



HSD879D

SILICON NPN EPITAXIAL TYPE TRANSISTOR

Description

For 1.5V and 3v electronic flash use.

Features

- Charger-up time is about 1 ms faster than of a germanium transistor.
- Small saturation voltage can bring less power dissipation and flashing times.

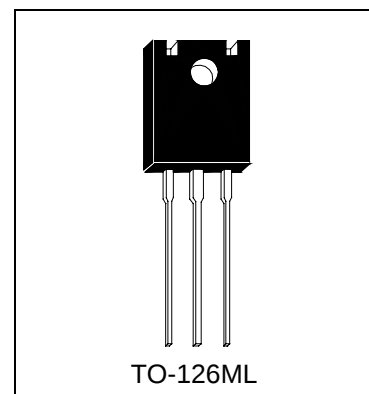
Absolute Maximum Ratings

- Maximum Temperatures
Storage Temperature -55 ~ +150 °C
Junction Temperature +150 °C Maximum
- Maximum Power Dissipation
Total Power Dissipation ($T_A=25^{\circ}\text{C}$) 1.4 W
- Maximum Voltages and Currents ($T_A=25^{\circ}\text{C}$)
 BV_{CBO} Collector to Base Voltage 30 V
 BV_{CEX} Collector to Emitter Voltage 20 V
 BV_{CEO} Collector to Emitter Voltage 10 V
 BV_{EBO} Emitter to Base Voltage 6 V
 I_C Collector Current 3 A
 I_{CP} Collector Current (Pluse) 5 A

Electrical Characteristics ($T_A=25^{\circ}\text{C}$)

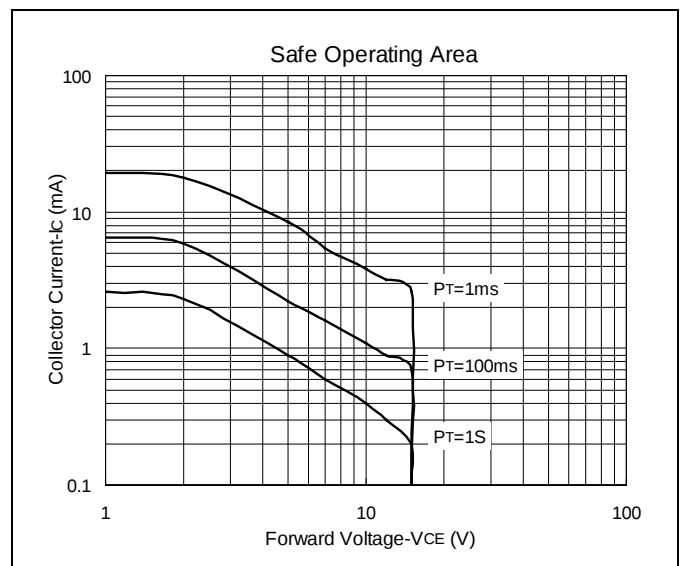
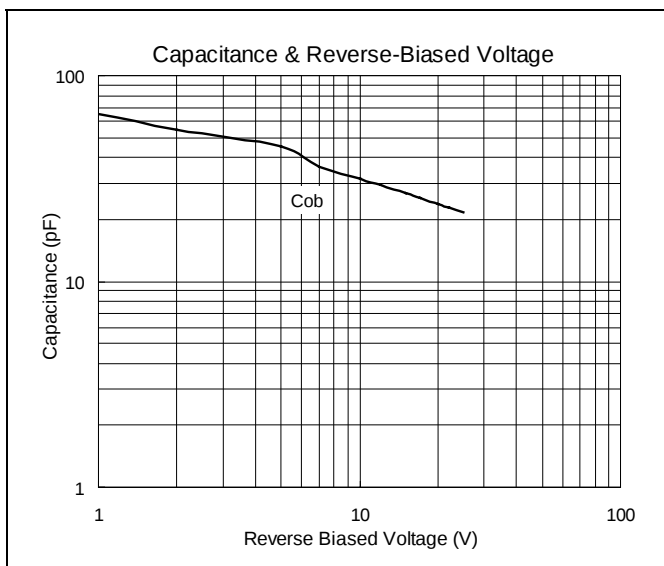
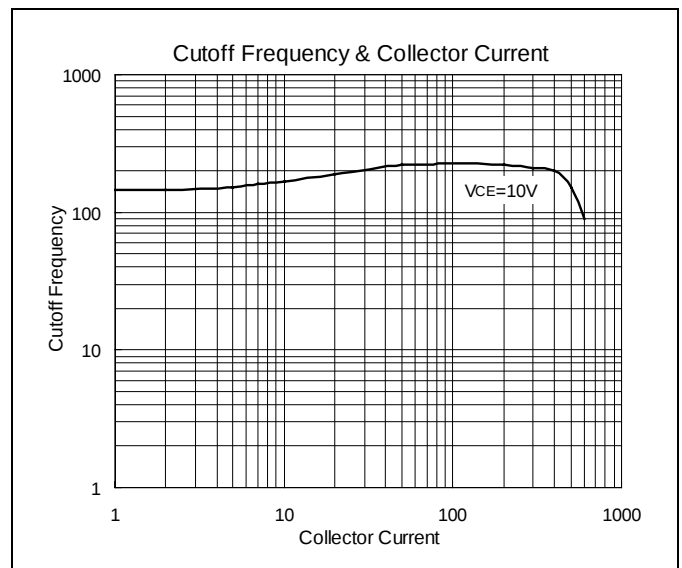
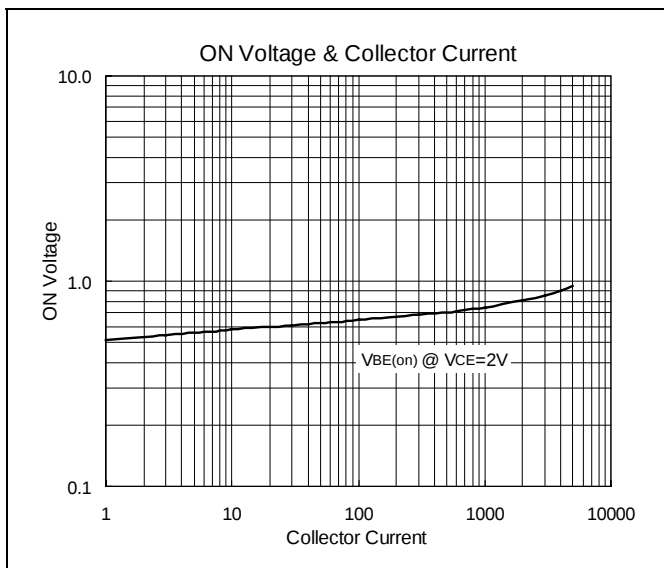
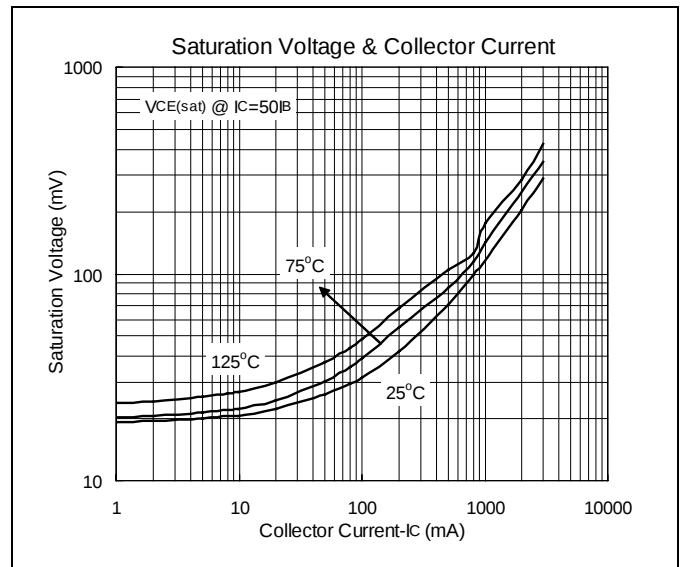
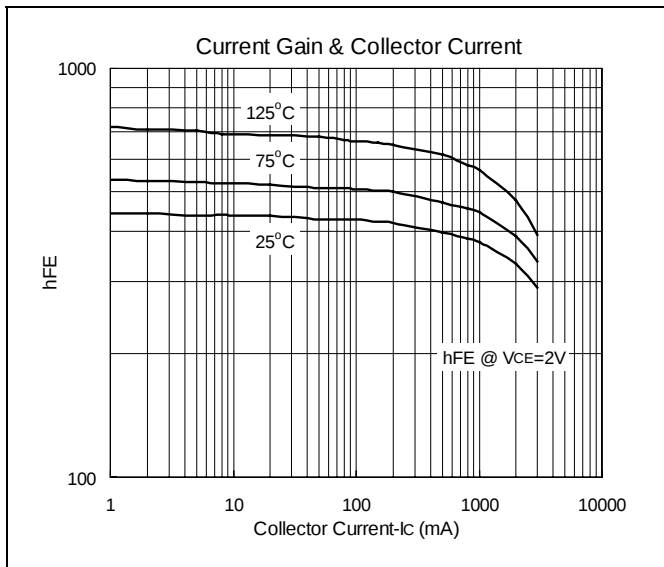
Symbol	Min.	Typ.	Max.	Unit	Test Condition
BV_{CEO}	10	-	-	V	$I_C=1\text{mA}$
BV_{EBO}	6	-	-	V	$I_E=10\mu\text{A}$
I_{CBO}	-	-	100	nA	$V_{CB}=20\text{V}$
I_{EBO}	-	-	100	nA	$V_{BE}=4\text{V}$
$*V_{CE(sat)}$	-	0.3	0.4	V	$I_C=3\text{A}$, $I_B=60\text{mA}$
$*V_{BE}$	-	0.83	1.5	V	$V_{CE}=-1\text{V}$, $I_C=-2\text{A}$
$*h_{FE}$	140	210	-		$V_{CE}=2\text{V}$, $I_C=3\text{A}$
f_T	-	200	-	MHZ	$V_{CE}=10\text{V}$, $I_C=50\text{mA}$
Cob	-	30	-	pF	$V_{CB}=10\text{V}$, $f=1\text{KHZ}$

*Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$



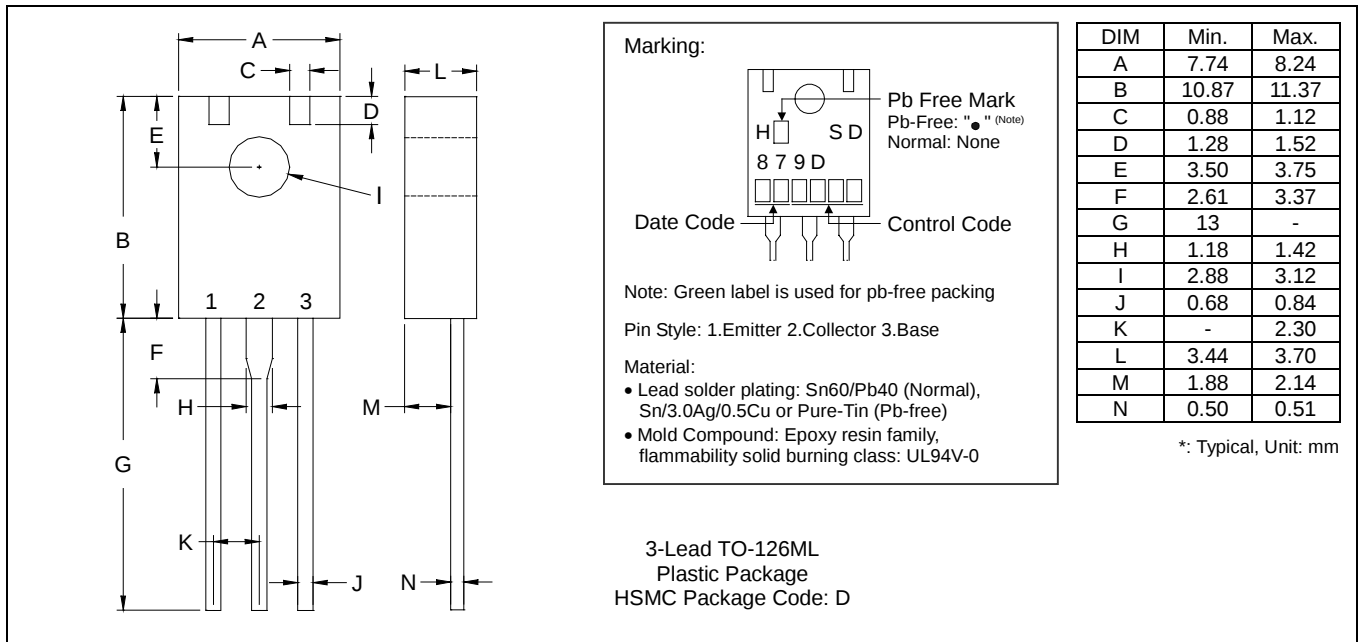


Characteristics Curve





TO-126ML Dimension



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Head Office And Factory:

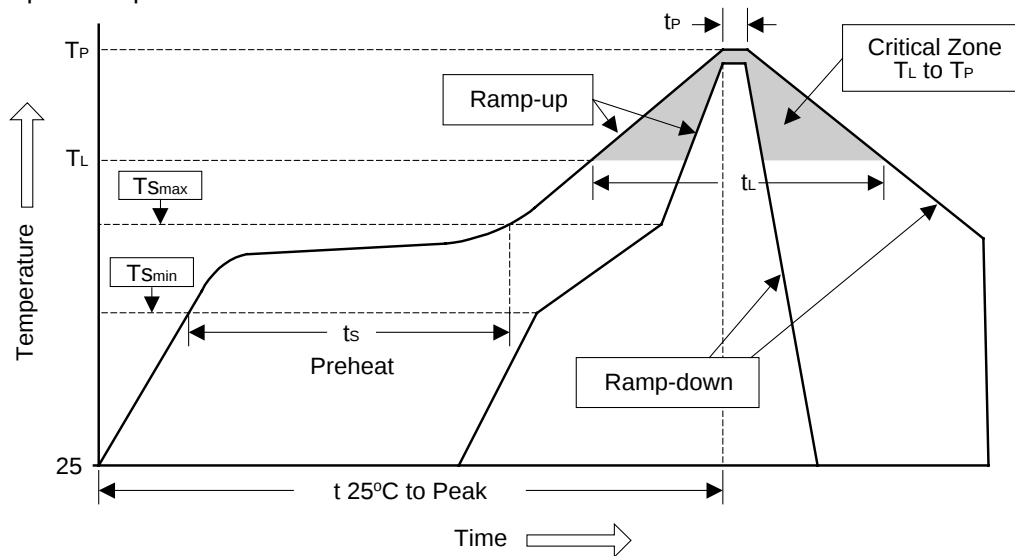
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Soldering Methods for HSMC's Products

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

Figure 1: Temperature profile



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	<3°C/sec	<3°C/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°C/sec	<3°C/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°C/sec	<6°C/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	10sec ±1sec
Pb-Free devices.	260°C ±5°C	10sec ±1sec