



HSD879

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

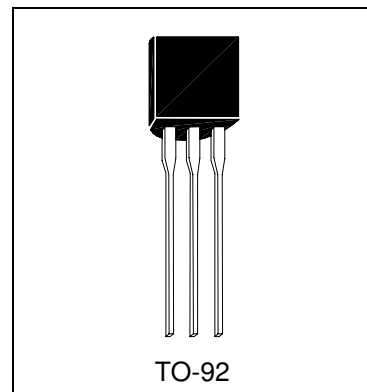
Absolute Maximum Ratings

- Maximum Temperatures
Storage Temperature -55 ~ +150 °C
Junction Temperature +150 °C Maximum
- Maximum Power Dissipation
Total Power Dissipation ($T_A=25^{\circ}\text{C}$) 750 mW
- 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_C 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 =1mA
BV _{EBO}	6	-	-	V	I _E =10uA
BV _{CBO}	30	-	-	V	I _C =10uA
BV _{CEX}	20	-	-	V	I _C =1mA, V _{BE} =3V
I _{CBO}	-	-	100	nA	V _{CB} =20V
I _{EBO}	-	-	100	nA	V _{BE} =4V
*h _{FE}	140	210	400		V _{CE} =2V, I _C =3A
*V _{CE(sat)}	-	0.3	0.4	V	I _C =3A, I _B =60mA
f _T	-	200	-	MHZ	V _{CE} =10V, I _C =50mA
Cob	-	30	-	pF	V _{CB} =10V, f=1MHZ

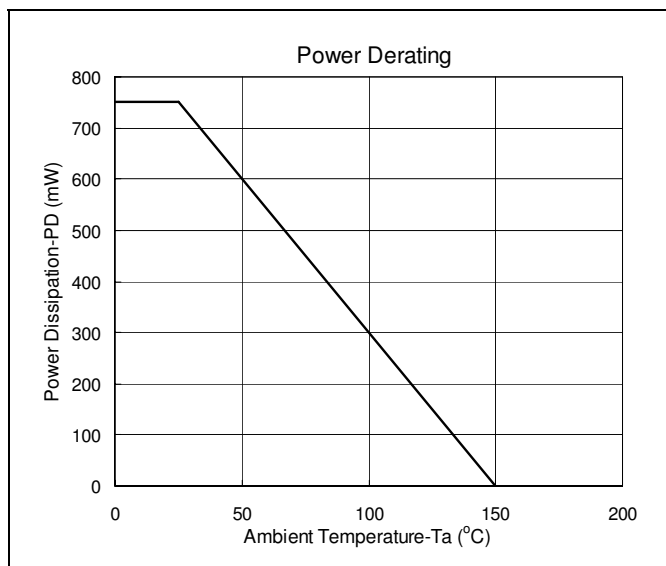
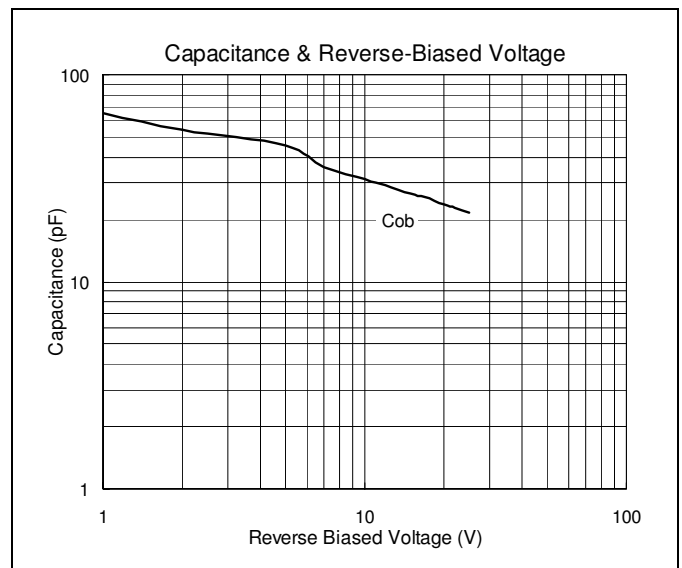
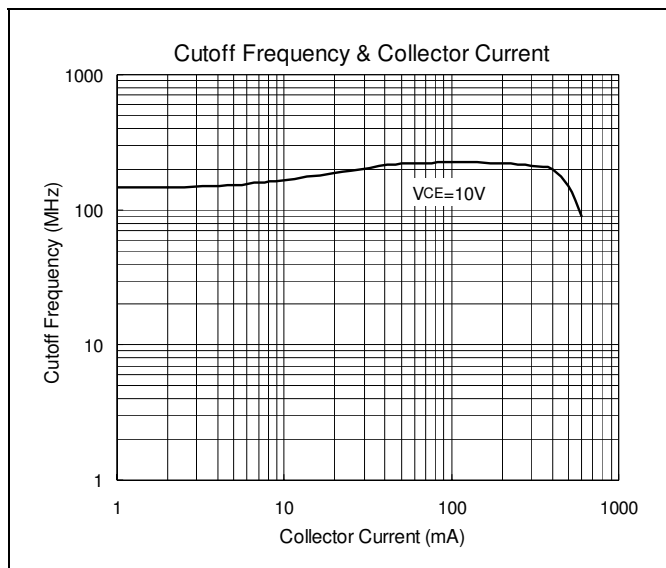
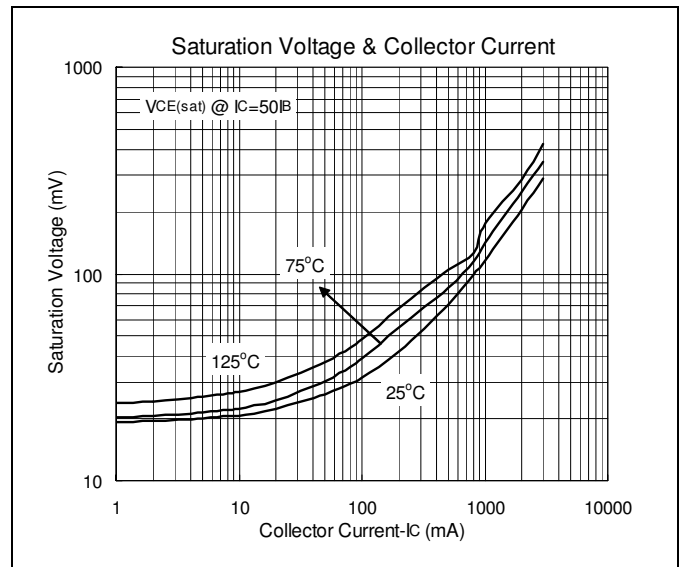
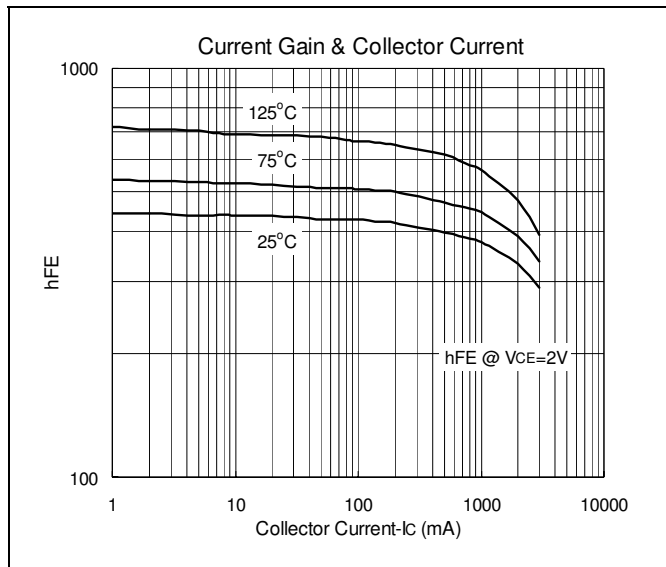
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%



TO-92

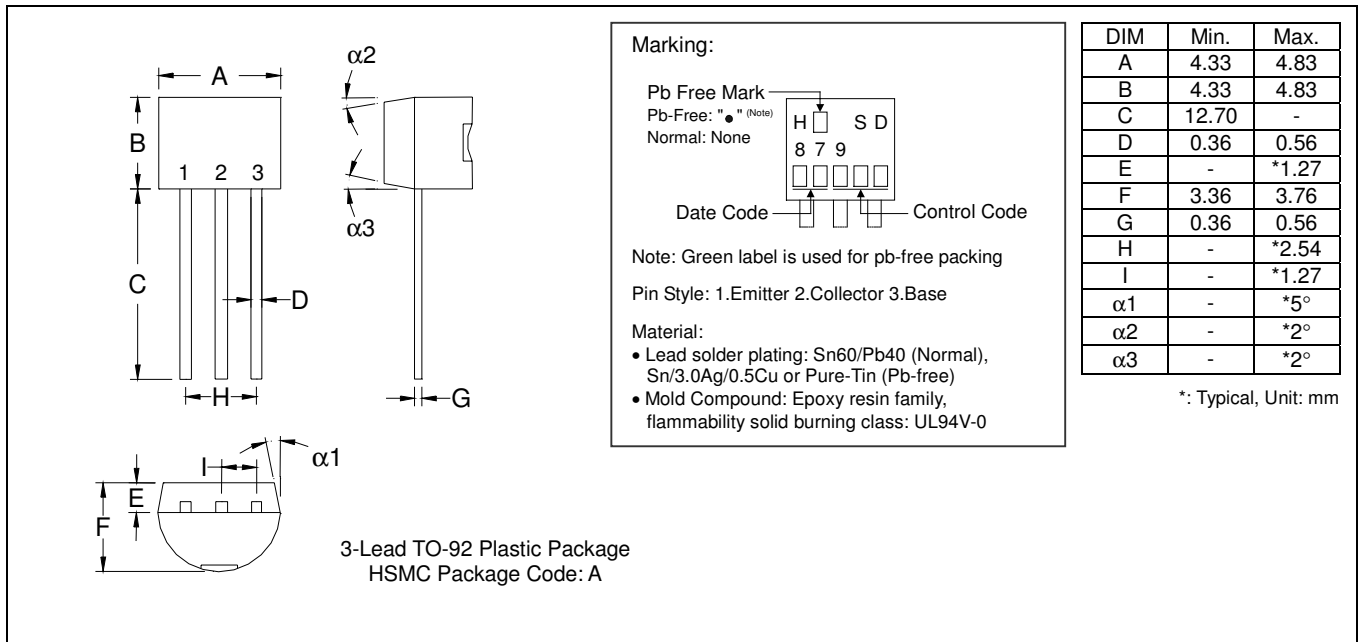


Characteristics Curve

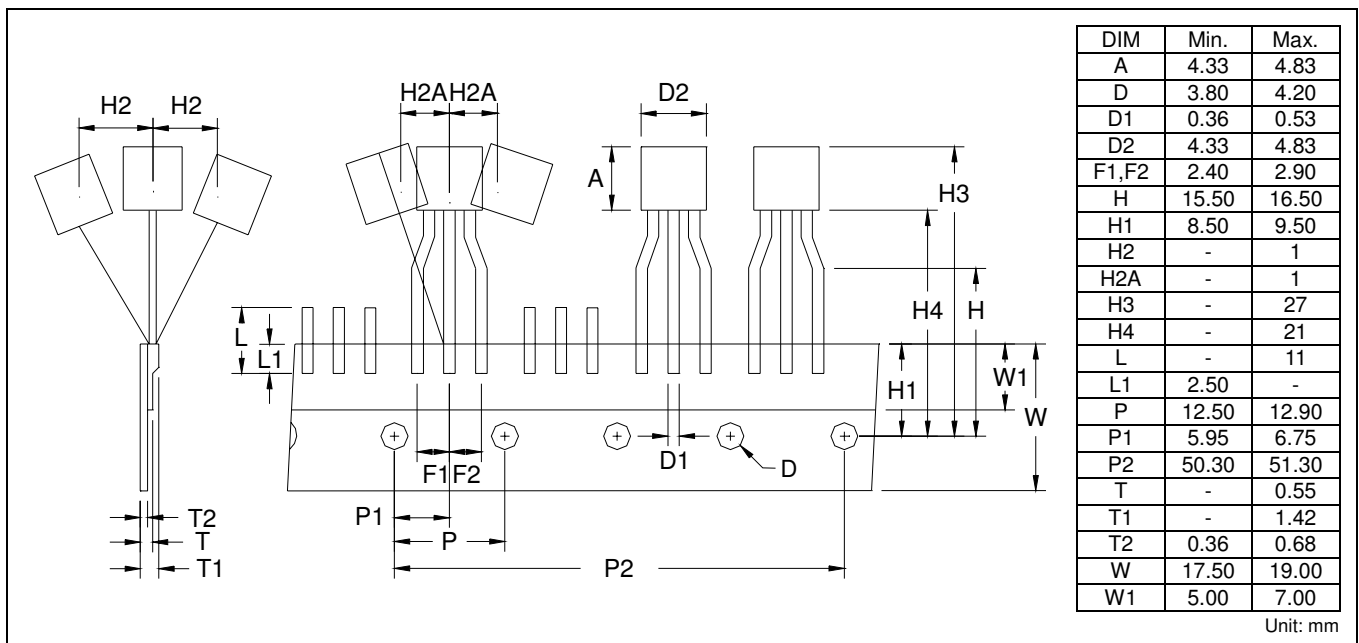




TO-92 Dimension



TO-92 Taping Dimension



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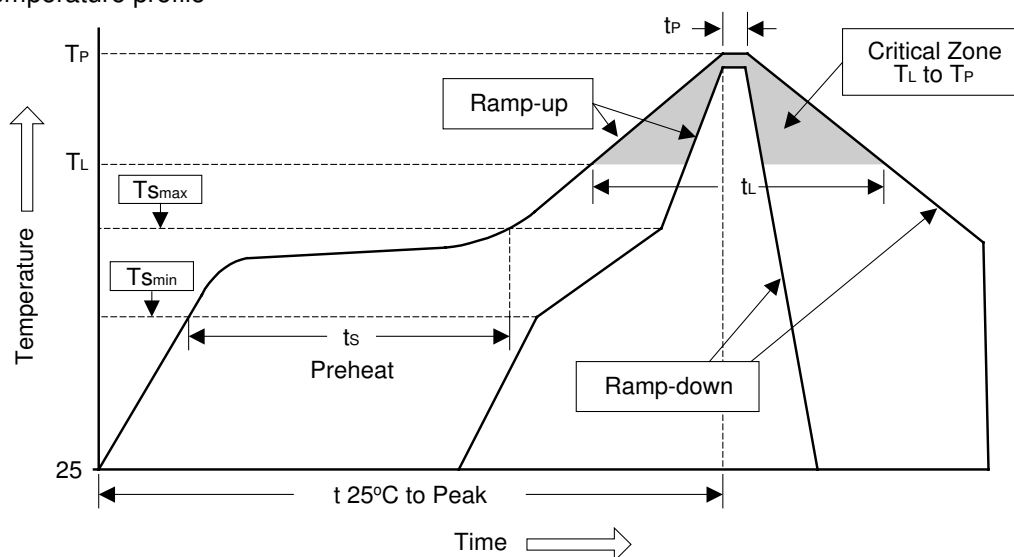


Soldering Methods for HSMC's Products

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	5sec ±1sec
Pb-Free devices.	260°C +0/-5°C	5sec ±1sec