



### Features

- Epoxy meets UL-94 V-0 flammability rating.
- Moisture sensitivity Level 1.

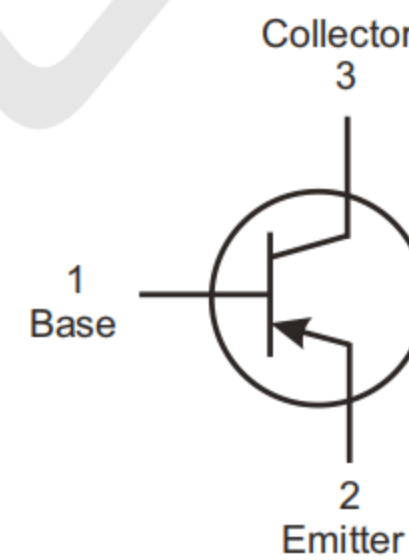
### Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102.

### Circuit Diagram



Marking: ZE Or 2L



### Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Conditions	Symbol	Value	Unit
Collector-base voltage	$I_C = -100\mu A, I_E = 0$	$V_{CBO}$	-180	V
Collector-emitter voltage	$I_C = -1mA, I_B = 0$	$V_{CEO}$	-160	V
Emitter-base voltage	$I_E = -10\mu A, I_C = 0$	$V_{EBO}$	-6	V
Collector current		$I_C$	-600	mA
Collector power dissipation		$P_C$	300	mW
Operation junction temperature		$T_J$	150	°C
Storage temperature range		$T_{STG}$	-55 to +150	°C
Thermal resistance from junction to ambient		$R_{\theta JA}$	417	°C/W



**Electrical Characteristics** (TA=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-base voltage	V <sub>CB0</sub>	I <sub>C</sub> = -100μAdc, I <sub>E</sub> = 0	-180			V
Collector-emitter voltage	V <sub>CEO</sub>	I <sub>C</sub> = -1mAdc, I <sub>B</sub> = 0	-160			V
Emitter-base voltage	V <sub>EB0</sub>	I <sub>E</sub> = -10μAdc, I <sub>C</sub> = 0	-6			V
Collector-base cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> = -120Vdc			-50	nA
Emitter-emitter cut-off current	I <sub>EB0</sub>	V <sub>EB</sub> = -4Vdc			-50	nA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> = -5Vdc, I <sub>C</sub> = -1mA	80			
	h <sub>FE(2)</sub>	V <sub>CE</sub> = -5Vdc, I <sub>C</sub> = -10mA	100		300	
	h <sub>FE(3)</sub>	V <sub>CE</sub> = -5Vdc, I <sub>C</sub> = -50mA	50			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -10mA, I <sub>B</sub> = -1mA			-0.2	V
		I <sub>C</sub> = -50mA, I <sub>B</sub> = -5mA			-0.5	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -10mA, I <sub>B</sub> = -1mA			-1.0	V
		I <sub>C</sub> = -50mA, I <sub>B</sub> = -5mA			-1.0	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -5Vdc, I <sub>C</sub> = -10mAdc, f = 30MHz	100		300	MHz

**Typical Performance Characteristics** (T<sub>A</sub>=25°C unless otherwise Specified)

Fig.1 - Static Characteristic

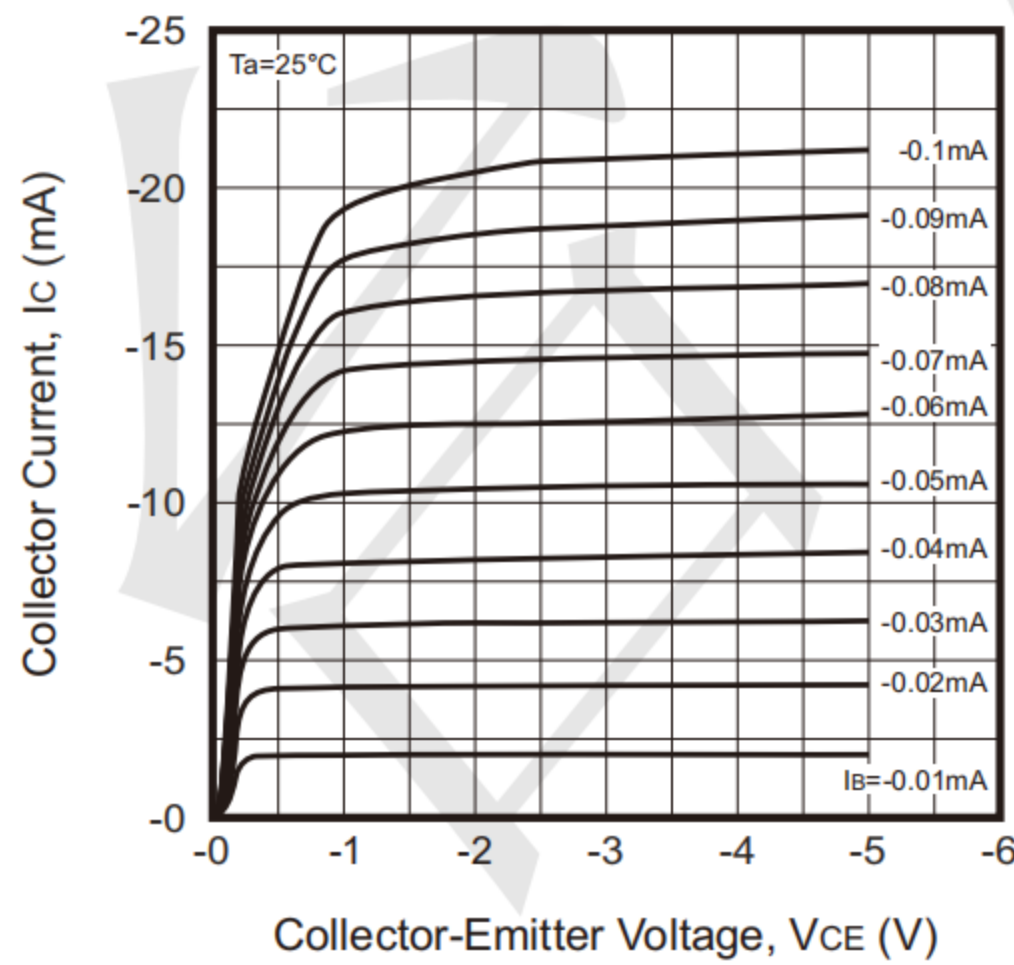
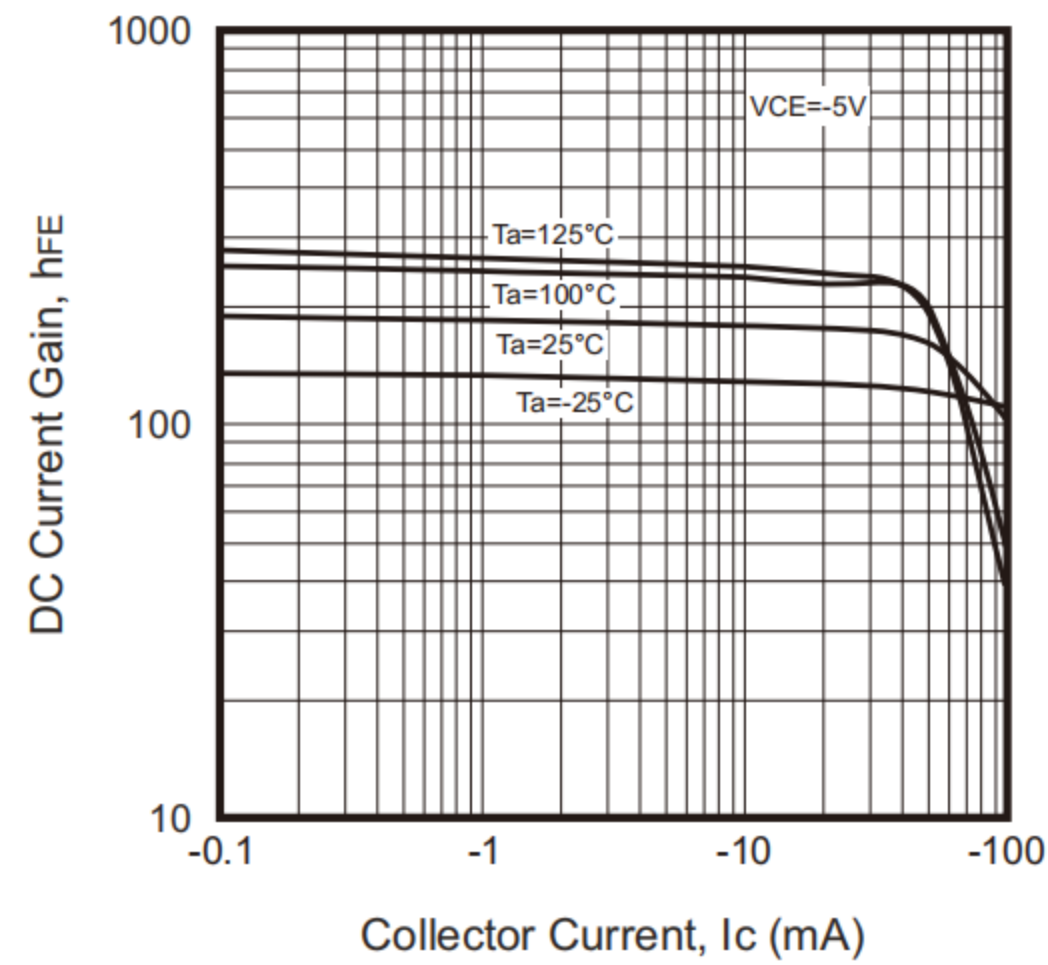


Fig.2 - DC Current Gain





Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)

[www.sot23.com.tw](http://www.sot23.com.tw)

Fig.3 - Collector-Emitter Saturation Voltage

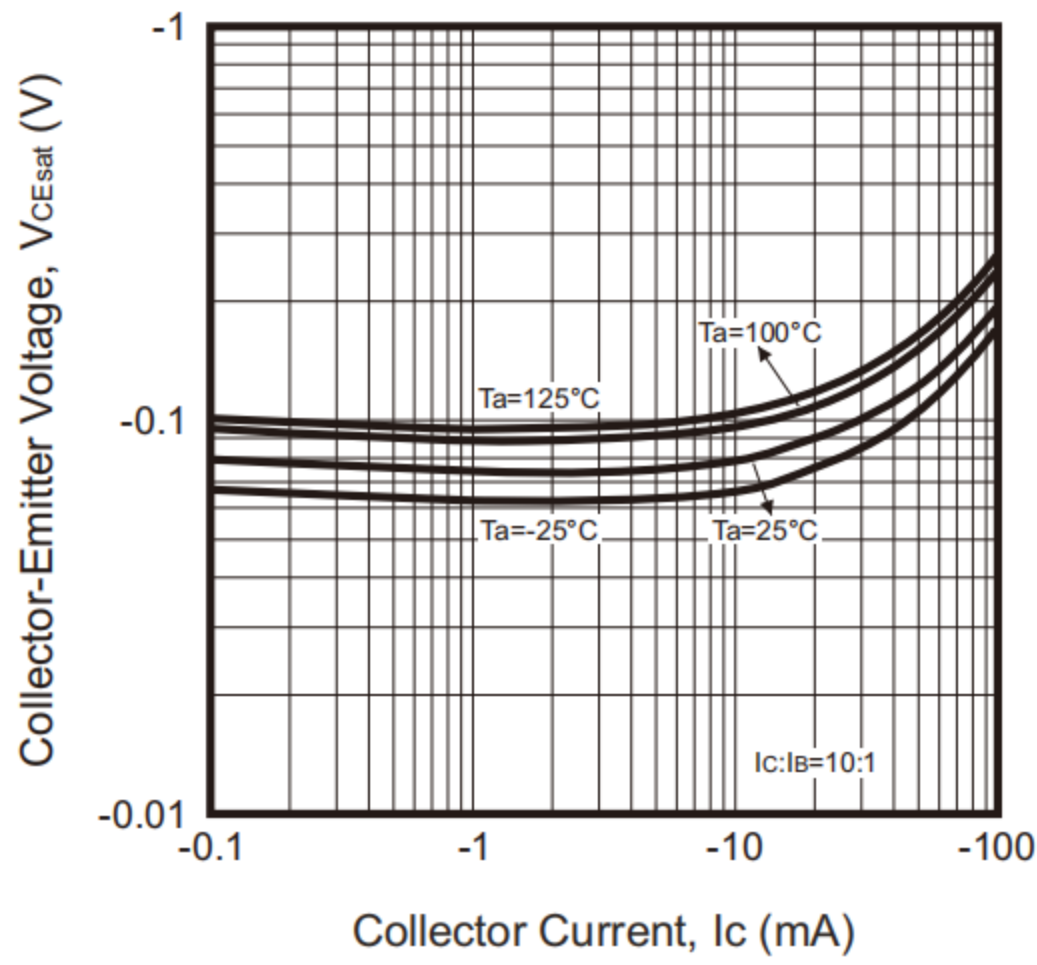


Fig.4 - Base-Emitter Saturation Voltage

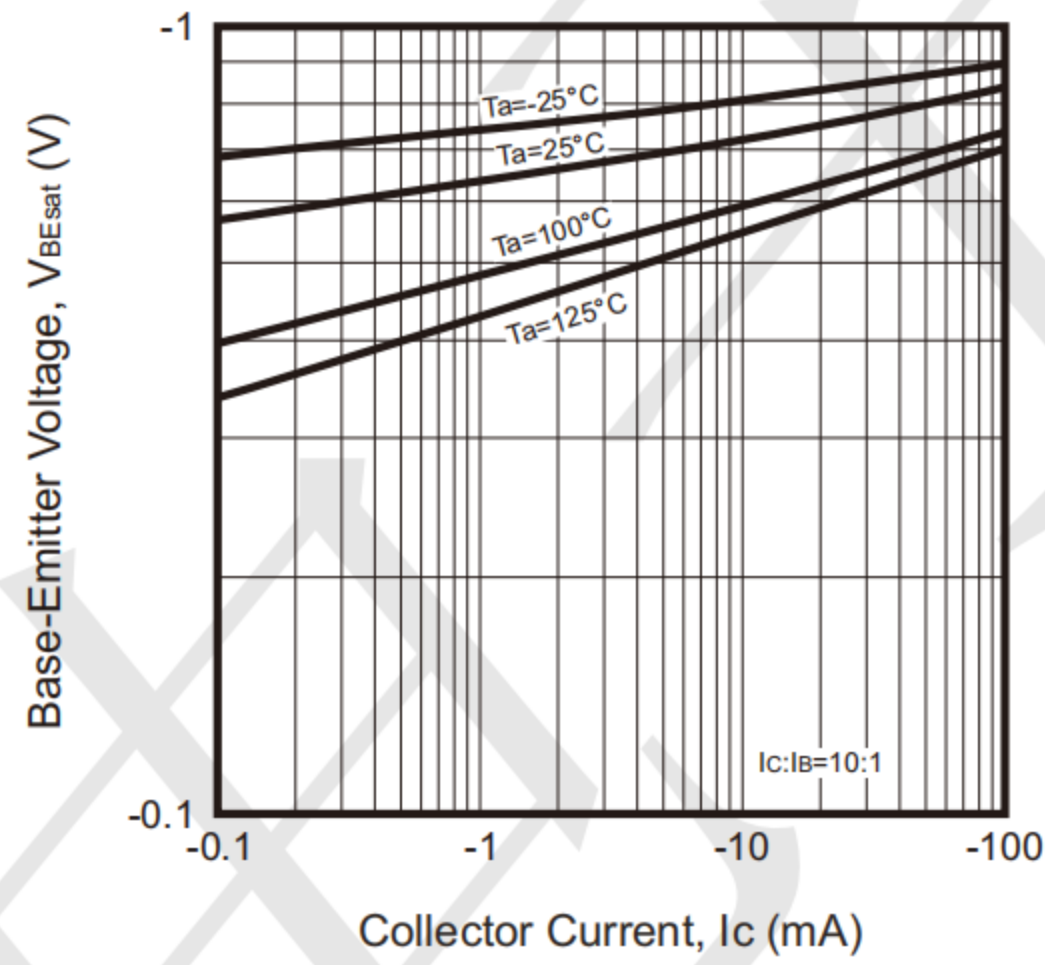


Fig.5 - Base-Emitter on Voltage

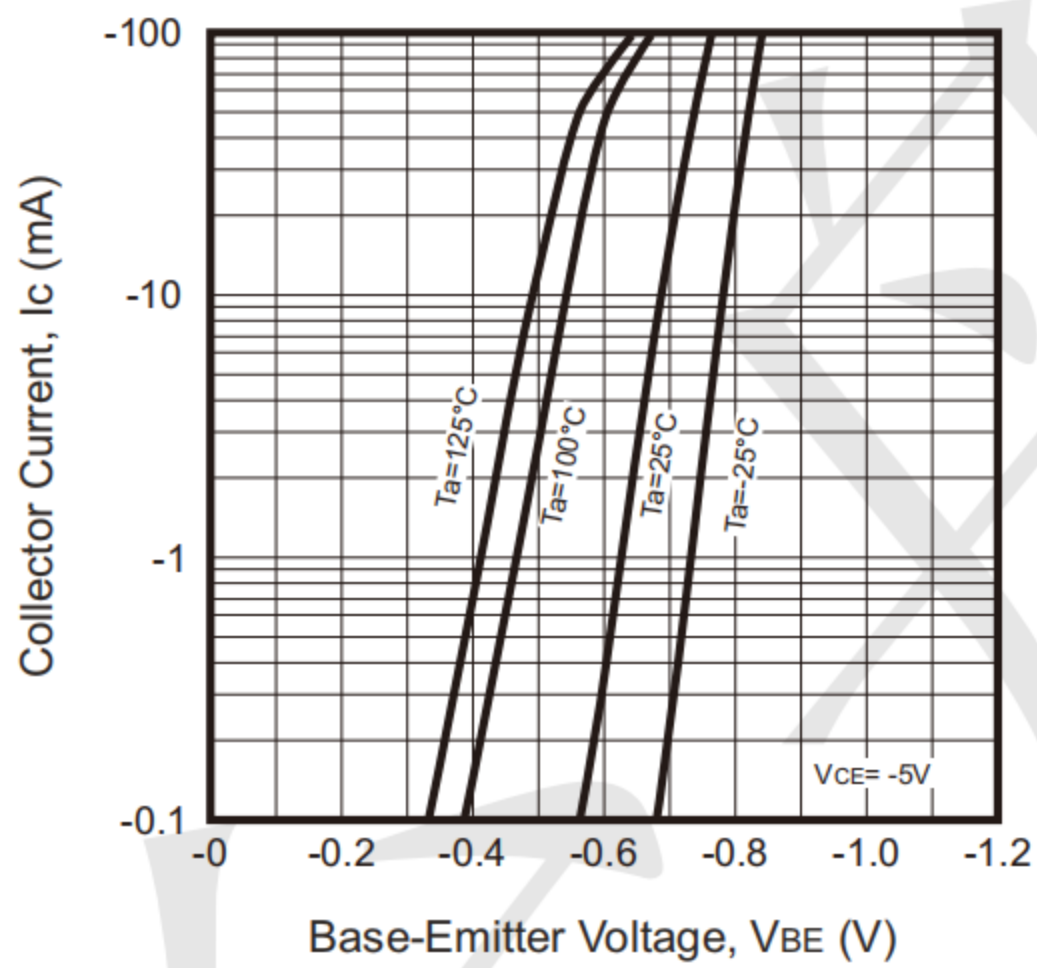


Fig.6 -  $C_{ob}/C_{ib} - V_{CB}/V_{EB}$

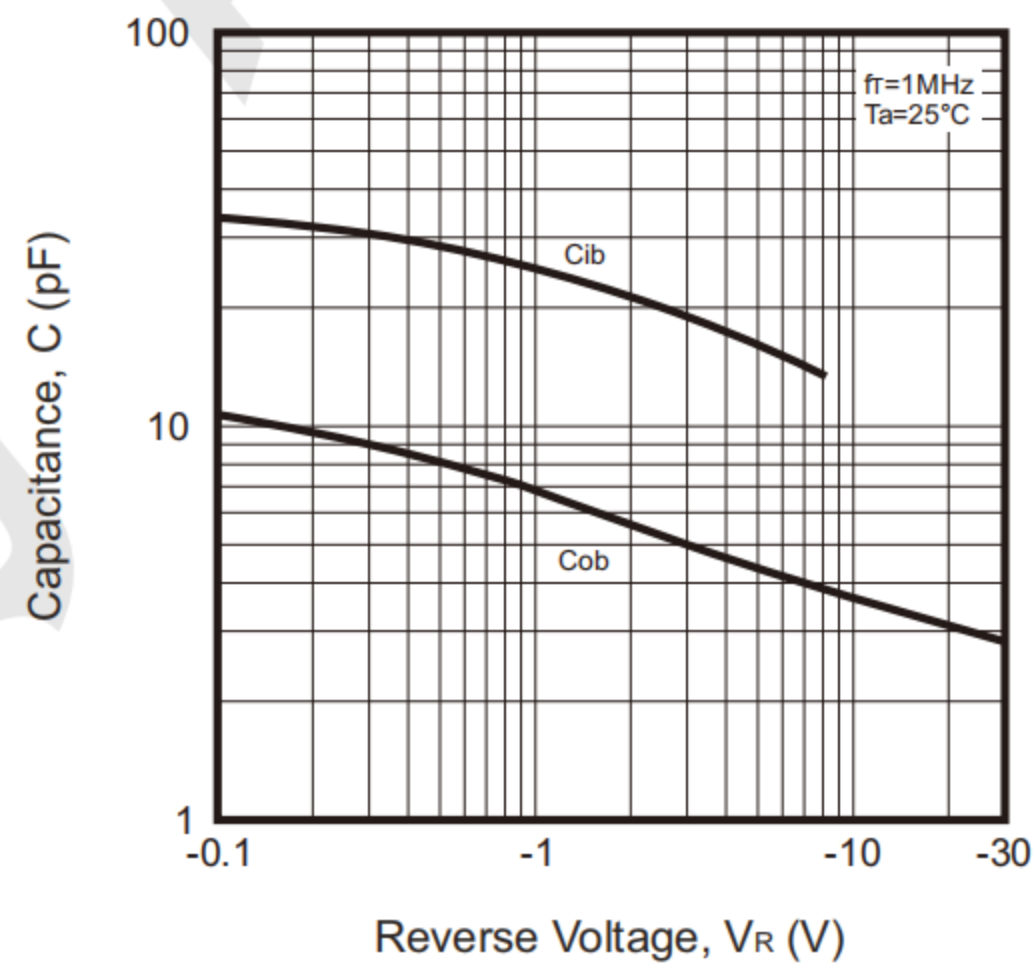
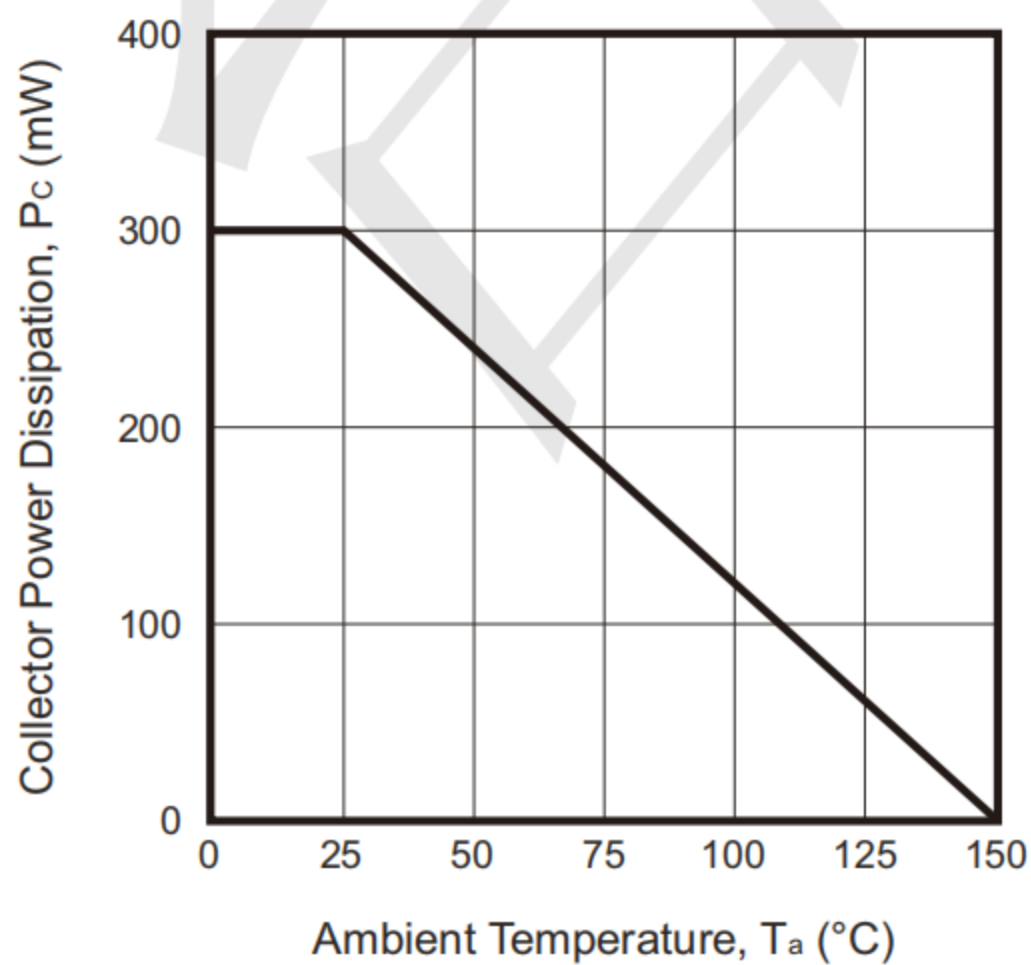
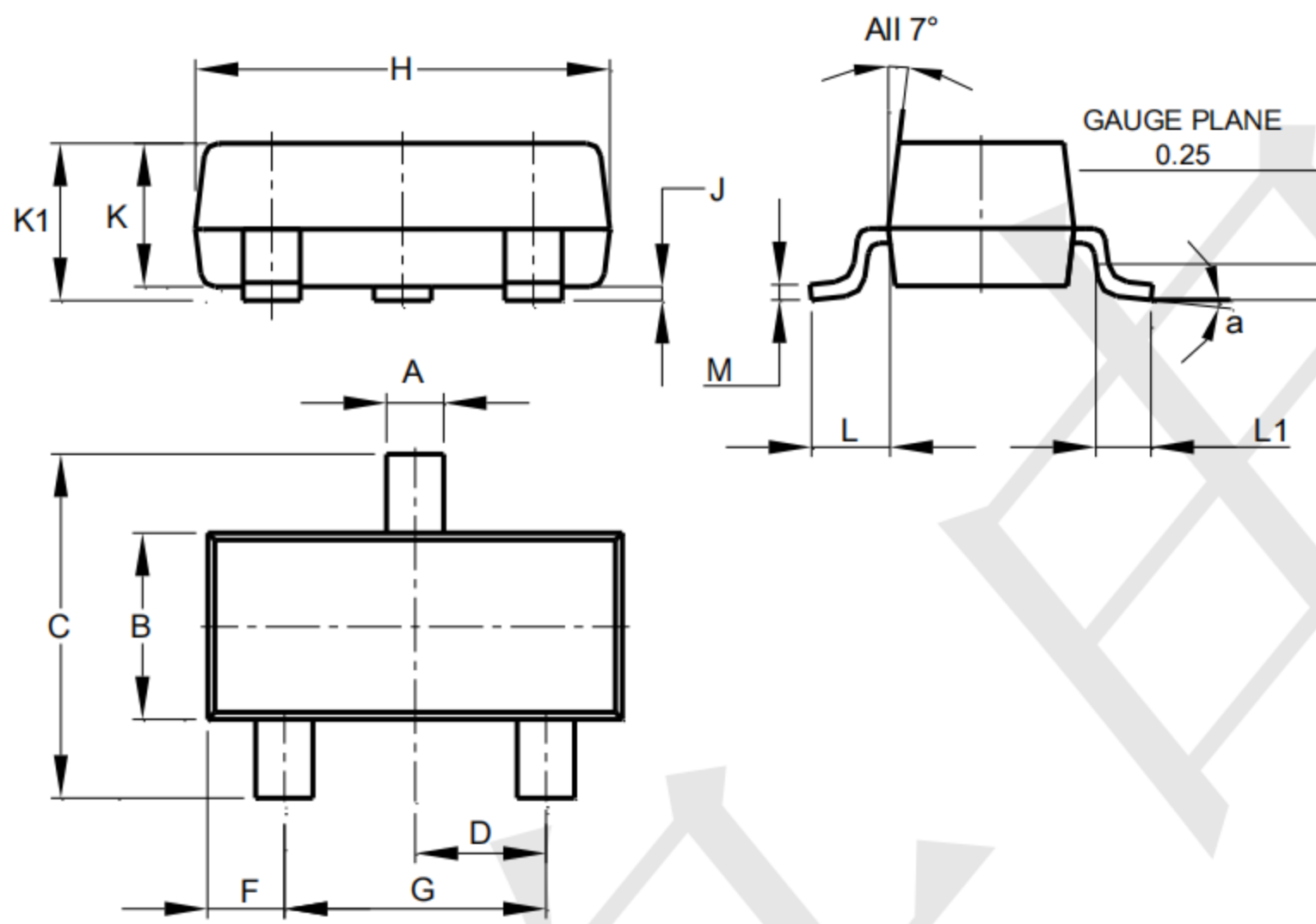


Fig.7 - Collector Power Derating Curve



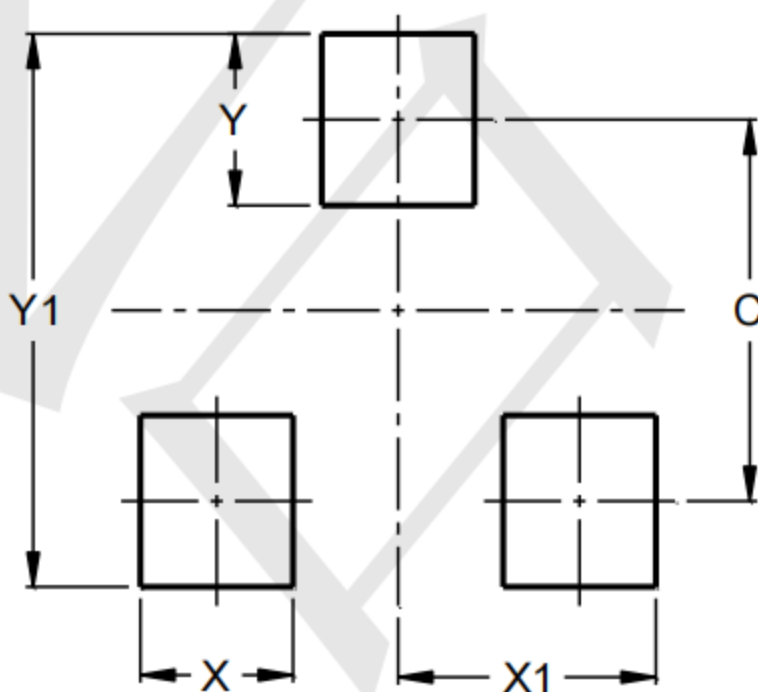


**Outline Drawing - SOT23**



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

**Land Pattern - SOT23**



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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