

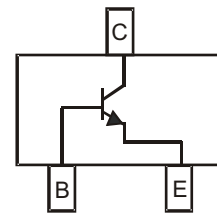
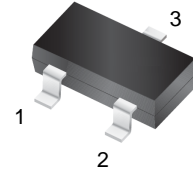
General Purpose Transistors NPN Silicon in SOT-23

Features

- High current capacity in compact package.
- Epitaxial planar type.
- PNP complement: S9012

Mechanical Data

- **Case:** SOT-23 (plastic package).
Lead free; RoHS compliant
- **Molding Compound Flammability Rating:**
UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
260 °C/10 sec. at terminals



Marking :J3

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	°C/W
T_j	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55 ~ +150	°C

Electrical Characteristics

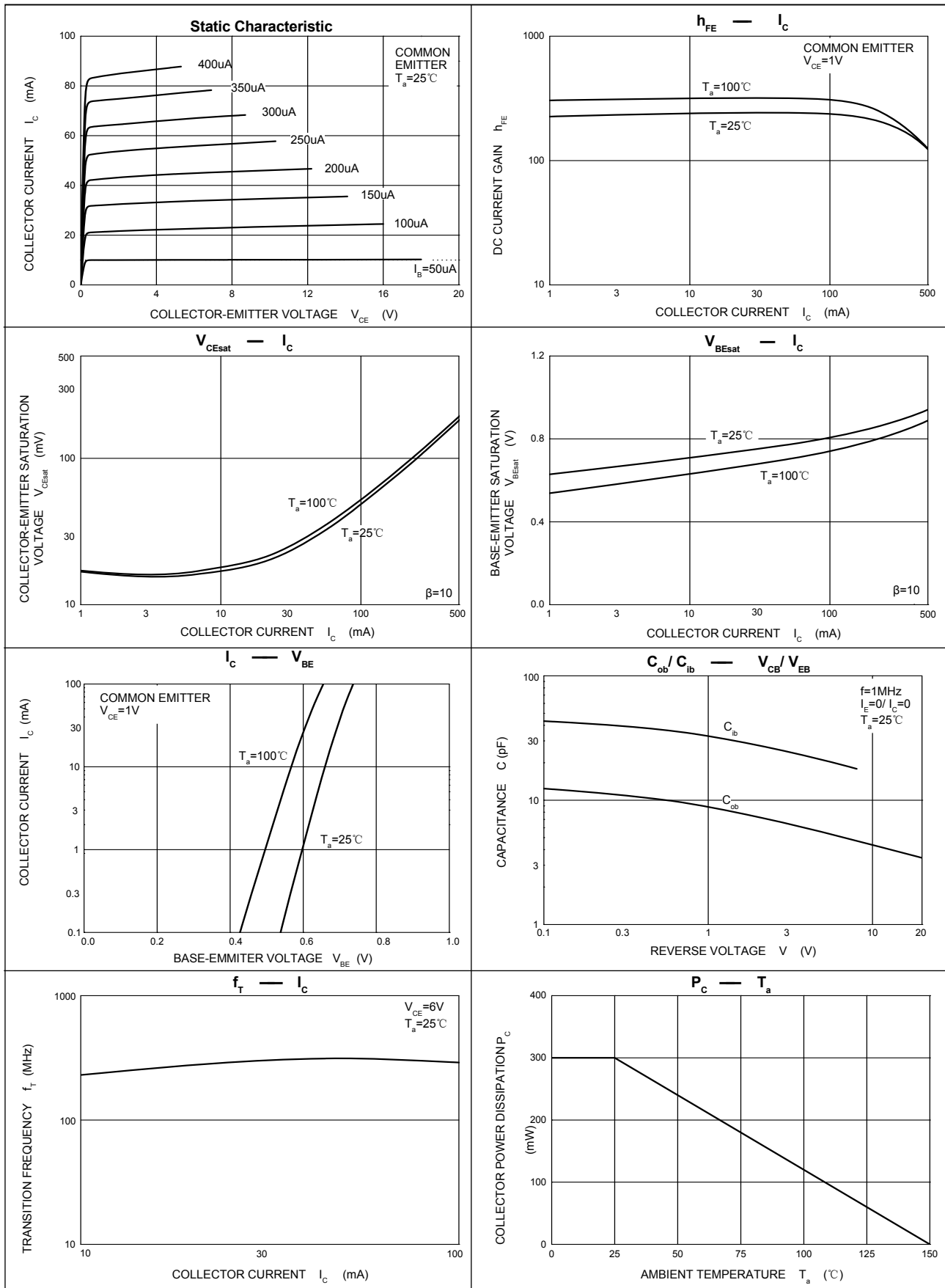
 ($T_A = 25\text{ °C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu A, I_E = 0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1mA, I_B = 0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu A, I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 40V, I_E = 0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE} = 20V, I_B = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = 1V, I_C = 50mA$	120		400	
	$h_{FE(2)}$	$V_{CE} = 1V, I_C = 500mA$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500mA, I_B = 50mA$			1.2	V
Transition frequency	f_T	$V_{CE} = 6V, I_C = 20mA, f = 30MHz$	150			MHz

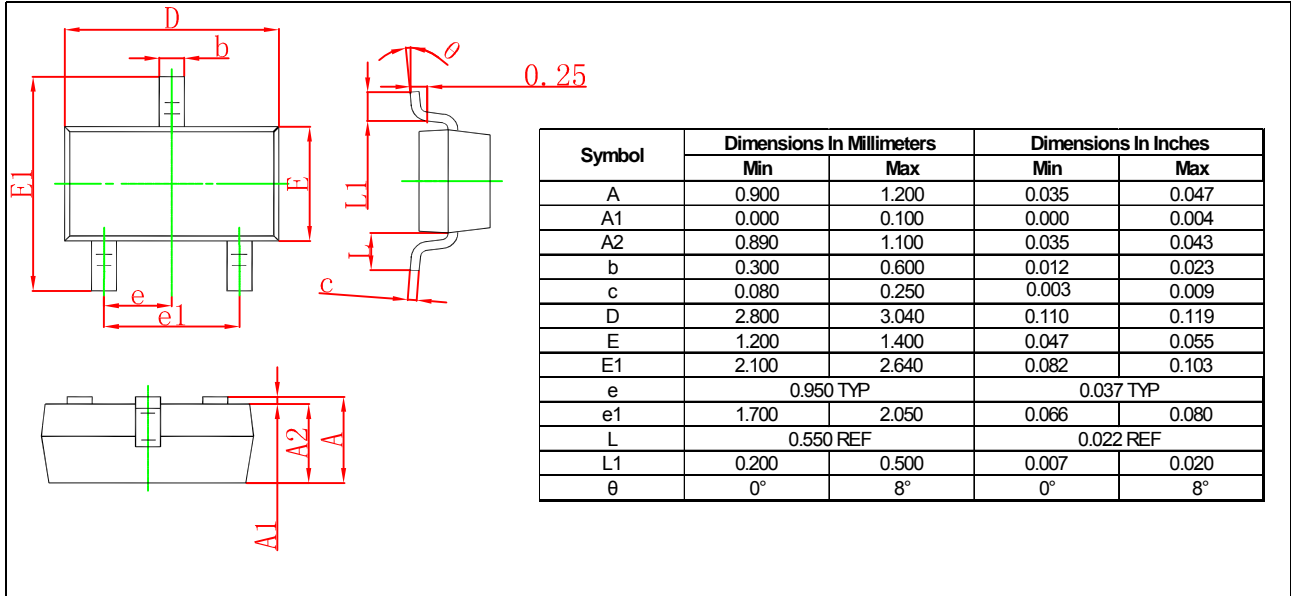
Classification Of $h_{FE(1)}$

Rank	L	H	J
Range	120-200	200-350	300-400

Typical Characteristics ($T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)



Package Dimensions



Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
S9013	SOT-23	Tape and reel	3000pcs / reel	EIA STD RS-481

Revision history

Date	Revision	Changes
10-May-2024	4.0	Update

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