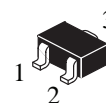


### NPN TRANSISTOR

 Lead(Pb)-Free



**SOT-523(SC-75)**

#### FEATURES:

- \* High current.
- \* Low VCE(sat). VCE(sat).250mV at IC = 200mA / IB = 10mA

#### MAXIMUM RATINGS (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V <sub>CBO</sub>	15	V
Collector-Emitter Voltage	V <sub>CEO</sub>	12	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Current –Continuous	I <sub>C</sub>	500	mA
Collector Dissipation	P <sub>C</sub>	150	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55-150	°C

#### ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	MIN	TYP	MAX	UNIT	
Collect or-base breakdown voltage	I <sub>C</sub> =10μA, I <sub>E</sub> =0	V <sub>(BR)CBO</sub>	15	-	-	V
Collect or-emitter breakdown voltage	I <sub>C</sub> =1mA, I <sub>B</sub> =0	V <sub>(BR)CEO</sub>	12	-	-	V
Emitter- base breakdown voltage	I <sub>E</sub> =10μA, I <sub>C</sub> =0	V <sub>(BR)EBO</sub>	6	-	-	V
Collector cut-off current	V <sub>CB</sub> =15V, I <sub>E</sub> =0	I <sub>CBO</sub>	-	-	0.1	μA
Emitter cut-off current	V <sub>EB</sub> =6V, I <sub>C</sub> =0	I <sub>EBO</sub>	-	-	0.1	μA
DC current gain	V <sub>CE</sub> =2V, I <sub>C</sub> =10mA	h <sub>FE</sub>	270	-	680	-
Collector-emitter saturation voltage	I <sub>C</sub> =200mA, I <sub>B</sub> =10mA	V <sub>CE(sat)</sub>	-	-	0.25	V
Transitio n frequency	V <sub>CE</sub> =2V, I <sub>C</sub> =10mA, f=100MHz	f <sub>T</sub>	-	320	-	MHz
Collect or output capacitance	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz	C <sub>ob</sub>	-	7.5	-	pF

**Marking : BX**

## Typical Characteristics

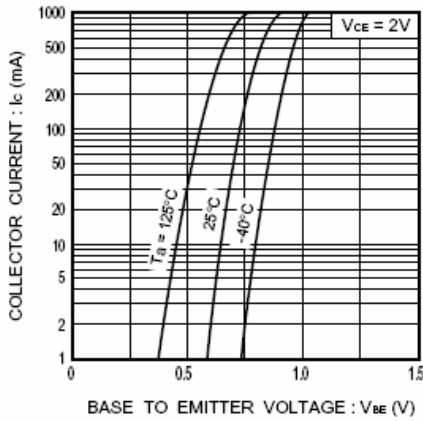


Fig.1 Grounded emitter propagation characteristics

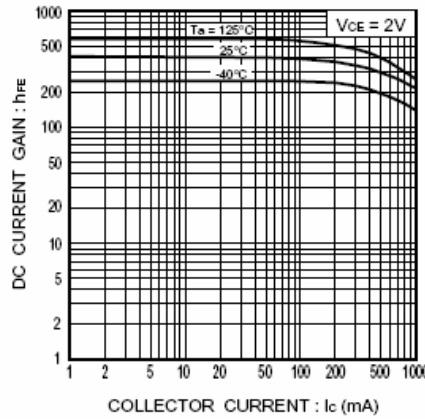


Fig.2 DC current gain vs. collector current

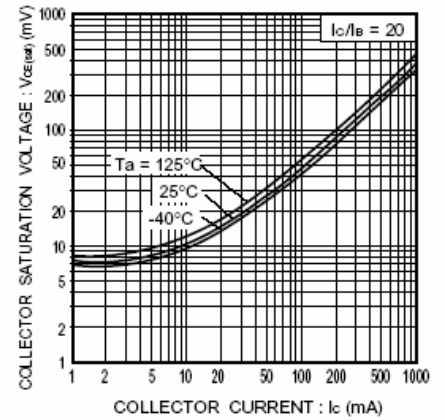


Fig.3 Collector-emitter saturation voltage vs. collector current ( I )

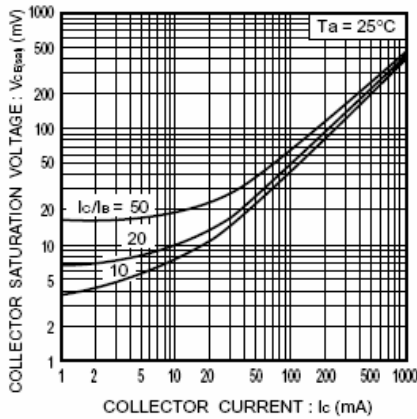


Fig.4 Collector-emitter saturation voltage vs. collector current ( II )

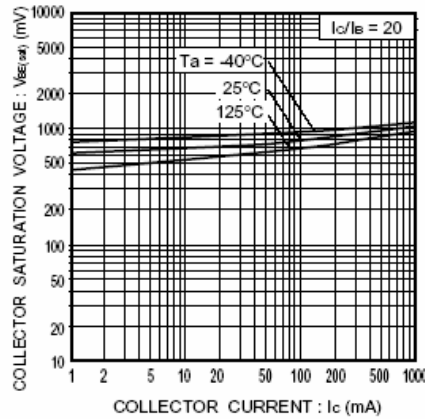


Fig.5 Base-emitter saturation voltage vs. collector current

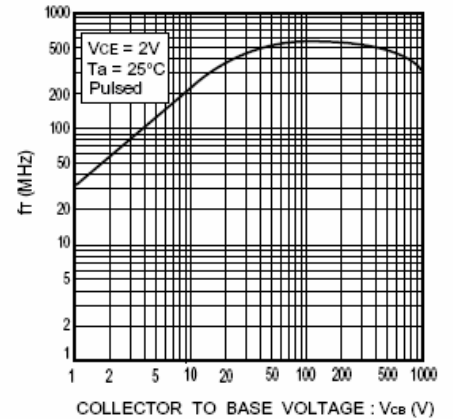


Fig.6 Collector output capacitance Emitter input capacitance vs. base voltage

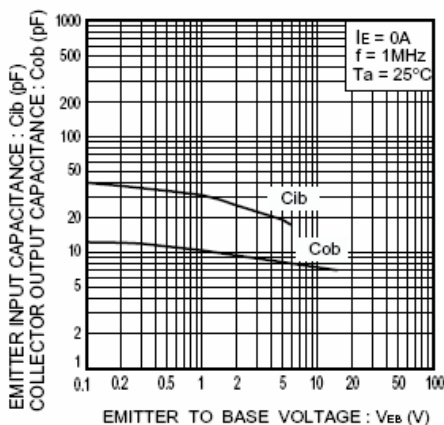
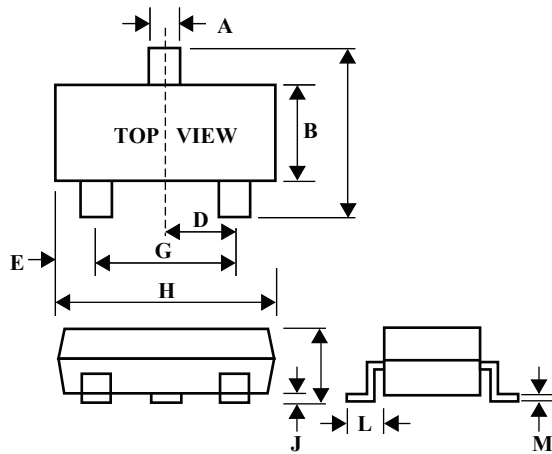


Fig.7 Collector output capacitance vs collector-base voltage Emitter input capacitance vs emitter-base voltage

**SOT-523 Outline Dimensions (SC-75)**

Unit:mm



SOT-523		
Dim	Min	Max
A	0.30	0.50
B	0.70	0.90
C	1.45	1.75
D	-	0.50
E	0.15	0.40
G	0.80	1.00
H	1.40	1.80
J	0.00	0.10
K	0.70	1.00
L	0.37	0.48
M	0.10	0.25