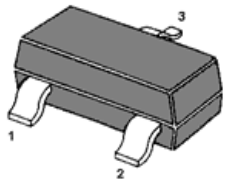
MMBTA13

NPN Silicon Epitaxial Planar Darlington Transistor



1.Base 2.Emitter 3.Collector
SOT-23 Plastic Package

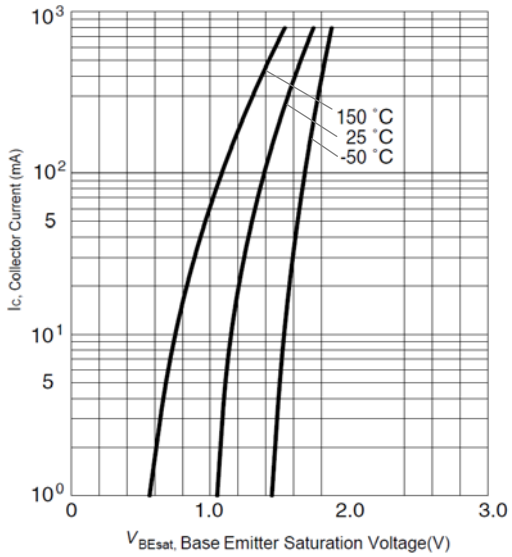
Absolute Maximum Ratings (T_a = 25 °C)

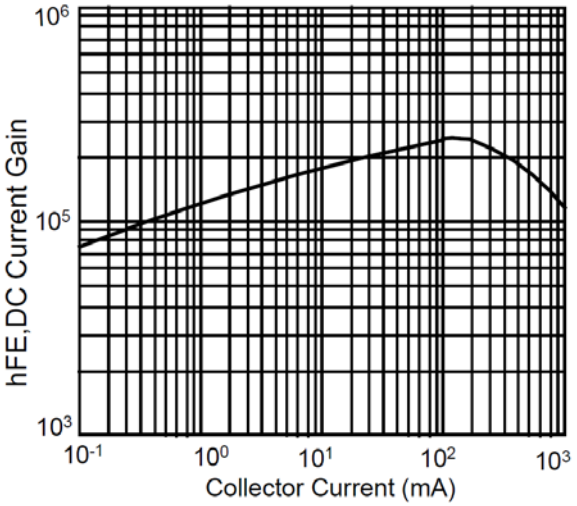
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	30	V
Collector Emitter Voltage	V_{CES}	30	V
Emitter Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_{tot}	350	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{Stg}	-55 to + 150	°C

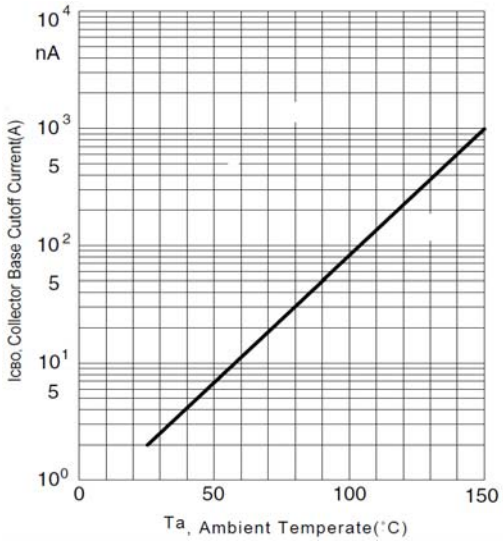
Characteristics at T_a = 25 °C

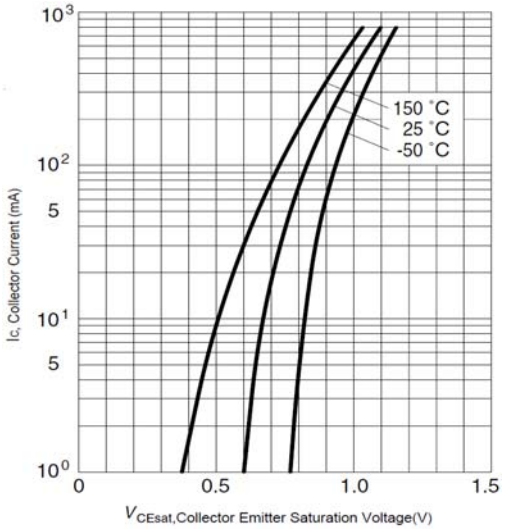
Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V_{CE} = 5 V, I_C =10 mA at V_{CE} = 5 V, I_C =100 mA	 h_{FE} h_{FE}	 5,000 10,000	 - -	 - -
Collector Base Cutoff Current at V_{CB} = 30 V	I_{CBO}	-	100	nA
Emitter Base Cutoff Current at V_{EB} = 10 V	I_{EBO}	-	100	nA
Collector Emitter Breakdown Voltage at I_C = 100 µA	$V_{(BR)CES}$	30	-	V
Collector Emitter Saturation Voltage at I_C = 100 mA, I_B = 0.1 mA	$V_{CE(sat)}$	-	1.5	V
Base Emitter On Voltage at I_C = 100 mA, V_{CE} = 5 V	$V_{BE(on)}$	-	2	V
Transition Frequency at V_{CE} =10 V, I_C =10 mA, f = 100 MHz	f_T	125	-	MHz

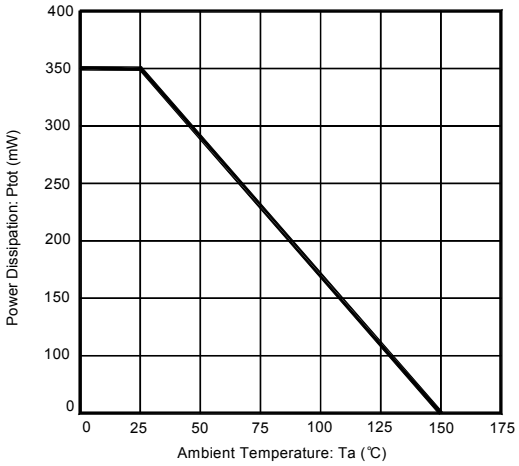
MMBTA13


150 °C
25 °C
-50 °C
Ic, Collector Current (mA)
VBEsat, Base Emitter Saturation Voltage(V)


hFE,DC Current Gain
Collector Current (mA)

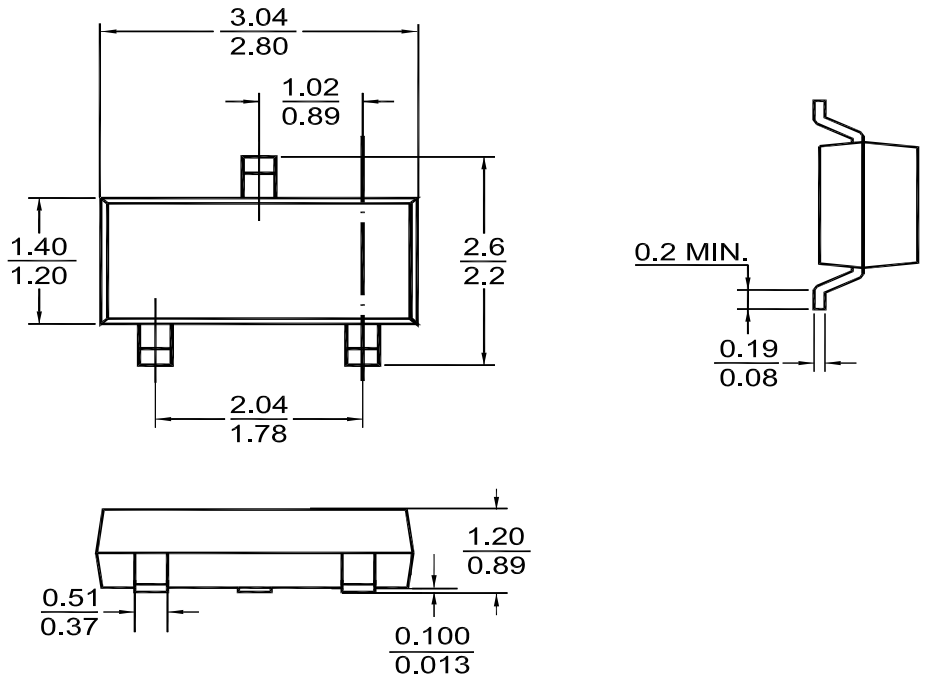

nA
ICBO, Collector Base Cutoff Current(A)
Ta, Ambient Temperate(°C)


150 °C
25 °C
-50 °C
Ic, Collector Current (mA)
VCEsat,Collector Emitter Saturation Voltage(V)

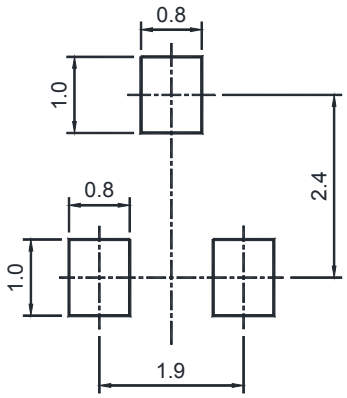

Power Dissipation: Ptot (mW)
Ambient Temperature: Ta (℃)

PACKAGE OUTLINE

Plastic surface mounted package (Dimensions in mm) **SOT-23**



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000