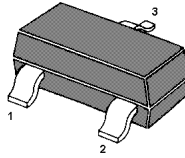


TRANSISTOR (NPN)

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

MMBTA13 MARKING: K2D
MMBTA14 MARKING: K3D

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

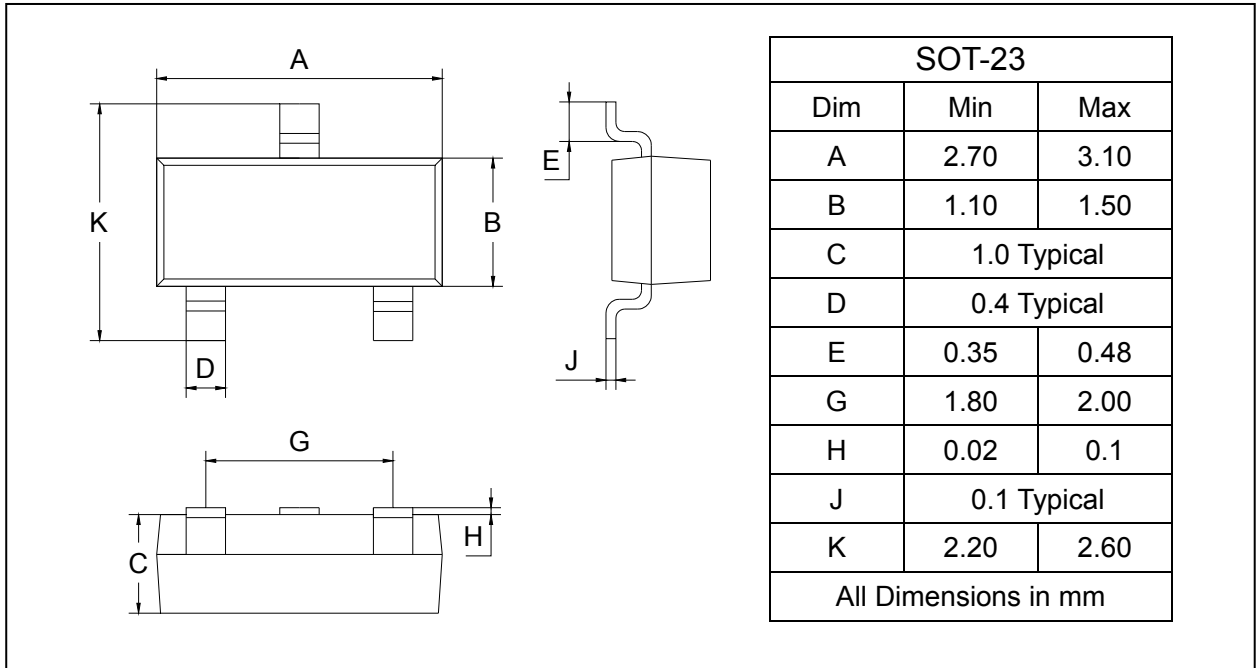
	Symbol	Min.	Max.	Unit
DC Current Gain				
at I _C =10mA, V _{CE} =5V MMBTA13	h _{FE}	5,000	-	-
at I _C =10mA, V _{CE} =5V MMBTA14	h _{FE}	10,000	-	-
at I _C =100mA, V _{CE} =5V MMBTA13	h _{FE}	10,000	-	-
at I _C =100mA, V _{CE} =5V MMBTA14	h _{FE}	20,000	-	-
Collector Cutoff Current at V _{CB} =30V	I _{CBO}	-	0.1	μA
Emitter Cutoff Current at V _{EB} =10V	I _{EBO}	-	0.1	μA
Collector Emitter Breakdown Voltage at I _C =100μA	V _{(BR)CES}	30	-	V
Collector Saturation Voltage at I _C =100mA, I _B =0.1mA	V _{CE(sat)}	-	1.5	V
Base On Voltage at I _C =100mA, V _{CE} =5V	V _{BE(on)}	-	2	V
Current Gain – Bandwidth Product at I _C =10mA, V _{CE} =10V, f=100MHz	f _T	125	-	MHz

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

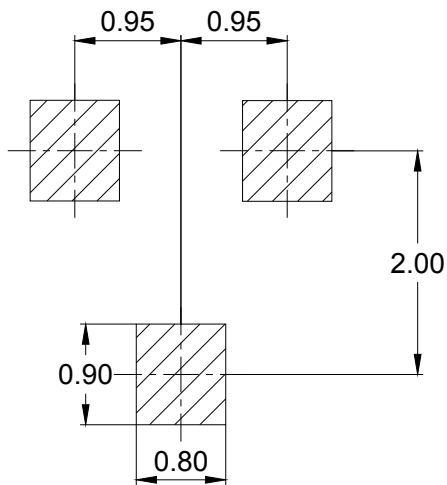
	Symbol	Value	Unit
Collector Emitter Voltage	V _{CES}	30	V
Collector Base Voltage	V _{CBO}	30	V
Emitter Base Voltage	V _{EBO}	10	V
Collector Current	I _C	500	mA
Total Device Dissipation Derate above 25 °C	P _{tot}	200 2.8	mW mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	357	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _S	-55 to +150	°C

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



Unit : mm

Typical Characteristics

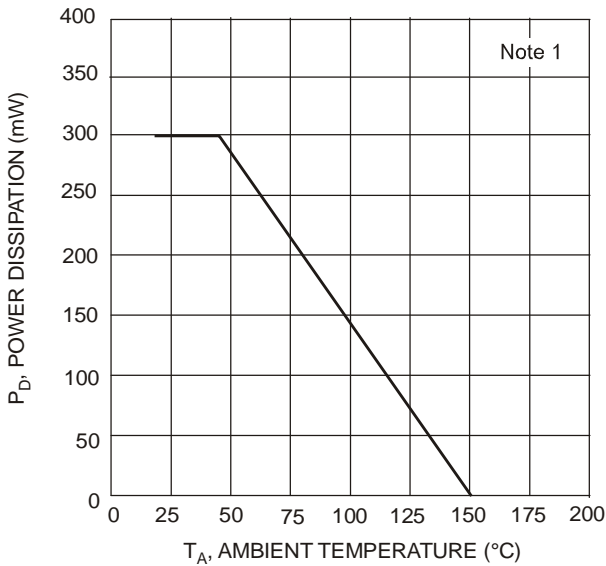


Fig. 1, Max Power Dissipation vs Ambient Temperature

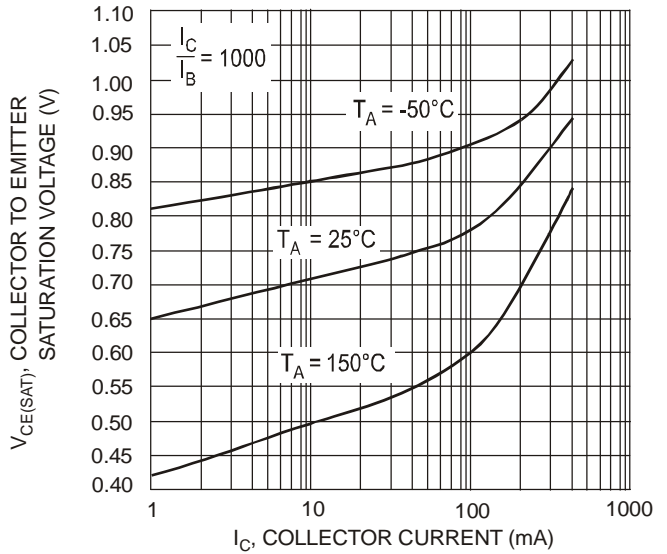


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

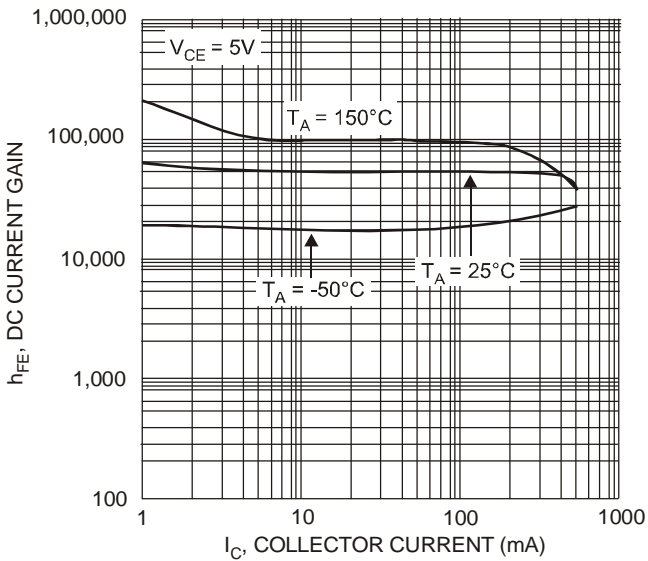


Fig. 3, DC Current Gain vs Collector Current

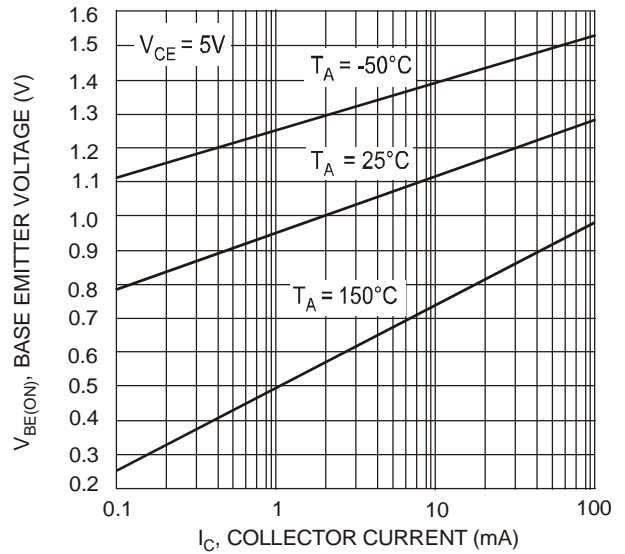


Fig. 4, Base Emitter Voltage vs. Collector Current

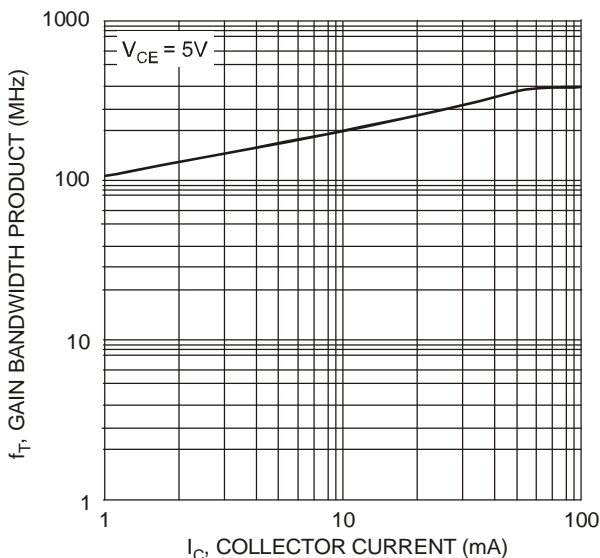


Fig. 5, Gain Bandwidth Product vs Collector Current