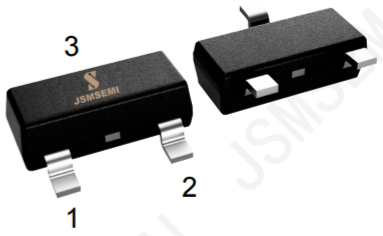
FEATURES

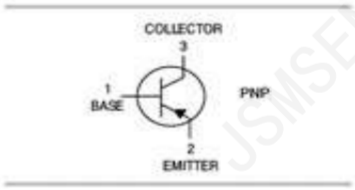
- Epitaxial planar die construction.
- Complementary NPN type available (MMBTA42).
- Ideal for medium power amplification and switching.



SOT-23

APPLICATIONS

- High voltage driver applications.



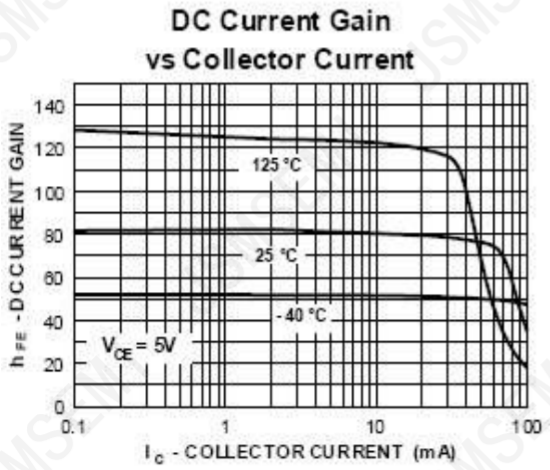
MAXIMUM RATING @ Ta=25℃ unless otherwise specified

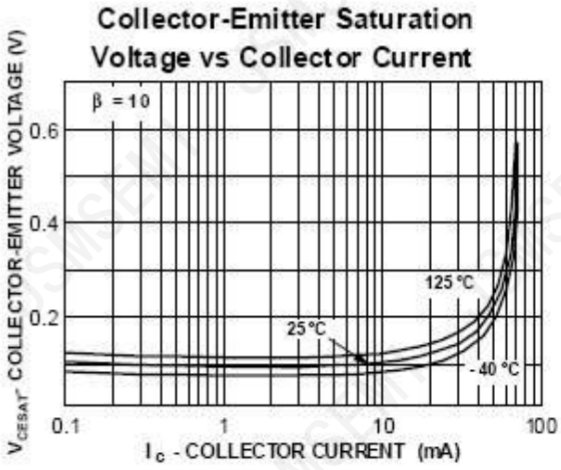
Symbol	Parameter	Value	UNIT
V_{CBO}	collector-base voltage	-300	V
V_{CEO}	collector-emitter voltage	-300	V
V_{EBO}	emitter-base voltage	-5	V
I_C	collector current (DC)	-0.5	A
$R_{\theta JA}$	Thermal resistance,junction to ambient	417	°C/W
P_C	Collector dissipation	0.3	W
T_j , T_{stg}	junction and storage temperature	-55 to +150	°C

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

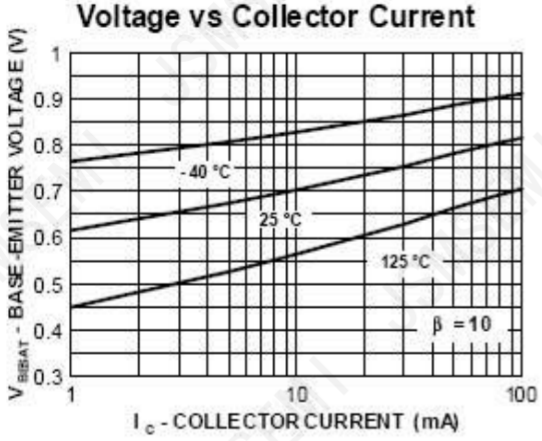
Symbol	Parameter	Test conditions	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=-100μA,I_E=0	-300		
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=-1mA,I_B=0	-300		
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=-100μA,I_C=0	-5		
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = -200V	-	-0.25	μA
I_{EBO}	emitter cut-off current	I_C = 0; V_{EB} = -3V	-	-0.1	μA
h_{FE}	DC current gain	V_{CE} = -10V; I_C= -1mA V_{CE} = -10V;I_C= -10mA V_{CE} = -10V;I_C= -30mA	25 40 25	-	
$V_{CE(sat)}$	collector-emitter saturation voltage	I_C = -20mA; I_B = -2mA	-	-0.5	V
$V_{BE(sat)}$	base-emitter saturation voltage	I_C = -20mA; I_B = -2mA	-	-0.9	V
C_{ob}	Collector output capacitance	V_{CB}=-20V,f=1.0MHz	-	6.0	pF
f_T	transition frequency	I_C = -10mA; V_{CE} = -20V; f = 100MHz	50	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

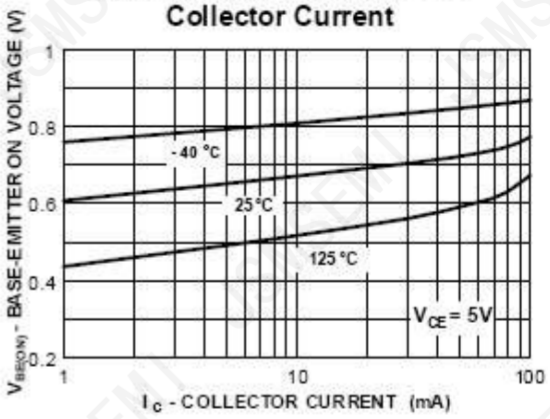




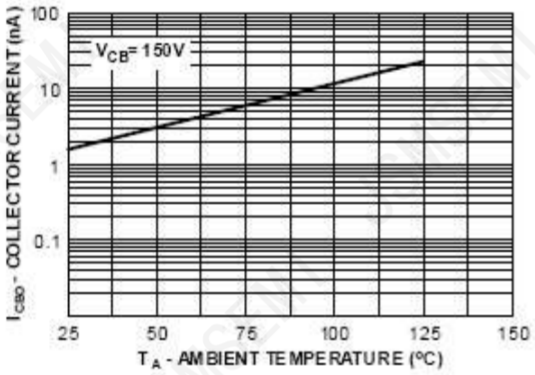
Base-Emitter Saturation Voltage vs Collector Current



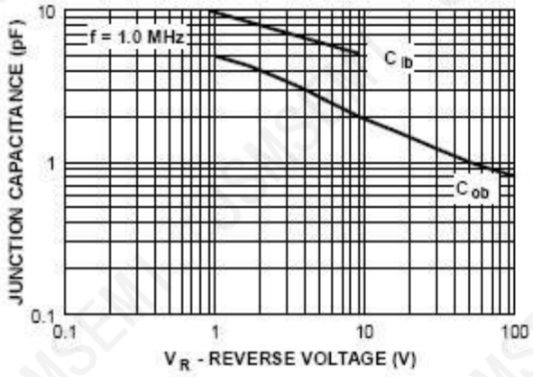
Base-Emitter ON Voltage vs Collector Current



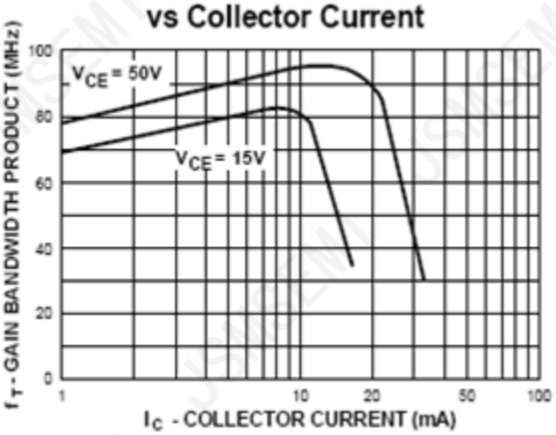
Collector-Cutoff Current vs Ambient Temperature



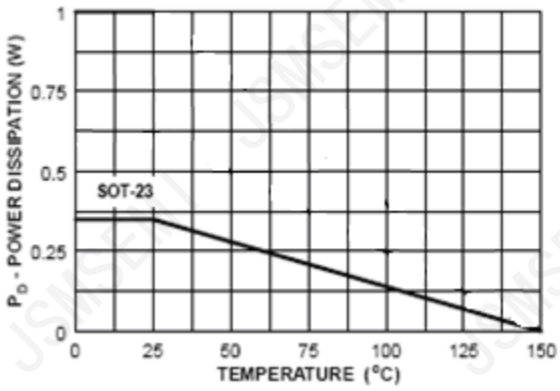
Junction Capacitance vs Reverse Bias Voltage



Gain Bandwidth Product vs Collector Current

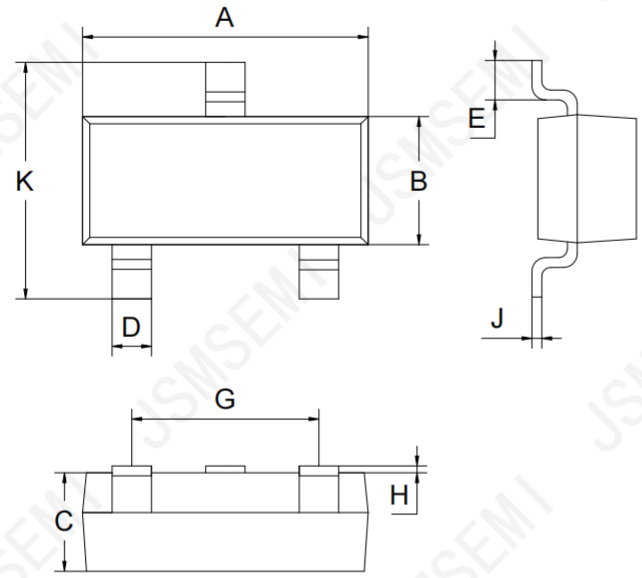


Power Dissipation vs Ambient Temperature



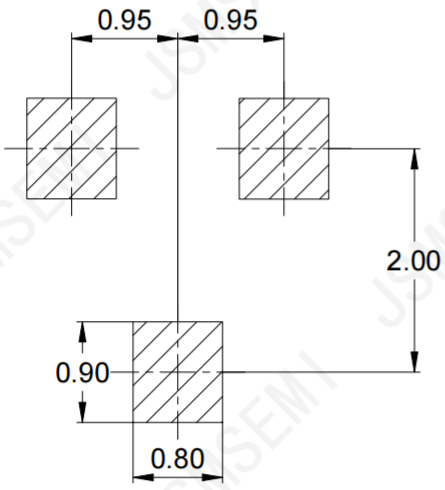
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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