	0.2	W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C



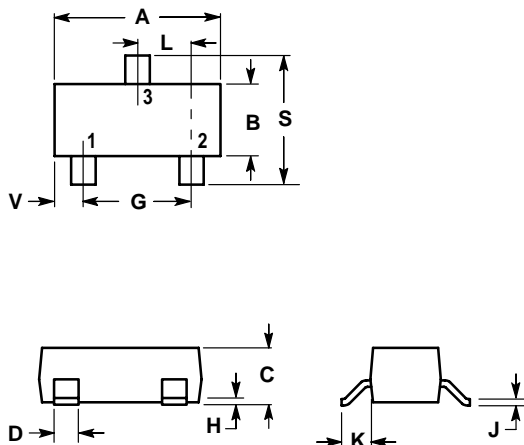
#### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	25			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	20			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	12			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =25 V, I <sub>E</sub> =0			0.1	μ A
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =12V, I <sub>C</sub> =0			0.1	μ A
DC current gain	h <sub>FE</sub> (FOR)	V <sub>CE</sub> =2V, I <sub>C</sub> =4 mA	200		1000	
	h <sub>FE</sub> (REV)	V <sub>CE</sub> = 2V, I <sub>C</sub> = 4mA	20			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 100mA, I <sub>B</sub> =10 mA			0.25	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 100mA, I <sub>B</sub> =10mA			1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> = 1mA f=100MHz		60		MHz
output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		10		pF
On resistance	R <sub>(on)</sub>	V <sub>in</sub> =0.3V, I <sub>B</sub> =1mA, f=1KHz		0.6		Ω

# Typical Characteristics



## SOT-23



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- P N 1. ANODE  
 2. NO CONNECTION  
 3. CATHODE

