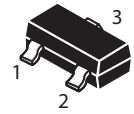
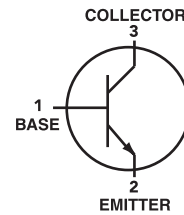


NPN General Purpose Transistors

(Pb) Lead(Pb)-Free



SOT-23

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	25	Vdc
Collector-Base Voltage	V_{CBO}	40	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current-Continuous	I_C	1500	mAdc

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate, (2) $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	625	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	$^\circ\text{C/W}$
Junction and Storage, Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

DEVICE MARKING

SS8050LT1=Y1

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C=0.1\text{ mAdc}, I_B=0$)	$V_{(BR)CEO}$	25	-	Vdc
Collector-Base Breakdown Voltage ($I_C=100\ \mu\text{Adc}, I_E=0$)	$V_{(BR)CBO}$	40	-	Vdc
Emitter-Base Breakdown Voltage ($I_E=100\ \mu\text{Adc}, I_C=0$)	$V_{(BR)EBO}$	6.0	-	Vdc
Collector Cutoff Current ($V_{CE}=20\ \text{Vdc}, I_E=0$)	I_{CEO}	-	0.1	μAdc
Collector Cutoff Current ($V_{CB}=40\ \text{Vdc}, I_E=0$)	I_{CBO}	-	0.1	μAdc
Emitter Cutoff Current ($V_{EB}=5.0\ \text{Vdc}, I_C=0$)	I_{EBO}	-	0.1	μAdc

1.FR-5=1.0 x 0.75 x 0.062 in

2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted) (Continued)

Characteristics	Symbol	Min	Max	Unit
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ON CHARACTERISTICS

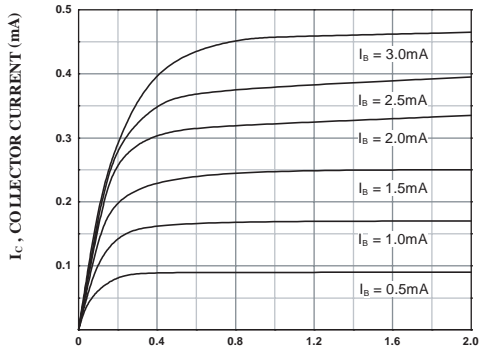
DC Current Gain ($I_C=100\text{ mA}$, $V_{CE}=1.0\text{ V}$) ($I_C=800\text{ mA}$, $V_{CE}=1.0\text{ V}$)	$h_{FE}^{(1)}$ $h_{FE}^{(2)}$	120 40	350 -	- -
Collector-Emitter Saturation Voltage ($I_C=800\text{ mA}$, $I_B=80\text{ mA}$)	$V_{CE(sat)}$	-	0.5	Vdc
Base-Emitter Saturation Voltage ($I_C=800\text{ mA}$, $I_B=80\text{ mA}$)	$V_{BE(sat)}$	-	1.2	Vdc

SMALL-SIGNAL CHARACTERISTICS

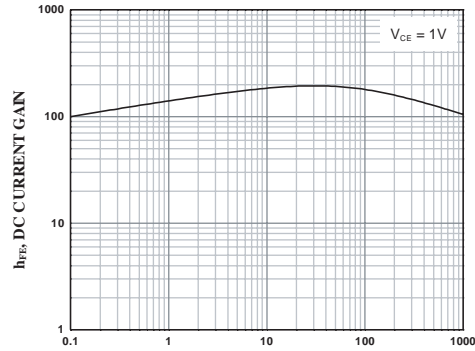
Current-Gain-Bandwidth Product ($I_C=50\text{ mA}$, $V_{CE}=10\text{ V}$, $f=30\text{ MHz}$)	f_T	100	-	MHz
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CLASSIFICATION OF $h_{FE(1)}$

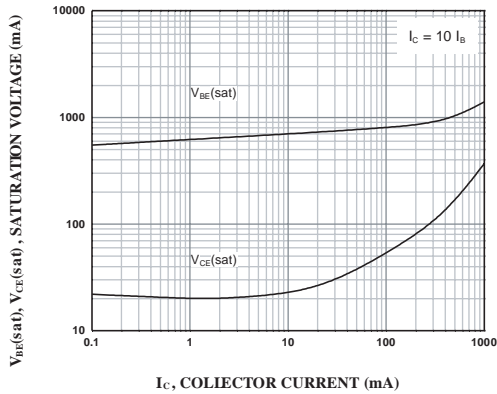
Rank	L	H
Range	120-200	200-350



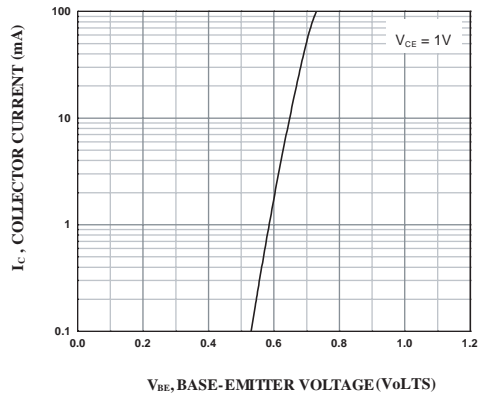
V_{CE} , COLLECTOR-EMITTER VOLTAGE (Volts)
FIG.1 Static Characteristic



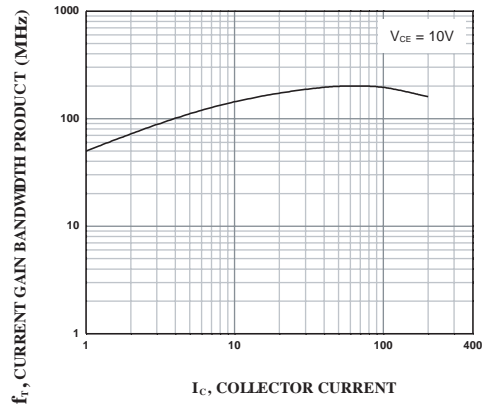
I_C , COLLECTOR CURRENT (mA)
FIG.2 DC Current Gain



$V_{BE(sat)}$, $V_{CE(sat)}$, SATURATION VOLTAGE (mV)
**FIG.3 Base-Emitter Saturation Voltage
 Collector-Emitter Saturation Voltage**

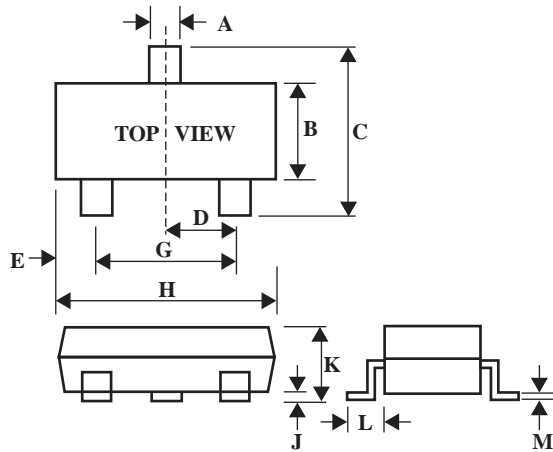


V_{BE} , BASE-EMITTER VOLTAGE (Volts)
FIG.4 Base-Emitter On Voltage



f_T , CURRENT GAIN BANDWIDTH PRODUCT (MHz)
FIG.5 Current Gain Bandwidth Product

SOT-23 Outline Dimension



SOT-23		
Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25