

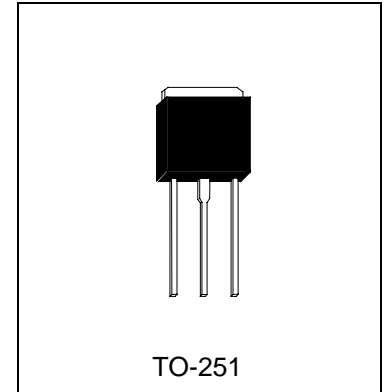


# HI13003

NPN EPITAXIAL PLANAR TRANSISTOR

## Description

These devices are designed for high-voltage, high-speed power switching inductive circuits where fall time is critical. They are particularly suited for 115 and 220V switchmode applications such as Switching Regulators, Inverters, Motor Controls, Solenoid/Relay drivers and Deflection circuits.



## Absolute Maximum Ratings (Ta=25°C)

- Maximum Temperatures
  - Storage Temperature ..... -55 ~ +150 °C
  - Junction Temperature ..... 150 °C Maximum
- Maximum Power Dissipation
  - Total Power Dissipation (Tc=25°C) ..... 40 W
  - Total Power Dissipation (Ta=25°C) ..... 1.3 W
- Maximum Voltages and Currents (Ta=25°C)
  - BVCEV Collector to Emitter Voltage ..... 700 V
  - VCEO Collector to Emitter Voltage ..... 400 V
  - VEBO Emitter to Base Voltage ..... 9 V
  - IC Collector Current ..... 1.5 A

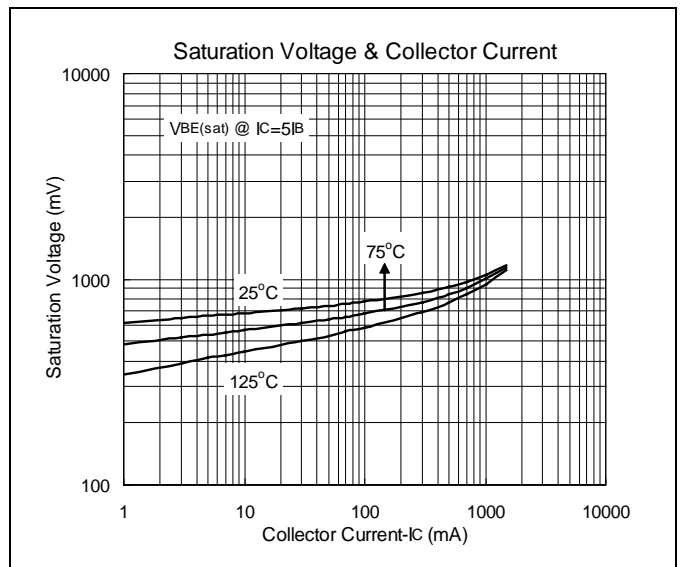
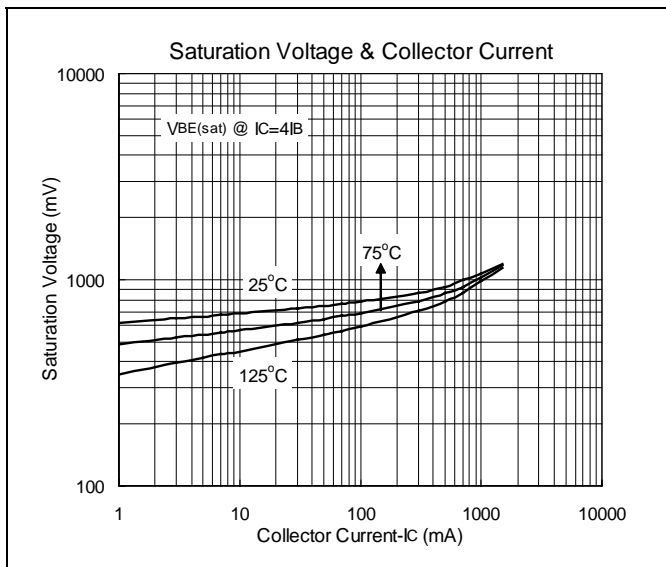
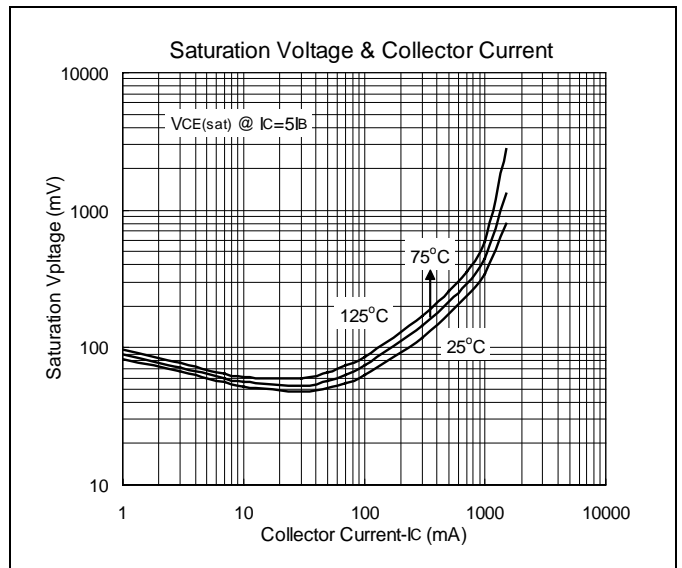
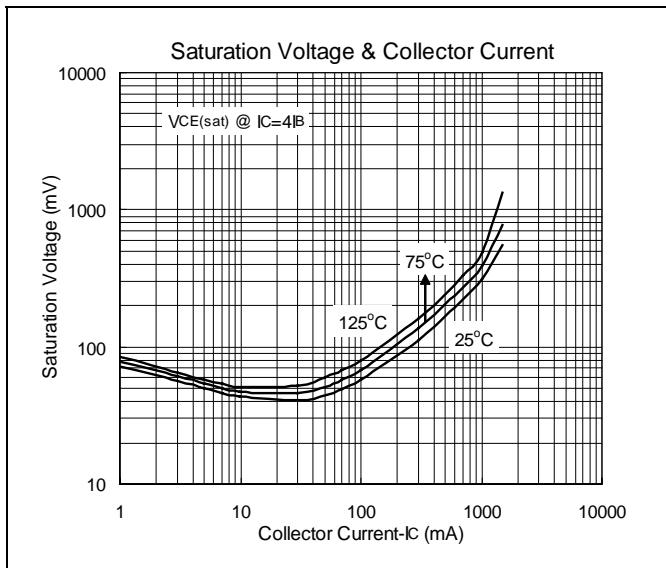
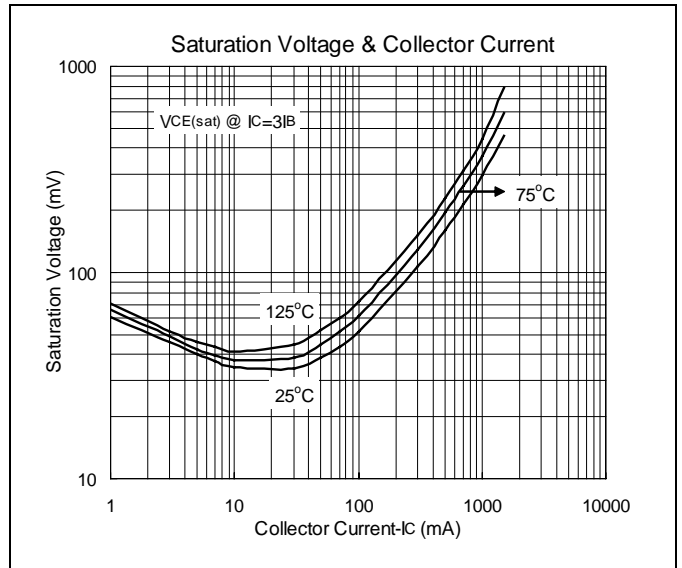
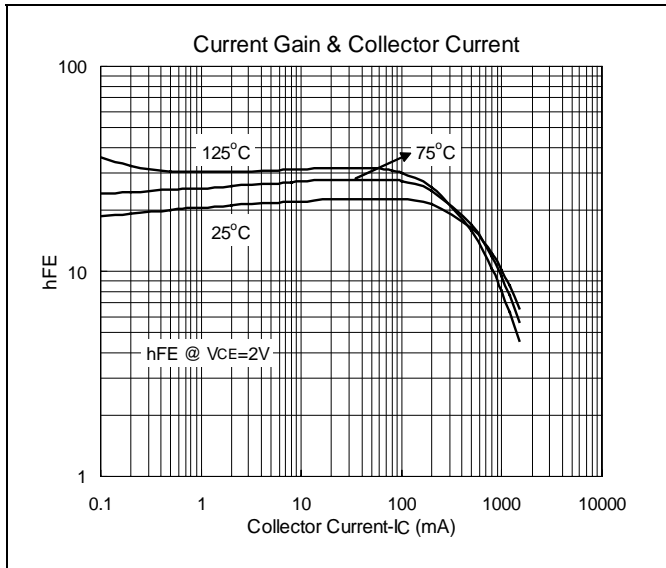
## Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCEO	400	-	-	V	IC=10mA
BVCEV	700	-	-	V	IC=1mA, VBE(OFF)=1.5V
IEBO	-	-	1	mA	VEB=9V
ICEV	-	-	1	mA	VCE=700V, VBE(OFF)=1.5V
*VCE(sat)1	-	-	0.5	V	IC=0.5A, IB=0.1A
*VCE(sat)2	-	-	1	V	IC=1A, IB=0.25A
*VCE(sat)3	-	-	3	V	IC=1.5A, IB=0.5A
*VBE(sat)1	-	-	1	V	IC=0.5A, IB=0.1A
*VBE(sat)2	-	-	1.2	V	IC=1A, IB=0.25A
*hFE1	8	-	40		IC=0.5A, VCE=2V
*hFE2	5	-	25		VCE=2V, IC=1A
Cob	-	21	-	pF	VCB=10V, IE=0, f=1MHz

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

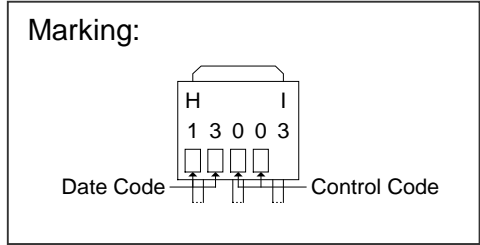
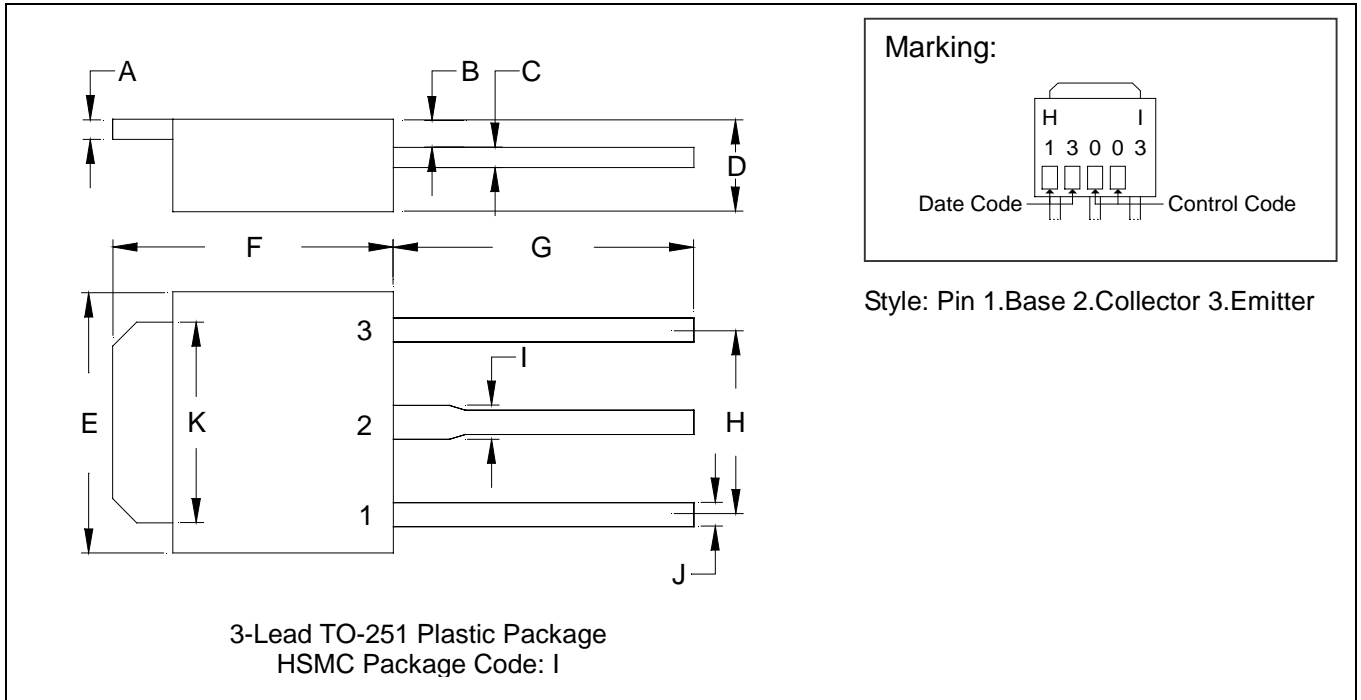


### Characteristics Curve





### TO-251 Dimension



Style: Pin 1.Base 2.Collector 3.Emitter

\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0177	0.0217	0.45	0.55	G	0.2559	-	6.50	-
B	0.0354	0.0591	0.90	1.50	H	-	*0.1811	-	*4.60
C	0.0177	0.0236	0.45	0.60	I	-	0.0354	-	0.90
D	0.0866	0.0945	2.20	2.40	J	-	0.0315	-	0.80
E	0.2520	0.2677	6.40	6.80	K	0.2047	0.2165	5.20	5.50
F	0.2677	0.2835	6.80	7.20					

- Notes: 1.Dimension and tolerance based on our Spec. dated May. 24,1995.  
 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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