Descriptions

This is Silicon NPN transistor in a DFN1006-3L Plastic Package.

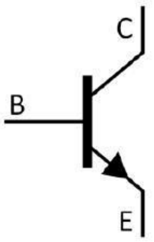
Features

- Low current
- Low voltage,HF Product.

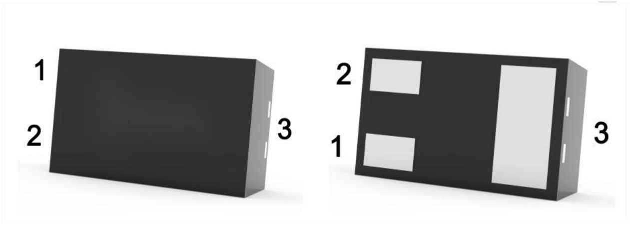
Applications

General purpose amplifier and switching

Equivalent Circuit



Pinning



PIN 1：Base PIN 2： Emitter PIN 3：Collector

hFE Classifications & Marking

h_{FE} Range	100～300
Marking	·H1A

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	40	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	200	mA
*Collector Power Dissipation	P_C	100	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃
Thermal Resistance, Junction to Ambient	R_{thJA}	310	℃/W
Thermal Resistance, Junction to Lead	R_{thJL}	120	℃/W

Note：Mount on the PCBA

Electrical Characteristic Curve

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=10μA I_E=0	60			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=1.0mA I_B=0	40			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=10μA I_C=0	6.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=30V I_E=0			0.05	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=3.0V I_C=0			0.05	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=1.0V I_C=10mA	100		300	
	$h_{FE(2)}$	V_{CE}=1.0V I_C=100mA	30			
	$h_{FE(3)}$	V_{CE}=1.0V I_C=50mA	60			
	$h_{FE(4)}$	V_{CE}=1.0V I_C=1.0mA	70			
	$h_{FE(5)}$	V_{CE}=1.0V I_C=0.1mA	40			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	I_C=10mA I_B=1.0mA			0.2	V
	$V_{CE(sat)(2)}$	I_C=50mA I_B=5.0mA			0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)(1)}$	I_C=10mA I_B=1.0mA	0.65		0.85	V
	$V_{BE(sat)\ (2)}$	I_C=50mA I_B=5.0mA			0.95	V
Transition Frequency	f_T	V_{CE}=20V I_C=10mA f=100MHz	300			MHz
Output Capacitance	C_{ob}	V_{CB}=5.0V f=1.0MHz			4.0	pF
Storage Time	t_{stg}	V_{CC}=3.0V I_C=10mA I_{B1}=-I_{B2}=1.0mA			200	ns
Fall Time	t_f	V_{CC}=3.0V I_C=10mA I_{B1}=-I_{B2}=1.0mA			50	ns
Delay Time	t_d	V_{CC}=3.0V V_{BE}=0.5V I_C=10mA I_{B1}=1.0mA			35	ns
Rise Time	t_r	V_{CC}=3.0V V_{BE}=0.5V I_C=10mA I_{B1}=1.0mA			35	ns
Input Capacitance	C_{ib}	V_{EB}=0.5V f=1.0MHz			8.0	pF

Electrical Characteristic Curve

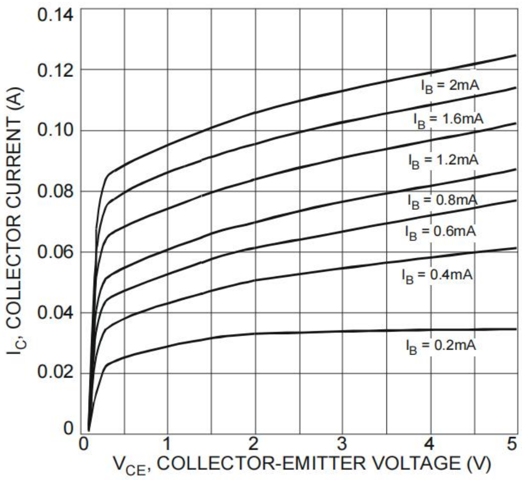


Fig. 1 Typical Collector Current
vs. Collector-Emitter Voltage

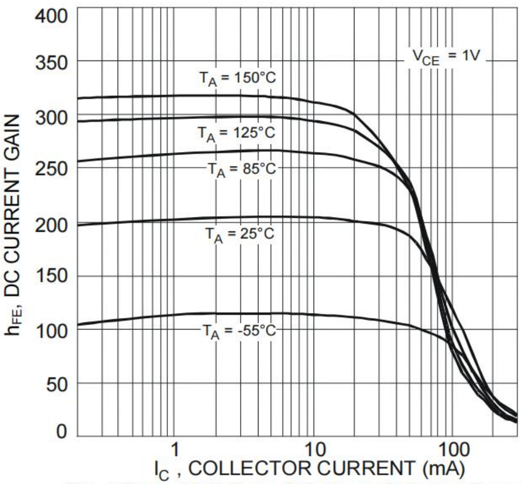


Fig. 2 Typical DC Current Gain vs. Collector Current

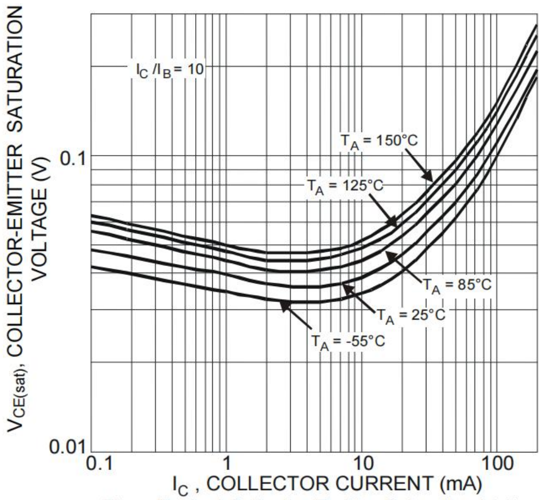


Fig. 3 Typical Collector-Emitter Saturation Voltage
vs. Collector Current

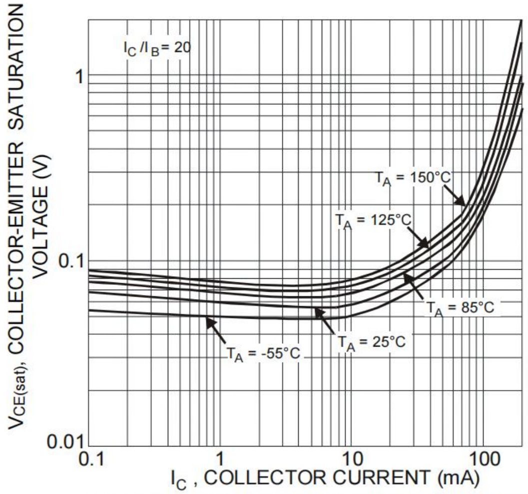


Fig. 4 Typical Collector-Emitter Saturation Voltage
vs. Collector Current

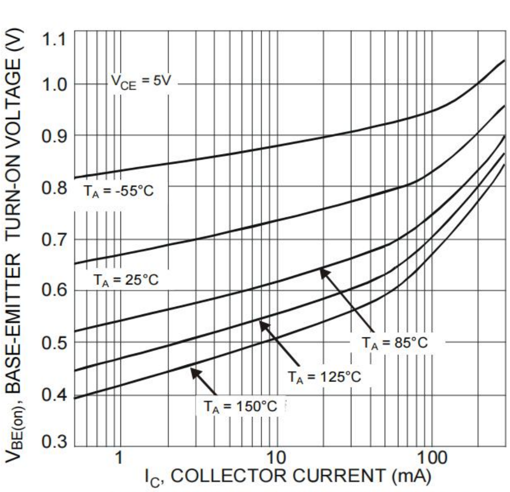


Fig. 5 Typical Base-Emitter Turn-On Voltage
vs. Collector Current

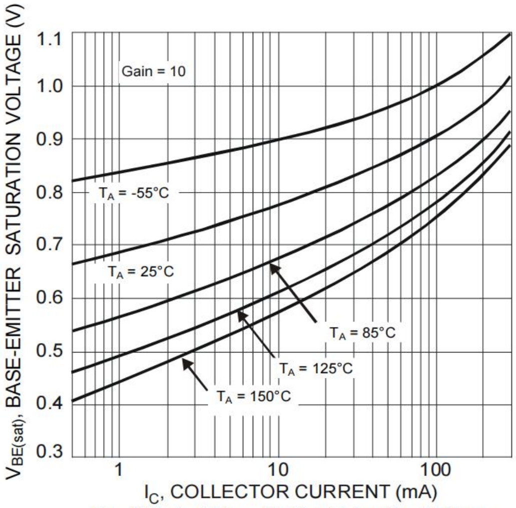
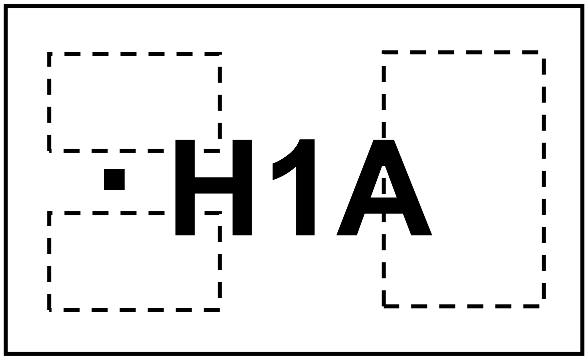


Fig. 6 Typical Base-Emitter Saturation Voltage
vs. Collector Current

Package Dimensions



Note:

·:	Identify
H:	Company Code
1A:	Product Type Code

Packaging SPEC

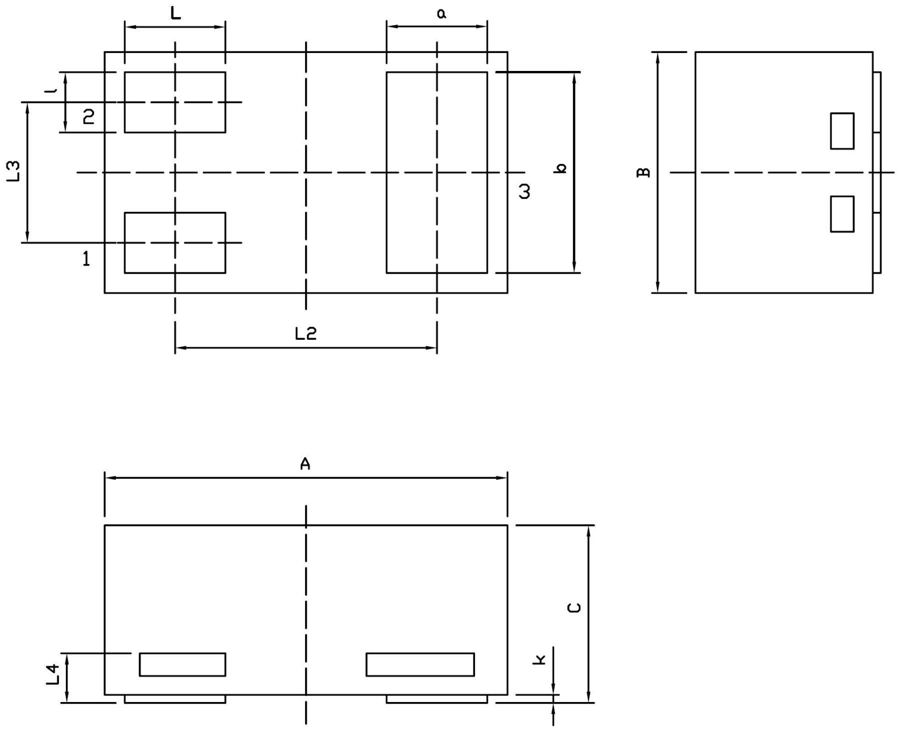
REEL

Package Type	Units					Dimension (unit：mm^3)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
DFN1006-3L	10,000	10	100,000	4	400,000	7″ ×8	210×205×205	445×230×435

Package Dimensions

DFN1006-3L

Unit:mm



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	0.95	1.00	1.05
B	0.55	0.60	0.65
C	0.45	0.50	0.55
L	0.22	0.26	0.30
L2	-	0.65	-
L3	-	0.35	-
L4	-	0.152	-
a	0.21	0.25	0.29
b	0.47	0.51	0.55
l	0.11	0.15	0.19
k	0.00	-	0.03

Rev.03 202108