

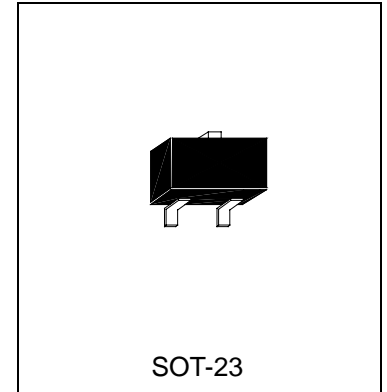


# HMBTA13

NPN EPITAXIAL PLANAR TRANSISTOR

## Description

Darlington Amplifier Transistor



## Absolute Maximum Ratings

- Maximum Temperatures  
 Storage Temperature ..... -55 ~ +150 °C  
 Junction Temperature..... +150 °C Maximum
- Maximum Power Dissipation  
 Total Power Dissipation (Ta=25°C) ..... 225 mW
- Thermal Resistance  
 Junction To Ambient Rθja..... 556 °C/W
- Maximum Voltages and Currents (Ta=25°C)  
 VCBO Collector to Base Voltage ..... 30 V  
 VCES Collector to Emitter Voltage ..... 30 V  
 VEBO Emitter to Base Voltage ..... 10 V  
 IC Collector Current..... 300 mA

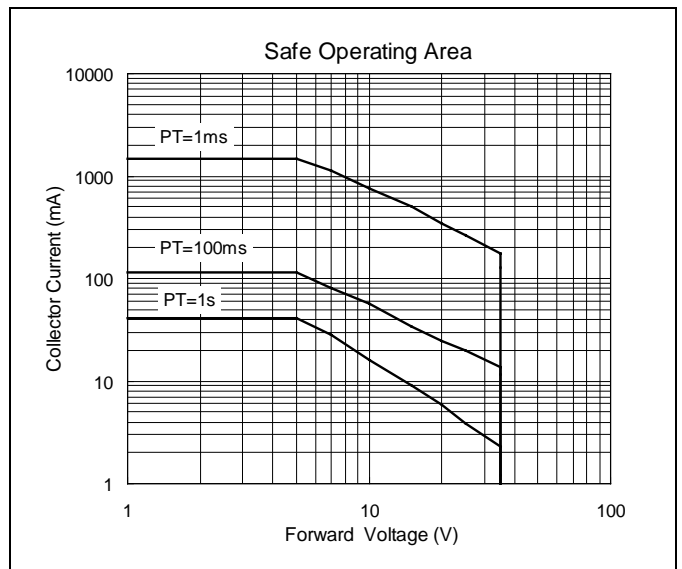
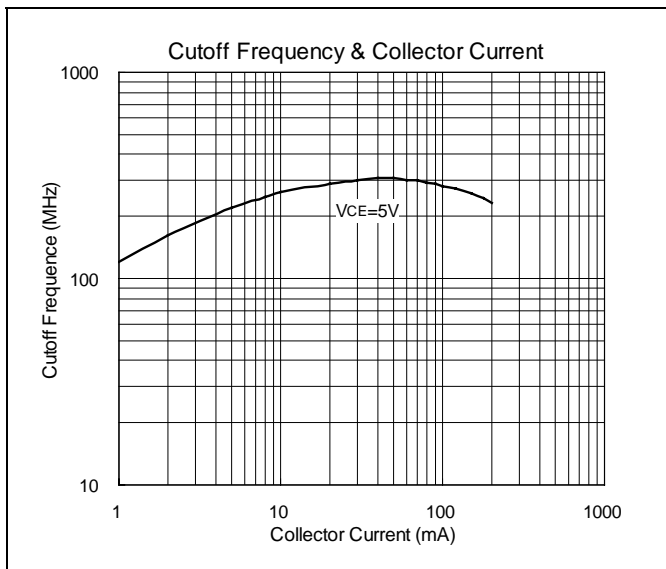
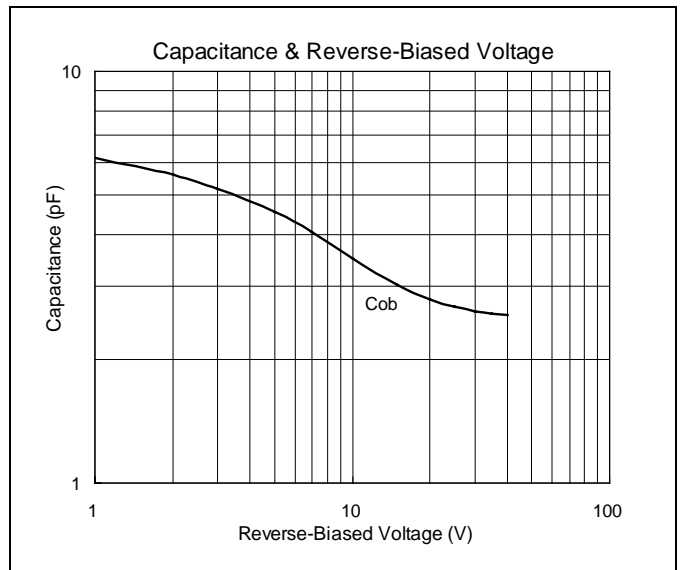
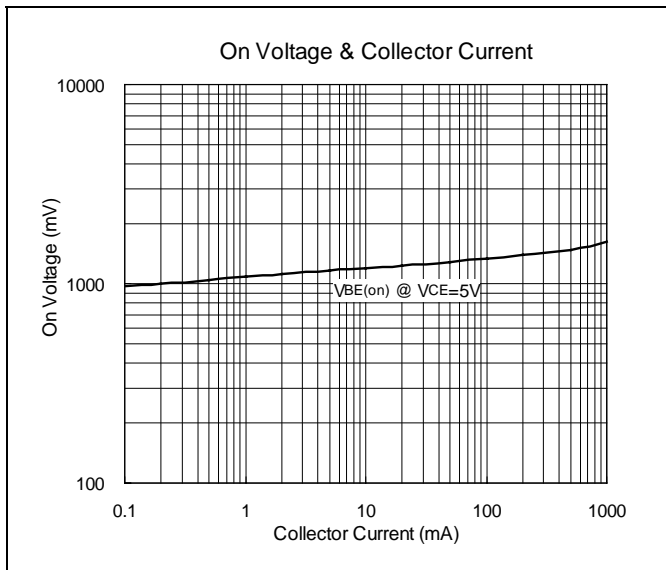
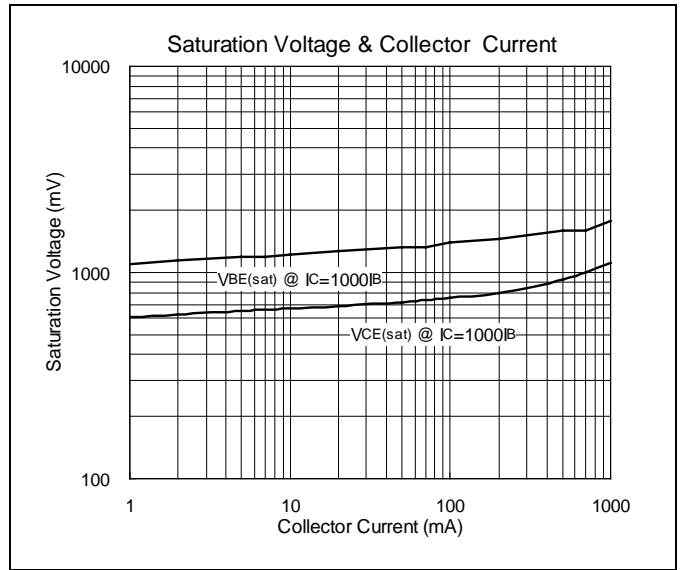
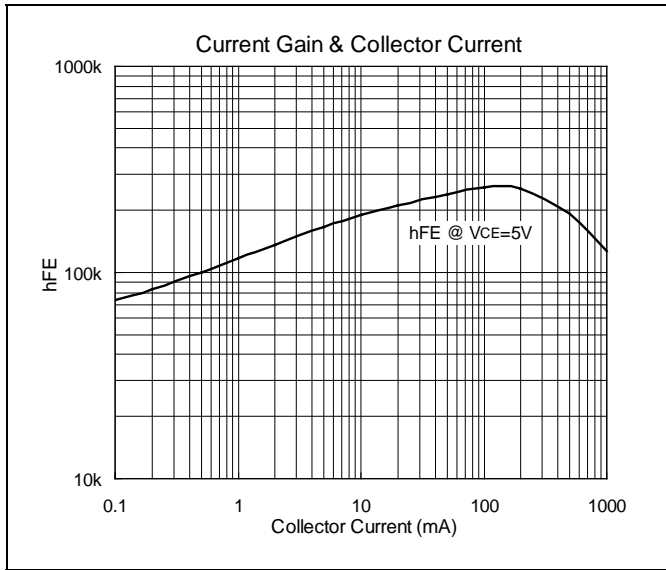
## Characteristics (Ta=25°C)

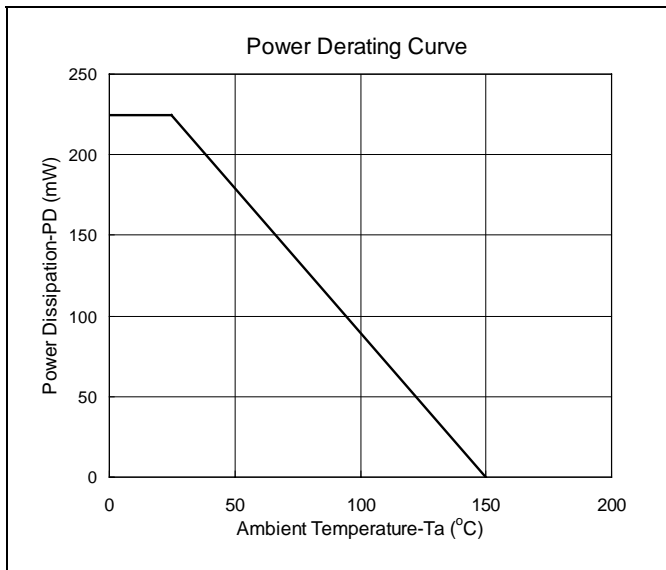
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCBO	30	-	-	V	IC=100uA
BVCES	30	-	-	V	IC=100uA
BVEBO	10	-	-	V	IE=10uA
ICBO	-	-	100	nA	VCB=30V
IEBO	-	-	100	nA	VEB=10V
*VCE(sat)	-	-	1.5	V	IC=100mA, IB=0.1mA
VBE(on)	-	-	2.0	V	VCE=5V, IC=100mA
*hFE1	5K	-	-		VCE=5V, IC=10mA
*hFE2	10K	-	-		VCE=5V, IC=100mA
fT	125	-	-	MHz	VCE=5V, IC=10mA, f=100MHz
Cob	-	-	6	pF	VCB=10V, f=1MHz

\*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%



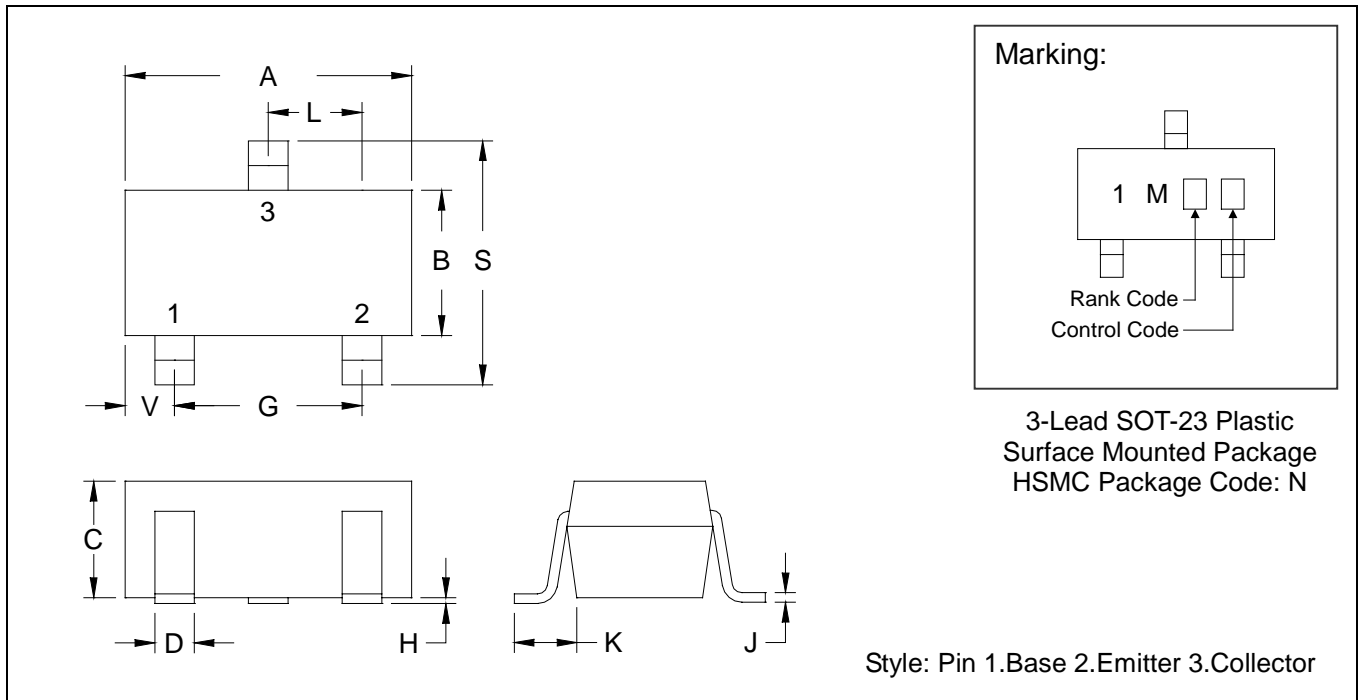
### Characteristics Curve







### SOT-23 Dimension



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1083	2.10	2.75
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					

- Notes: 1.Dimension and tolerance based on our Spec. dated Sep. 07,1997.  
 2.Controlling dimension: millimeters.  
 3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.  
 4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

**Material:**

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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