



HTIP117D

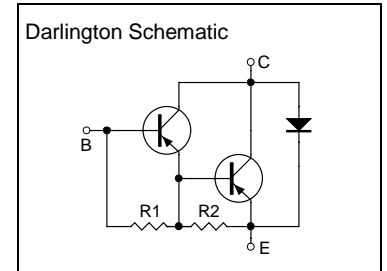
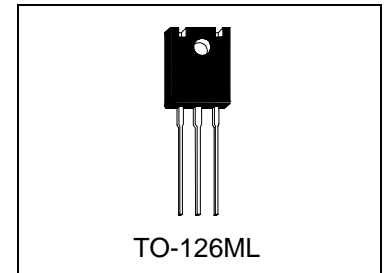
PNP EPITAXIAL PLANAR TRANSISTOR

Description

The HTIP117D is designed for use in general purpose amplifier and low-speed switching applications.

Absolute Maximum Ratings (T_A=25°C)

- Maximum Temperatures
 - Storage Temperature -55 ~ +150 °C
 - Junction Temperature +150 °C Maximum
- Maximum Power Dissipation
 - Total Power Dissipation (T_C=25°C) 10 W
- Maximum Voltages and Currents
 - BV_{CBO} Collector to Base Voltage -100 V
 - BV_{CEO} Collector to Emitter Voltage -100 V
 - BV_{EBO} Emitter to Base Voltage -5 V
 - I_C Collector Current (Continue) -4 A
 - I_{CP} Collector Current (Peak) -6 A



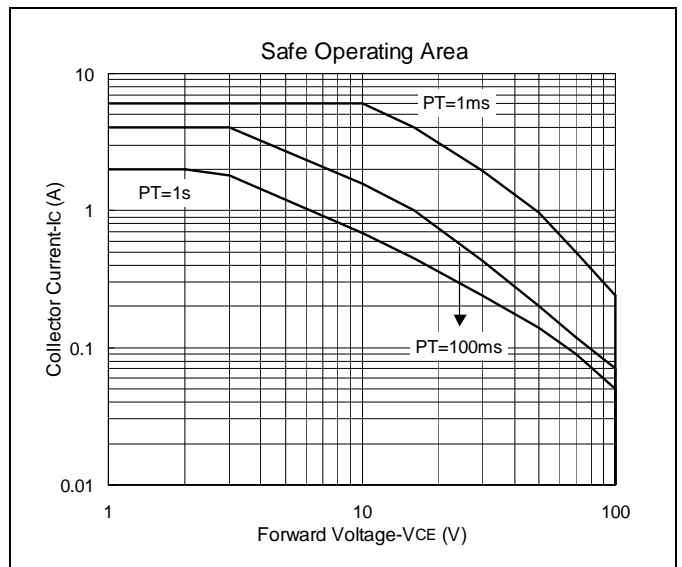
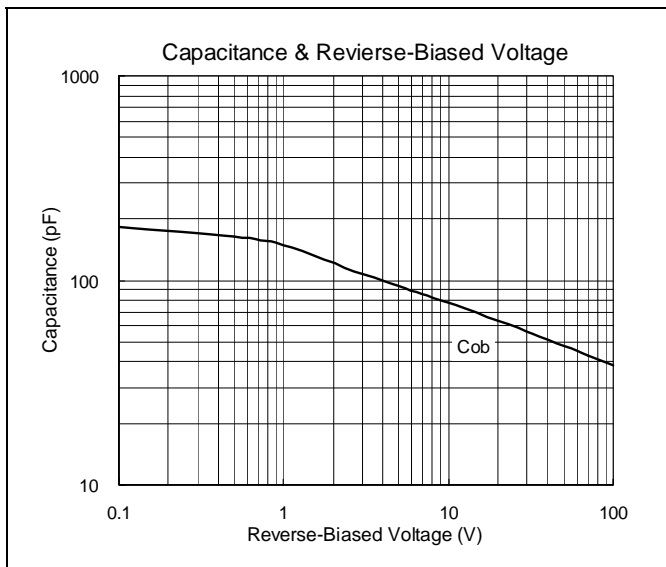
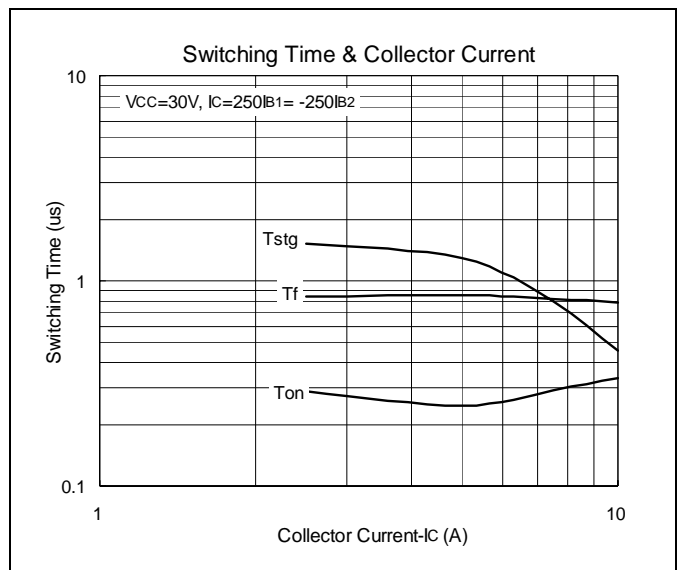
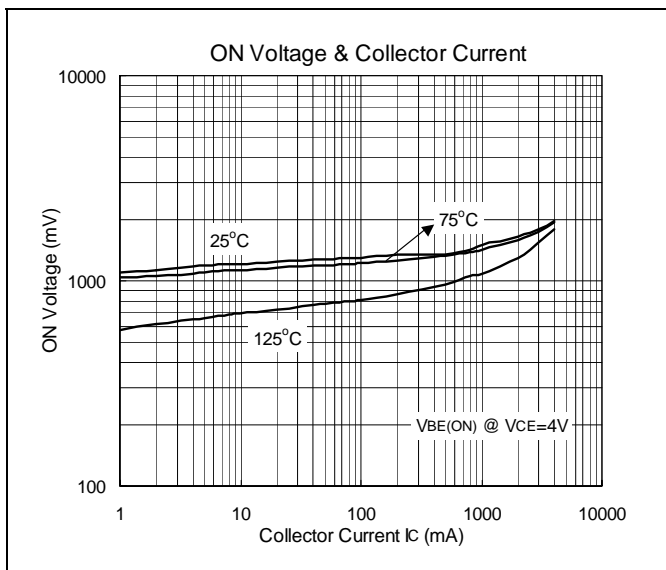
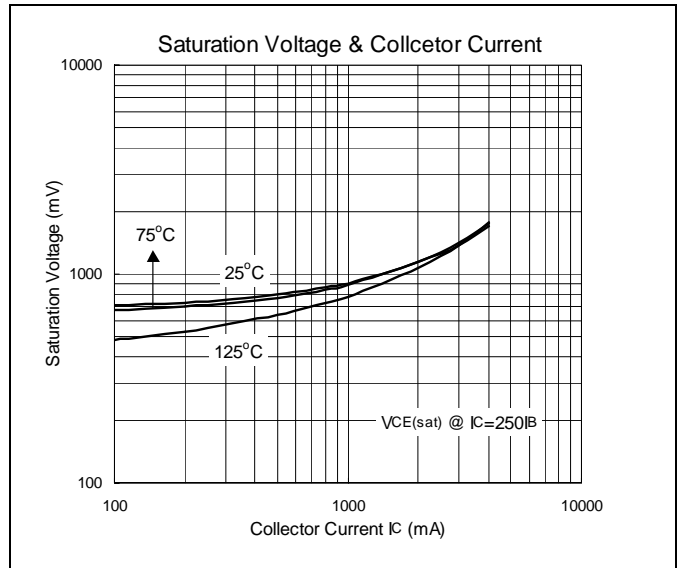
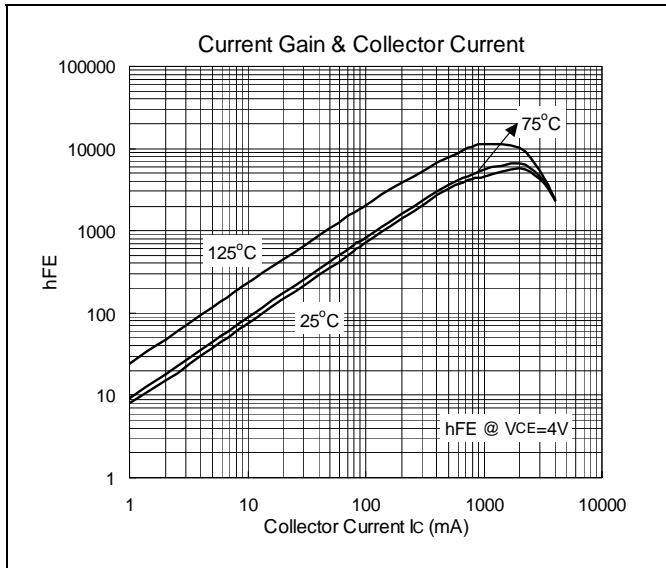
Electrical Characteristics (T_A=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	-100	-	-	V	I _C =-1mA
BV _{CEO}	-100	-	-	V	I _C =-30mA
I _{CBO}	-	-	-1	mA	V _{CB} =-100V
I _{CEO}	-	-	-2	mA	V _{CE} =-50V
I _{EBO}	-	-	-2	mA	V _{EB} =-5V
*V _{CE(sat)}	-	-	-2.5	V	I _C =-2A, I _B =-8mA
*V _{BE(on)}	-	-	-2.8	V	I _C =-2A, V _{CE} =-4V
*h _{FE1}	1	-	-	K	I _C =-1A, V _{CE} =-4V
*h _{FE2}	500	-	-		I _C =-2A, V _{CE} =-4V
Cob	-	-	200	pF	V _{CB} =-10V, f=0.1MHz

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

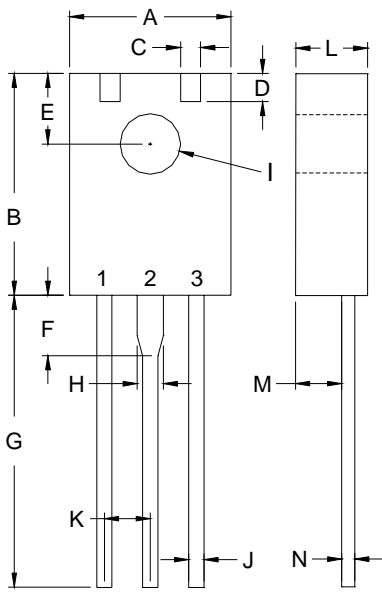


Characteristics Curve



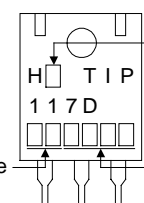


TO-126ML Dimension



The diagram shows the mechanical dimensions of a 3-lead TO-126ML plastic package. Dimensions are labeled with letters A through N. A top view shows a rectangular body with a circular window (I) and three leads (1, 2, 3) extending from the bottom. A side view shows the package height (L) and lead length (N). A detail view of the leads shows their thickness (H), width (K), and spacing (J).

Marking:



Pb Free Mark
 Pb-Free: "●" (Note)
 Normal: None

Date Code: 1 1 7 D
 Control Code: H T I P

Note: Green label is used for pb-free packing
 Pin Style: 1.Emitter 2.Collector 3.Base

Material:
 • Lead solder plating: Sn60/Pb40 (Normal), Sn/3.0Ag/0.5Cu or Pure-Tin (Pb-free)
 • Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

DIM	Min.	Max.
A	7.74	8.24
B	10.87	11.37
C	0.88	1.12
D	1.28	1.52
E	3.50	3.75
F	2.61	3.37
G	13	-
H	1.18	1.42
I	2.88	3.12
J	0.68	0.84
K	-	2.30
L	3.44	3.70
M	1.88	2.14
N	0.50	0.51

*: Typical, Unit: mm

3-Lead TO-126ML
 Plastic Package
 HSMC Package Code: D

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Soldering Methods for HSMC's Products

1. Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2. Reflow soldering of surface-mount devices



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	$<3^{\circ}\text{C}/\text{sec}$	$<3^{\circ}\text{C}/\text{sec}$
Preheat		
- Temperature Min (T_{Smin})	100°C	150°C
- Temperature Max (T_{Smax})	150°C	200°C
- Time (min to max) (t_s)	60~120 sec	60~180 sec
T_{Smax} to T_L		
- Ramp-up Rate	$<3^{\circ}\text{C}/\text{sec}$	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above:		
- Temperature (T_L)	183°C	217°C
- Time (t_L)	60~150 sec	60~150 sec
Peak Temperature (T_P)	240°C +0/-5°C	260°C +0/-5°C
Time within 5°C of actual Peak Temperature (t_p)	10~30 sec	20~40 sec
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	<6 minutes	<8 minutes

3. Flow (wave) soldering (solder dipping)

Products	Peak temperature	Dipping time
Pb devices.	245°C ±5°C	5sec ±1sec
Pb-Free devices.	260°C +0/-5°C	5sec ±1sec