



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

2SD1616A

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

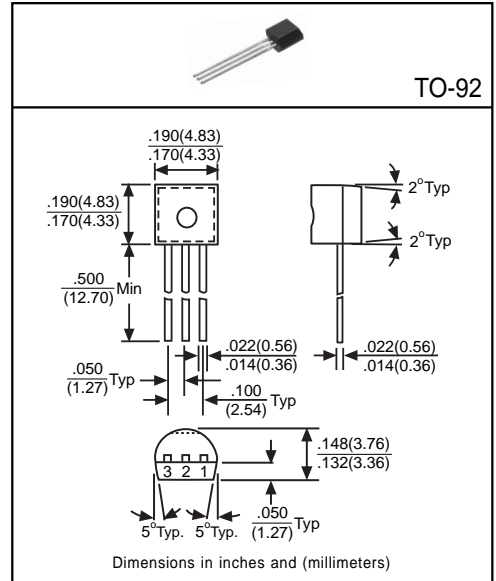
Designed for audio frequency power amplifier and medium-speed switching applications.

Pinning

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

Absolute Maximum Ratings(T_A=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V _{CB0}	120	V
Collector-Emitter Voltage	V _{CE0}	60	V
Emitter-Base Voltage	V _{EB0}	6	V
Collector Current (DC)	I _C	1	A
Collector Current (pulse)	I _C	2	A
Total Power Dissipation	P _D	750	mW
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-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 _{CB0}	120	-	-	V	I _C =100μA
Collector-Emitter Breakdown Voltage	BV _{CE0}	60	-	-	V	I _C =1mA
Emitter-Base Breakdown Voltage	BV _{EB0}	6	-	-	V	I _E =10μA
Collector Cutoff Current	I _{CBO}	-	-	0.1	μA	V _{CB} =60V
Emitter Cutoff Current	I _{EBO}	-	-	0.1	μA	V _{EB} =6V
Collector-Emitter Saturation Voltage ⁽¹⁾	V _{CE(sat)}	-	0.15	0.3	V	I _C =1A, I _B =50mA
Base-Emitter Saturation Voltage ⁽¹⁾	V _{BE(sat)}	-	0.9	1.2	V	I _C =1A, I _B =50mA
Base-Emitter On Voltage ⁽¹⁾	V _{BE(on)}	0.6	-	0.7	V	I _C =50mA, V _{CE} =2V
DC Current Gain ⁽¹⁾	h _{FE1}	135	-	600	-	I _C =100mA, V _{CE} =2V
	h _{FE2}	81	-	-	-	I _C =1A, V _{CE} =2V
Transition Frequency	f _T	100	160	-	MHz	I _C =100mA, V _{CE} =2V
Output Capacitance	C _{ob}	-	-	19	pF	V _{CB} =10V, f=1MHz, I _E =0
Turn-On Time	t _{on}	-	0.07	-	μs	I _C =100mA, V _{CE} =10V
Storage Time	t _s	-	0.95	-	μs	I _{B1} =I _{B2} =10mA
Fall Time	t _f	-	0.07	-	μs	V _{BE(off)} =-2 ~ -3V

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

Classification of h_{FE1}

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