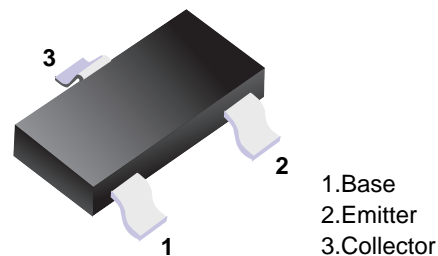


■ NPN Transistors



■ Features

- High current gain bandwidth product.
- power dissipation.(PC=200mW)

■ Simplified outline(SOT-23)

■ Absolute Maximum Ratings Ta = 25 °C

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V <sub>CB0</sub>	30	V
Collector to Emitter Voltage	V <sub>CEO</sub>	15	V
Emitter to Base Voltage	V <sub>EB0</sub>	5	V
Collector Current to Continuous	I <sub>C</sub>	50	mA
Collector Power Dissipation	P <sub>C</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to 150	°C

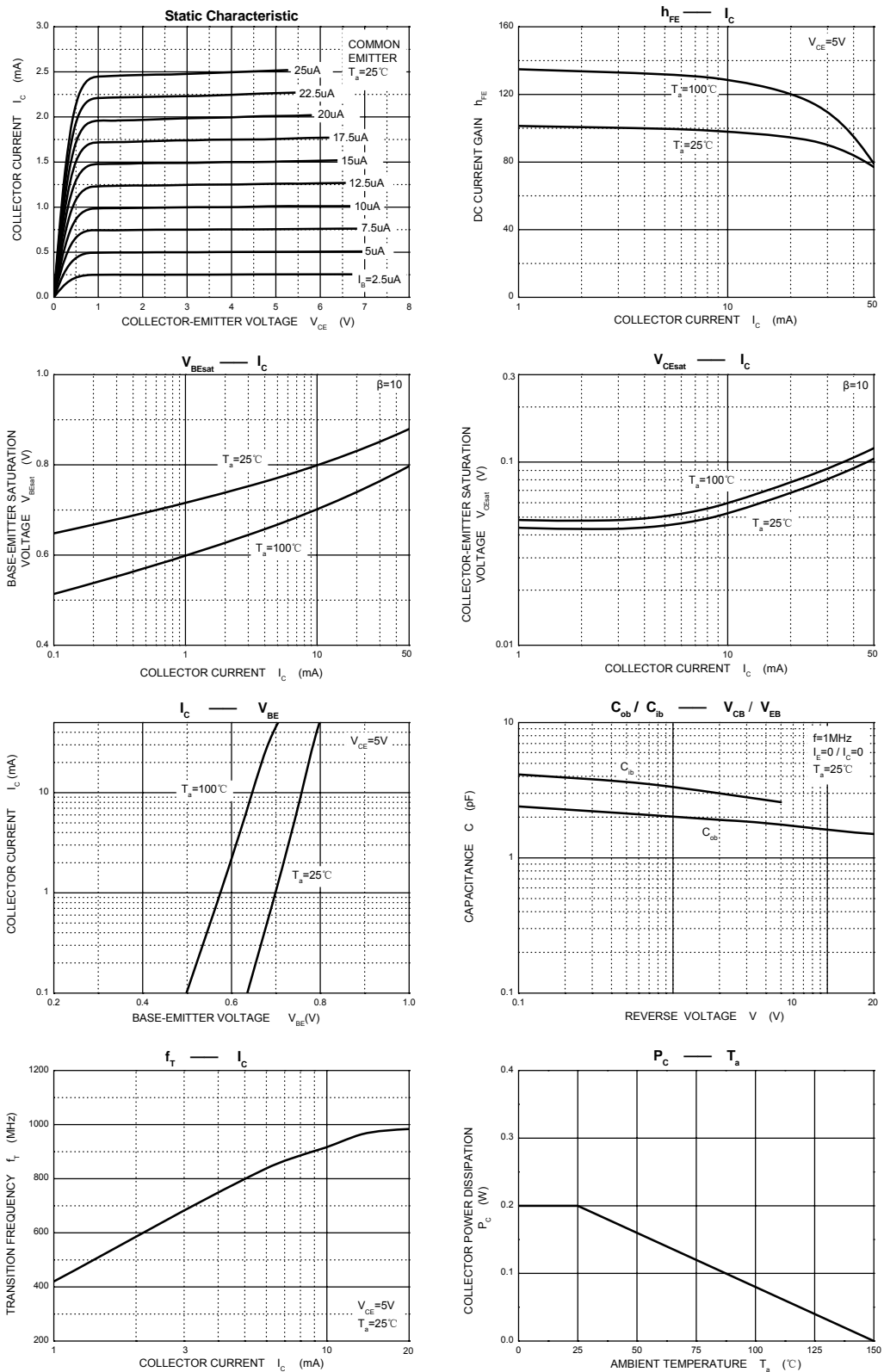
■ Electrical Characteristics Ta = 25

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector to base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100 uA, I <sub>E</sub> =0	30			V
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, I <sub>B</sub> =0	15			V
Emitter to base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100 uA, I <sub>C</sub> =0	5			V
Collector cut to off current	I <sub>CBO</sub>	V <sub>CB</sub> =12V, I <sub>E</sub> =0			0.05	uA
Emitter cut to off current	I <sub>EBO</sub>	V <sub>EB</sub> = 3V, I <sub>C</sub> =0			0.1	uA
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> = 1mA	70		190	
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> = 1mA			0.5	V
Base to emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> = 1mA			1.4	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> = 5mA, f=400MHz	600			MHz

■ Classification of h<sub>FE</sub>

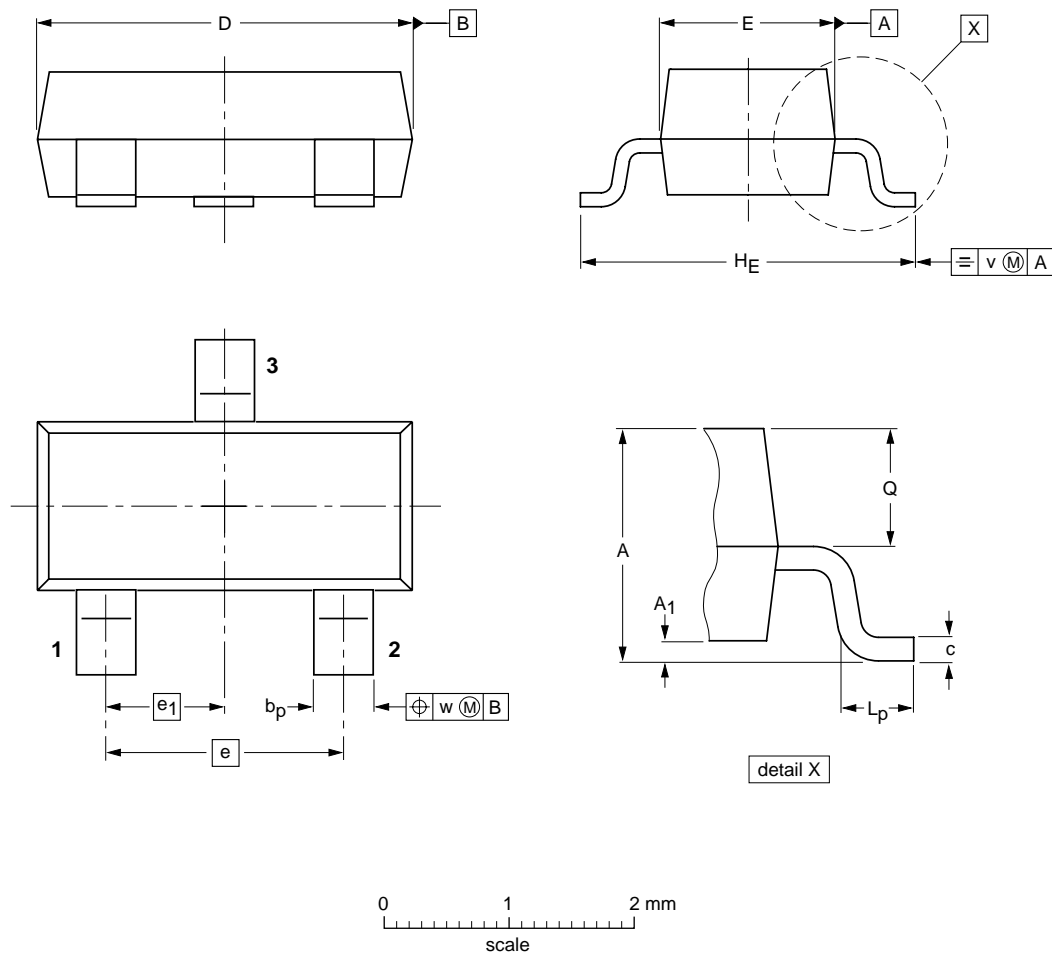
Type	S9018-L	S9018-H
Range	70-105	105-190
Marking	J8	

■ Typical Characteristics



**Package Outline**

**SOT-23**



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

**Summary of Packing Options**

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel, 7" reel	3000	EIA-481-1