

## TO-251 Plastic-Encapsulate Transistors

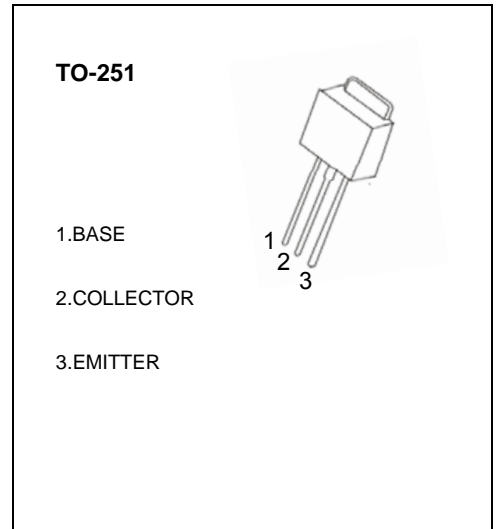
### 2SD1802 TRANSISTOR (NPN)

#### FEATURES

- Adoption of FBET,MBIT Processes
- Large Current Capacity and Wide ASO
- Low Collector-to-Emitter Saturation Voltage
- Fast Switching Speed

#### MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	50	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current –Continuous	3	A
P <sub>C</sub>	Collector Power Dissipation	1	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C



#### ELECTRICAL CHARACTERISTICS (Ta=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> =10μA, I <sub>E</sub> =0	60			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	50			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	6			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =40V, I <sub>E</sub> =0			1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			1	μA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =100mA	100		560	
	h <sub>FE(2)</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =3A	35			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =2A, I <sub>B</sub> =100mA			0.5	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =2A, I <sub>B</sub> =100mA			1.2	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA		150		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		25		pF

#### CLASSIFICATION OF h<sub>FE(1)</sub>

Rank	R	S	T	U
Range	100-200	140-280	200-400	280-560

# Typical Characteristics

# 2SD1802

