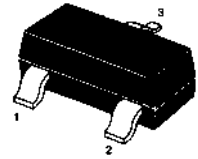




MMBTA13 / MMBTA14 Darlington Transistor

Features

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (MMBTA63 /MMBTA64)
- Ideal for Medium Power Amplification and Switching
- High Current Gain
- MMBTA13 Marking : K2D
- MMBTA14 Marking : K3D



1.Base 2.Emitter 3.Collector

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Absolute Maximum Ratings (T_a = 25 °C)

	Symbol	Value	Unit
Collector Emitter Voltage	V _{CES}	30	V
Collector Base Voltage	V _{CB0}	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

Characteristics at T_{amb}=25 °C

	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 _{CB0}	-	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

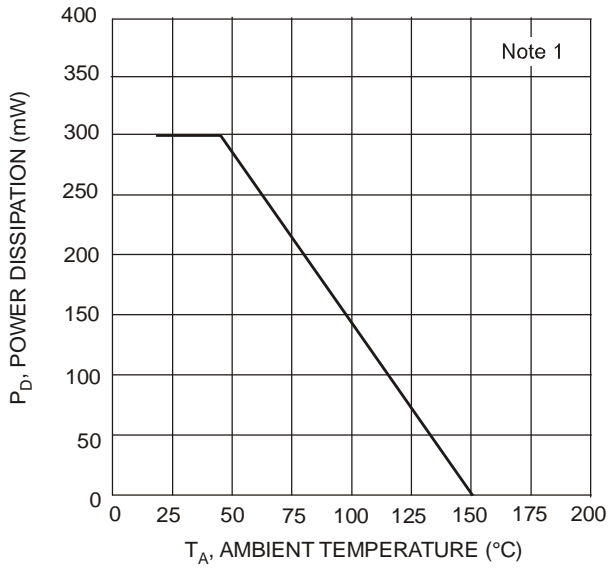


Fig. 1, Max Power Dissipation vs Ambient Temperature

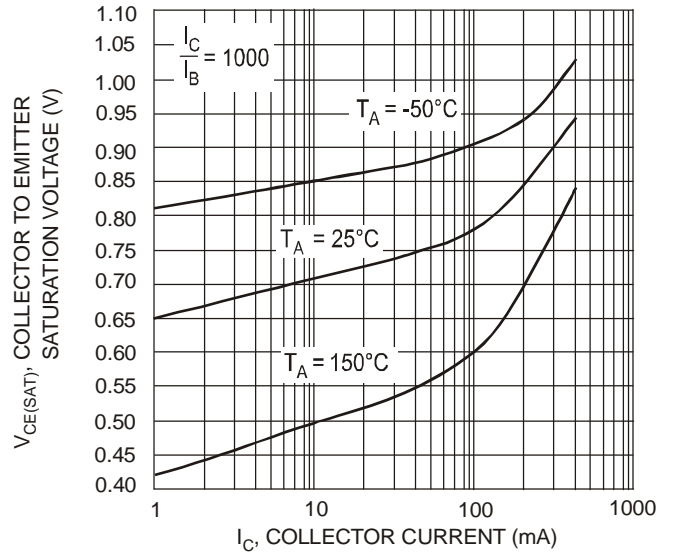


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

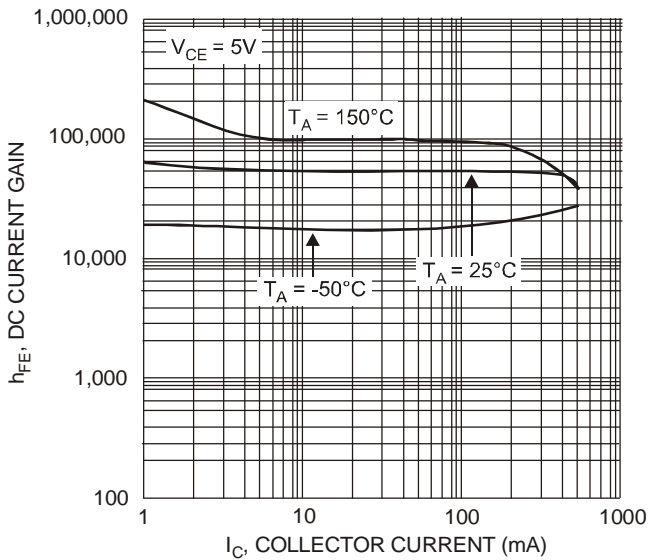


Fig. 3, DC Current Gain vs Collector Current

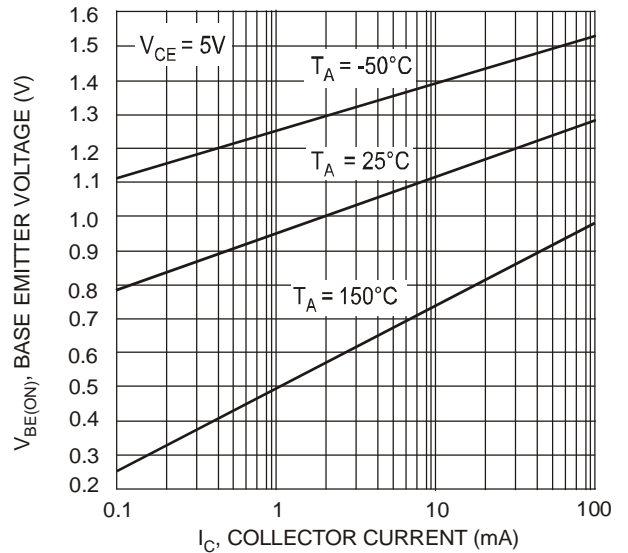


Fig. 4, Base Emitter Voltage vs. Collector Current

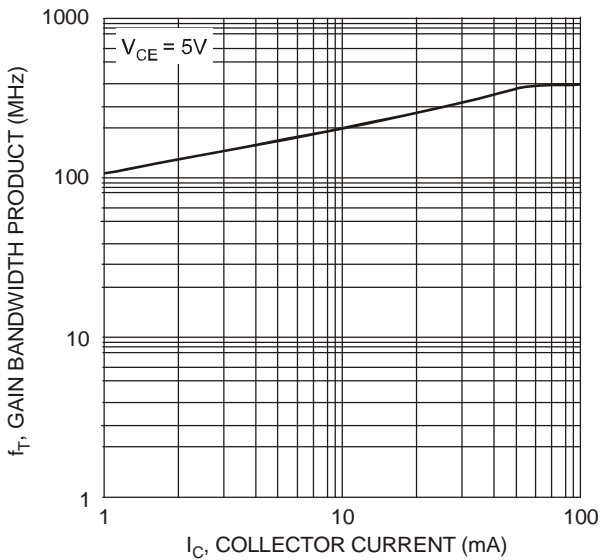


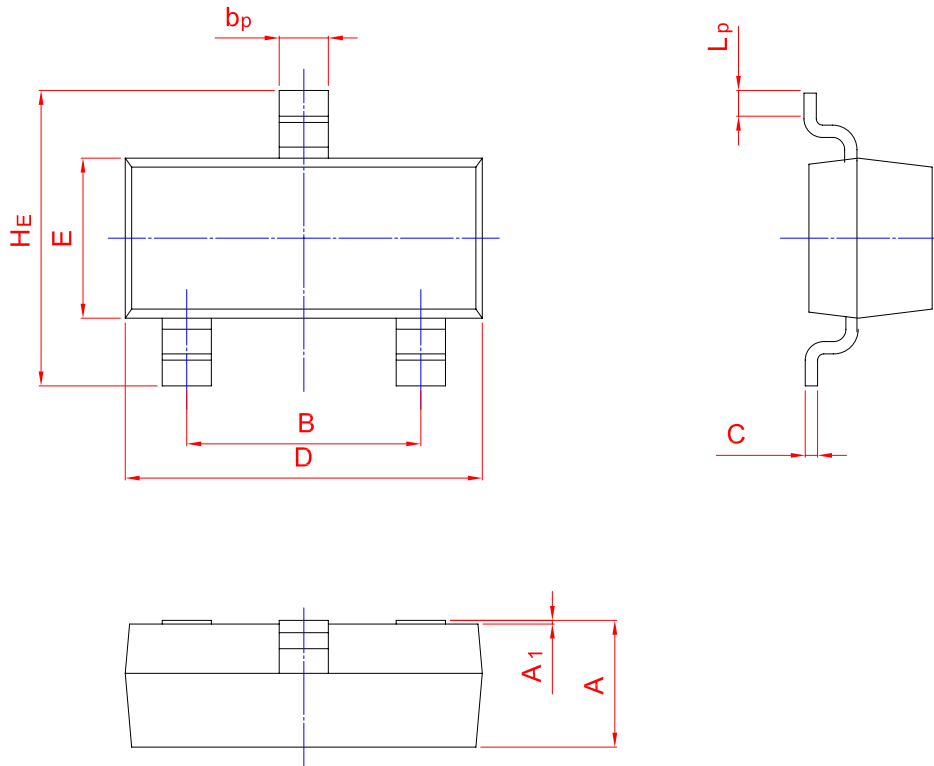
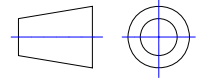
Fig. 5, Gain Bandwidth Product vs Collector Current



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

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UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20