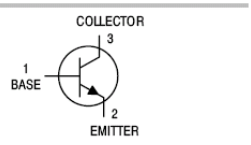
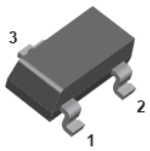
Silicon Epitaxial Planar Transistor **TMMBTH10**

FEATURES

- High transition frequency.
- Power dissipation. (P_C=350mW)
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF





SOT-23

APPLICATIONS

- VHF/UHF Transistor

ORDERING INFORMATION

Type No.	Marking	Package Code
TMMBTH10	3EM	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

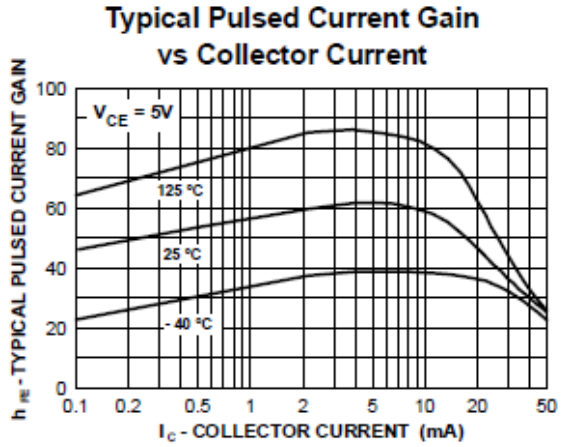
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current -Continuous	50	mA
P_C	Collector Dissipation	350	mW
T_J, T_{STG}	Junction and Storage Temperature	-55 to +150	℃

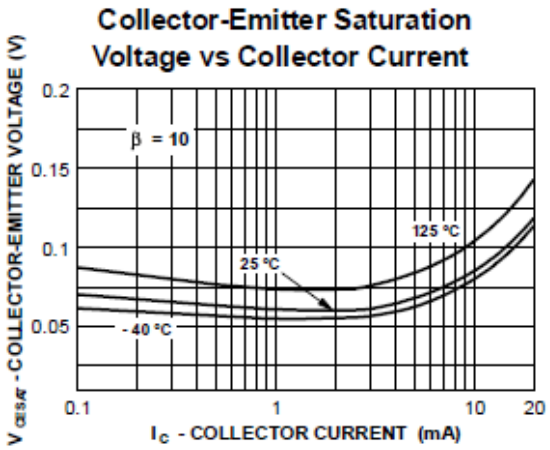
Silicon Epitaxial Planar Transistor **TMMBTH10**

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	30		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=10μA,I_C=0	3		V
Collector cut-off current	I_{CBO}	V_{CB}=25V,I_E=0		0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=2V,I_C=0		0.1	μA
DC current gain	h_{FE}	V_{CE}=10V,I_C=4.0mA	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=4.0mA, I_B= 0.4mA		0.5	V
Base-emitter on voltage	$V_{BE(on)}$	I_C=4.0mA, V_{CE}=10V		0.95	V
Transition frequency	f_T	V_{CE}=10V, I_C= 4.0mA f=100MHz	650		MHz
Collector-Base Capacitance	C_{cb}	V_{CB}=10V,I_E=0,f=1.0MHz		0.7	pF
Collector-Base Feedback Capacitance	C_{rb}	V_{CB}=10V,I_E=0,f=1.0MHz	0.35	0.65	pF
Collector Base Time Constant	rb’ C_C	I_C=4mA,V_{CB}=10V f=31.8MHz		9.0	pS

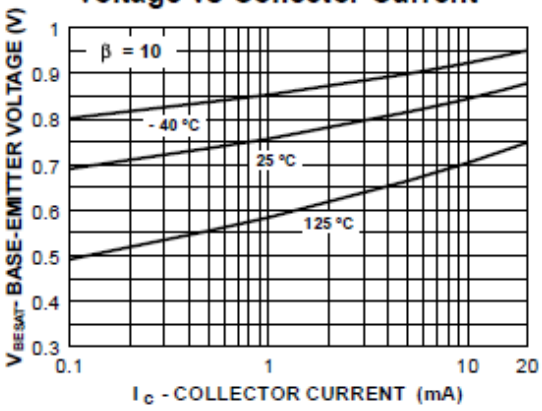
TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified



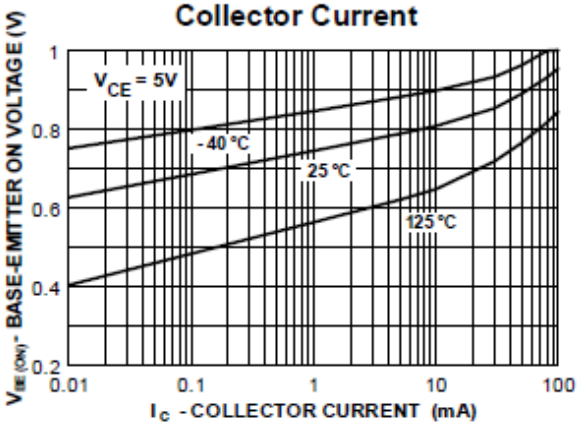


Silicon Epitaxial Planar Transistor **TMMBTH10**

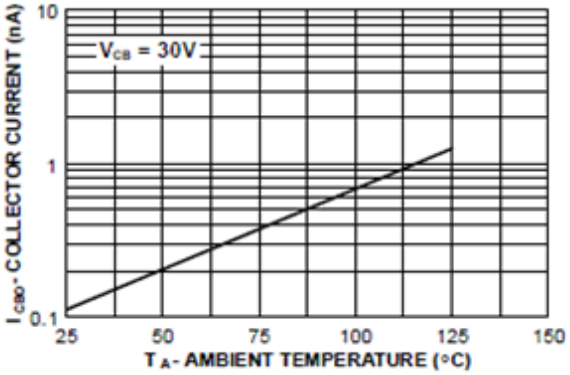
Base-Emitter Saturation Voltage vs Collector Current



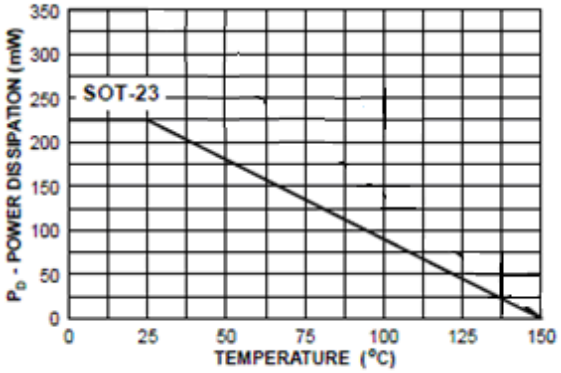
Base-Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature



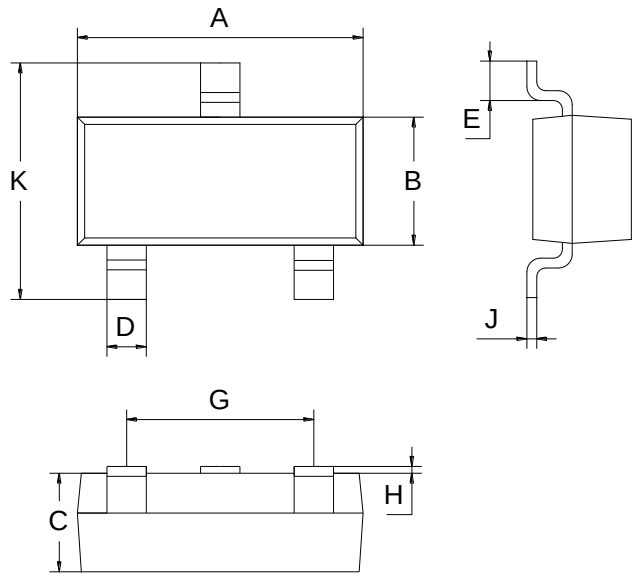
Power Dissipation vs Ambient Temperature



Silicon Epitaxial Planar Transistor **TMMBTH10**

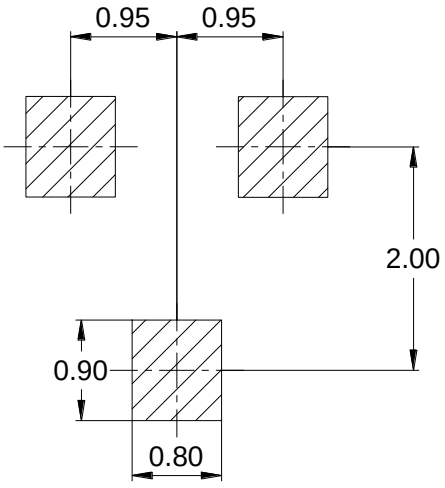
PACKAGE OUTLINE

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

PACKAGE INFORMATION

Device	Package	Shipping
TMMBTH10	SOT-23	3000 pcs / Tape & Reel