



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

SC5094

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

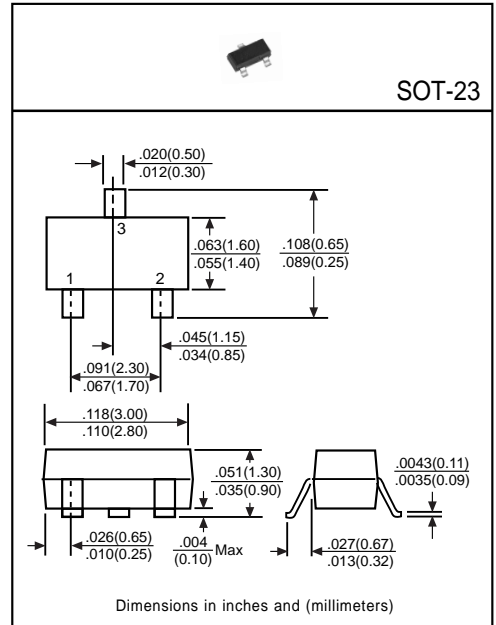
Designed for low noise amplifier at VHF, UHF and CATV band.

Pinning

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

Absolute Maximum Ratings (TA=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	VCBO	18	V
Collector-Emitter Voltage	VCEO	10	V
Emitter-Base Voltage	VEBO	2.5	V
Collector Current	IC	20	mA
Total Power Dissipation	PD	150	mW
Junction Temperature	TJ	+125	°C
Storage Temperature	TSTG	-50 to +125	°C



Electrical Characteristics

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector Cutoff Current	ICBO	-	-	1	μA	VCB=3V
Emitter Cutoff Current	IEBO	-	-	1	μA	VEB=1V
DC Current Gain <sup>(1)</sup>	hFE	50	80	160	-	IC=1mA, VCE=2V
Transition Frequency	fr	-	7.6	-	GHz	IC=10mA, VCE=1V
		-	9	-	GHz	IC=12mA, VCE=3V
Minimum Noise Figure	NFmin	-	1.4	-	dB	IC=4.2mA, VCE=2V, f=0.9GHz
		-	1.6	-	dB	IC=4.5mA, VCE=5V, f=0.9GHz
Associated Gain	GA	-	12	-	dB	IC=4.2mA, VCE=2V, f=0.9GHz
		-	13.5	-	dB	IC=4.5mA, VCE=5V, f=0.9GHz
Insertion Gain  S21  <sup>2</sup> in 50Ω system	S21  <sup>2</sup>	-	12.8	-	dB	IC=4.2mA, VCE=2V, f=0.9GHz
		-	13.5	-	dB	IC=4.5mA, VCE=5V, f=0.9GHz

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