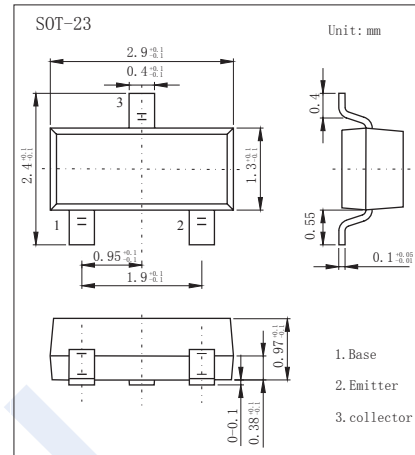


## NPN Transistors

### 2SD780-HF

#### ■ Features

- High DC current gain
- Complimentary to 2SB736-HF
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



#### ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V <sub>CB0</sub>	60	V
Collector - Emitter Voltage	V <sub>CE0</sub>	60	
Emitter - Base Voltage	V <sub>EB0</sub>	5	
Collector Current - Continuous	I <sub>c</sub>	300	mA
Collector Power Dissipation	P <sub>c</sub>	200	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to 150	

#### ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V <sub>CB0</sub>	I <sub>c</sub> = 100 μA, I <sub>E</sub> = 0	60			V
Collector- emitter breakdown voltage	V <sub>CE0</sub>	I <sub>c</sub> = 1 mA, I <sub>B</sub> = 0	60			
Emitter - base breakdown voltage	V <sub>EB0</sub>	I <sub>E</sub> = 100 μA, I <sub>c</sub> = 0	5			
Collector-base cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> = 50 V, I <sub>E</sub> = 0			0.1	μA
Emitter cut-off current	I <sub>EB0</sub>	V <sub>EB</sub> = 5V, I <sub>c</sub> =0			0.1	
Collector-emitter saturation voltage (Note.1)	V <sub>CE(sat)</sub>	I <sub>c</sub> =300 mA, I <sub>B</sub> =30mA		0.15	0.6	V
Base - emitter saturation voltage (Note.1)	V <sub>BE(sat)</sub>	I <sub>c</sub> =300 mA, I <sub>B</sub> =30mA			1.2	
Base - emitter voltage (Note.1)	V <sub>BE</sub>	V <sub>CE</sub> = 6V, I <sub>c</sub> =10mA	600	645	700	mV
DC current gain (Note.1)	h <sub>FE(1)</sub>	V <sub>CE</sub> = 1V, I <sub>c</sub> = 50mA	110	200	400	
	h <sub>FE(2)</sub>	V <sub>CE</sub> = 2V, I <sub>c</sub> = 300mA	30			
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 6V, I <sub>E</sub> =0, f=1MHz		7		pF
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 6V, I <sub>E</sub> = -10mA		140		MHz

Note.1: Pulse test : Pulse width ≤350μs, Duty Cycle ≤2%.

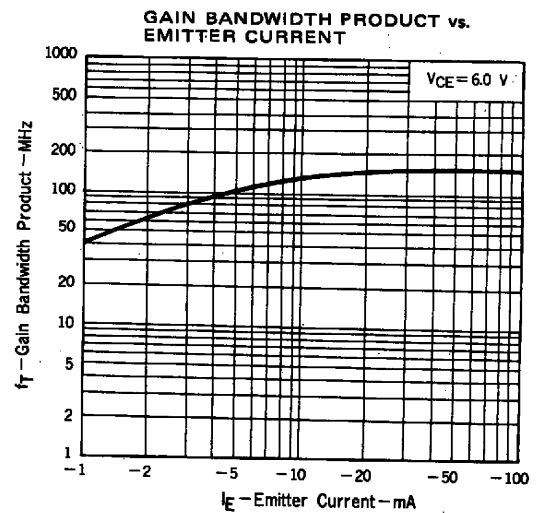
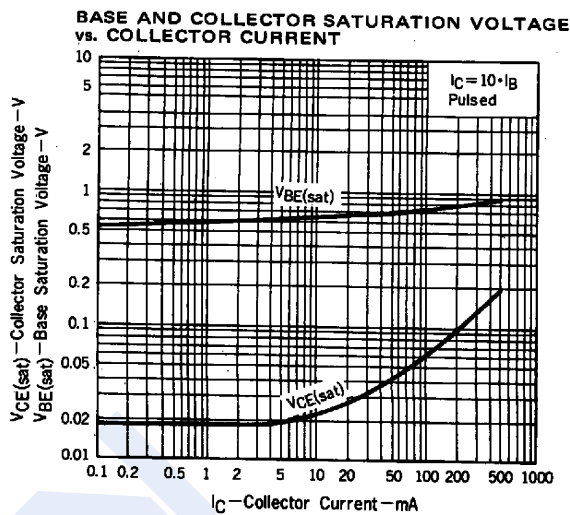
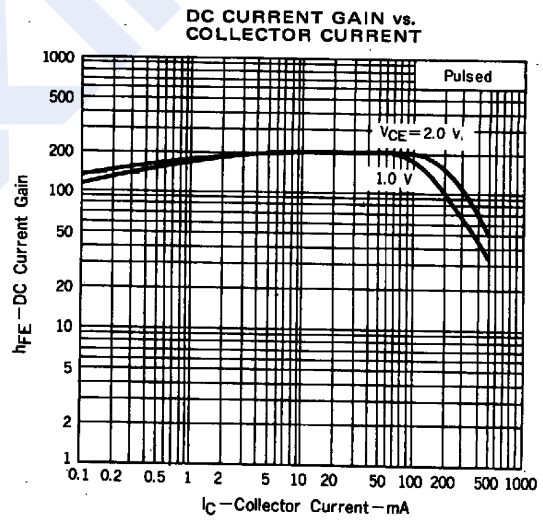
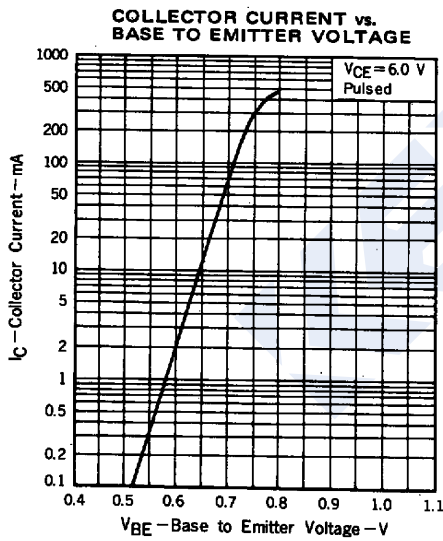
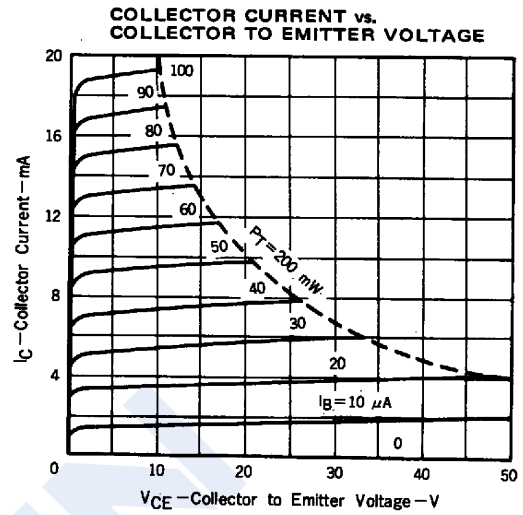
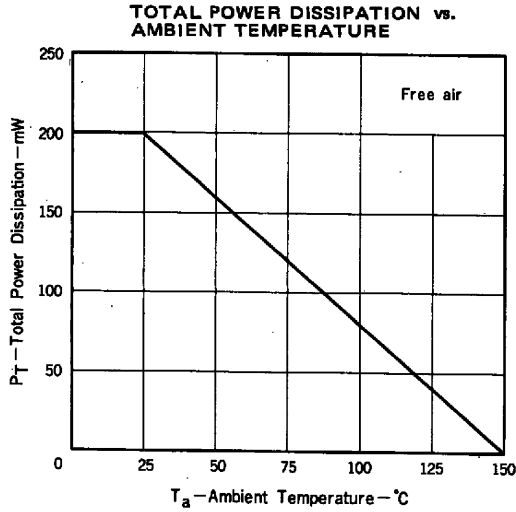
#### ■ Classification of h<sub>FE(1)</sub>

Type	2SD780-DW1-HF	2SD780-DW2-HF	2SD780-DW3-HF	2SD780-DW4-HF	2SD780-DW5-HF
Range	110-180	135-220	170-270	200-320	250-400
Marking	DW1 <sub>F</sub>	DW2 <sub>F</sub>	DW3 <sub>F</sub>	DW4 <sub>F</sub>	DW5 <sub>F</sub>

### NPN Transistors

### 2SD780-HF

■ Typical Characteristics



## NPN Transistors

## 2SD780-HF

## ■ Typical Characteristics

