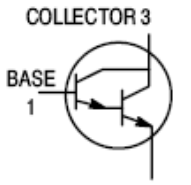
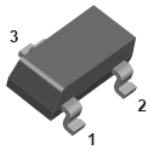
NPN Darlington Amplifier Transistor MMBTA13/MMBTA14

FEATURES

HF

- Epitaxial planar die construction.
- Complementary PNP type available (MMBTA63/MMBTA64).
- High current gain.
- MSL 1.





SOT-23

APPLICATIONS

- Ideal for medium power amplification and switching.

ORDERING INFORMATION

Type No.	Marking	Package Code
MMBTA13	K2D	SOT-23
MMBTA14	K3D	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter		Value	UNIT
V_{CBO}	collector-base voltage	MMBTA13 MMBTA14	30 30	V
V_{CEO}	collector-emitter voltage	MMBTA13 MMBTA14	30 30	V
V_{EBO}	emitter-base voltage		10	V
I_C	collector current (DC)		0.3	A
P_C	Collector dissipation		0.3	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		417	°C/W
T_j ,T_{stg}	junction and storage temperature		-55 to +150	°C

NPN Darlington Amplifier Transistor MMBTA13/MMBTA14

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Test conditions	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage MMBTA13 MMBTA14	I_C=100μA,I_E=0	 30 30	-	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage MMBTA13 MMBTA14	I_C=0.1mA,I_B=0	 30 30	-	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=100μA,I_C=0	10	-	V
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = 30V	-	0.1	μA
I_{CEO}	collector cut-off current	I_E = 0; V_{CE} = 10V	-	0.1	μA
h_{FE}	DC current gain MMBTA13 MMBTA14 MMBTA13 MMBTA14	V_{CE} = 5V; I_C= 10mA V_{CE} = 5V;I_C = 10mA V_{CE} = 5V;I_C = 100mA V_{CE} = 5V;I_C = 100mA	5000 10000 10000 20000	-	
$V_{CE(sat)}$	collector-emitter saturation voltage	I_C = 100mA; I_B = 0.1mA	-	1.5	V
V_{BE}	Base-emitter on voltage	I_C=100mA,V_{CE}=5V	-	2.0	V
f_T	transition frequency	I_C = 10mA; V_{CE} = 5.0V; f = 100MHz	125	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

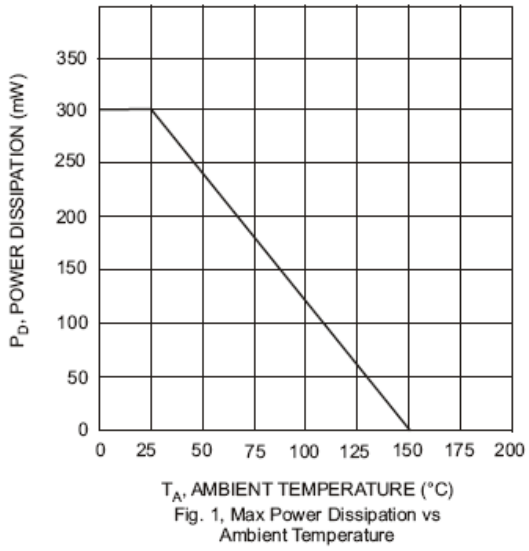


Fig. 1, Max Power Dissipation vs Ambient Temperature

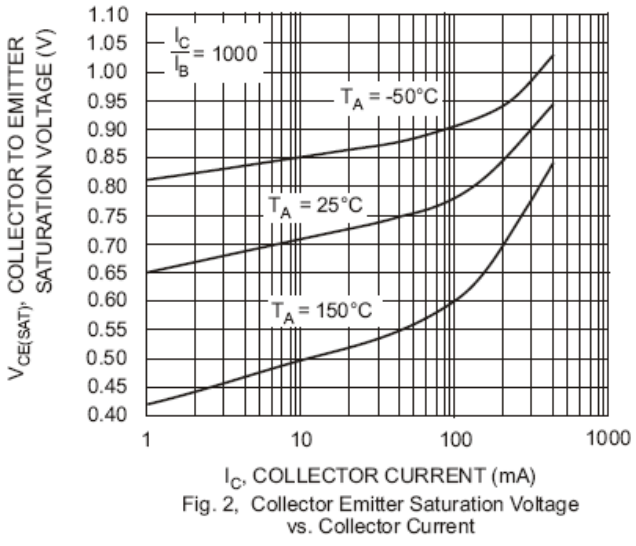
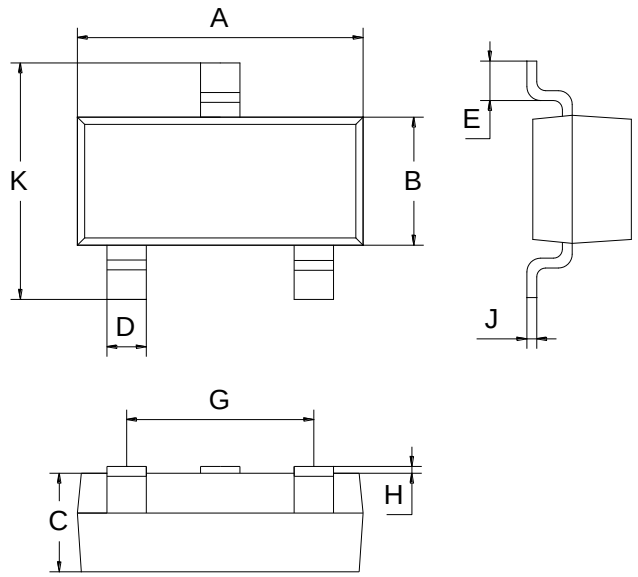


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

NPN Darlington Amplifier Transistor MMBTA13/MMBTA14

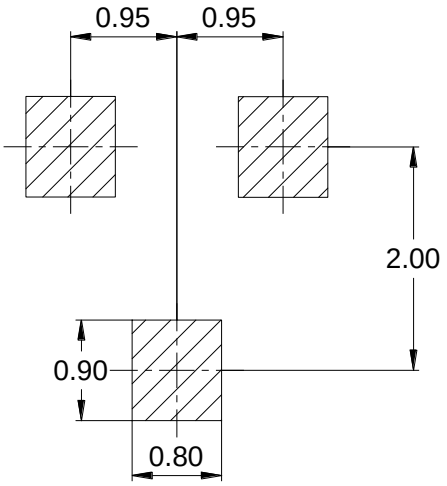
PACKAGE OUTLINE

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
MMBTA13/MMBTA14	SOT-23	3000pcs / Tape & Reel