



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

2SD1616A

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

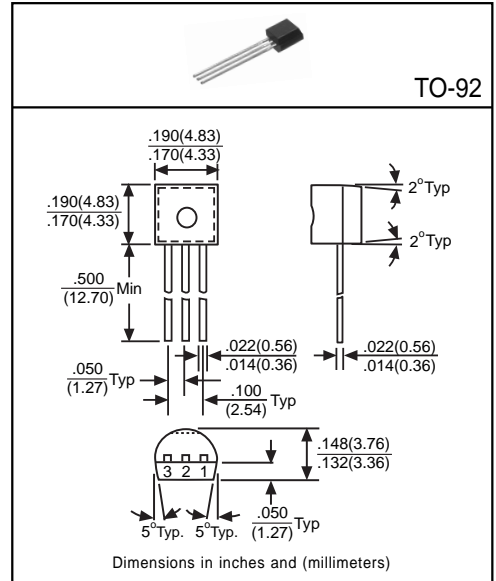
Designed for audio frequency power amplifier and medium-speed switching applications.

Pinning

- 1 = Emitter
- 2 = Collector
- 3 = Base

Absolute Maximum Ratings(T<sub>A</sub>=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	120	V
Collector-Emitter Voltage	V <sub>CE0</sub>	60	V
Emitter-Base Voltage	V <sub>EB0</sub>	6	V
Collector Current (DC)	I <sub>C</sub>	1	A
Collector Current (pulse)	I <sub>C</sub>	2	A
Total Power Dissipation	P <sub>D</sub>	750	mW
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C



Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	120	-	-	V	I <sub>C</sub> =100μA
Collector-Emitter Breakdown Voltage	BV <sub>CE0</sub>	60	-	-	V	I <sub>C</sub> =1mA
Emitter-Base Breakdown Voltage	BV <sub>EB0</sub>	6	-	-	V	I <sub>E</sub> =10μA
Collector Cutoff Current	I <sub>CBO</sub>	-	-	0.1	μA	V <sub>CB</sub> =60V
Emitter Cutoff Current	I <sub>EBO</sub>	-	-	0.1	μA	V <sub>EB</sub> =6V
Collector-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>CE(sat)</sub>	-	0.15	0.3	V	I <sub>C</sub> =1A, I <sub>B</sub> =50mA
Base-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>BE(sat)</sub>	-	0.9	1.2	V	I <sub>C</sub> =1A, I <sub>B</sub> =50mA
Base-Emitter On Voltage <sup>(1)</sup>	V <sub>BE(on)</sub>	0.6	-	0.7	V	I <sub>C</sub> =50mA, V <sub>CE</sub> =2V
DC Current Gain <sup>(1)</sup>	hFE1	135	-	600	-	I <sub>C</sub> =100mA, V <sub>CE</sub> =2V
	hFE2	81	-	-	-	I <sub>C</sub> =1A, V <sub>CE</sub> =2V
Transition Frequency	f <sub>T</sub>	100	160	-	MHz	I <sub>C</sub> =100mA, V <sub>CE</sub> =2V
Output Capacitance	C <sub>ob</sub>	-	-	19	pF	V <sub>CB</sub> =10V, f=1MHz, I <sub>E</sub> =0
Turn-On Time	t <sub>on</sub>	-	0.07	-	μS	I <sub>C</sub> =100mA, V <sub>CE</sub> =10V
Storage Time	t <sub>s</sub>	-	0.95	-	μS	I <sub>B1</sub> =I <sub>B2</sub> =10mA
Fall Time	t <sub>f</sub>	-	0.07	-	μS	V <sub>BE(off)</sub> =-2 ~ -3V

(1)Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

Classification of hFE1

Rank	Y	G	L
Range	135-270	200-400	300-600