

/ Descriptions

Silicon PNP transistor in a Plastic Package.

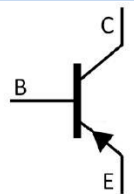
/ Features

High DC Current Gain, Low Collector to Emitter Saturation Voltage,HF product.

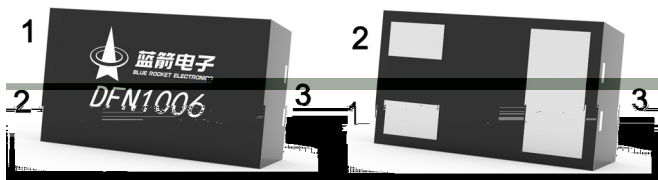
/ Applications

General purpose amplifier and switching.

/ Equivalent Circuit



/ Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h _{FE} Range	100 300
Marking	H2AK

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-40	V
Collector to Emitter Voltage	V_{CEO}	-40	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-200	mA
*Collector Power Dissipation	P_C	100	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 150	°C
Thermal Resistance, Junction to Ambient	R_{thJA}	310	/W
Thermal Resistance, Junction to Lead	R_{thJL}	120	/W

* PCB Mount on the PCBA

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C = -10\mu A$ $I_E = 0$	-40			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C = -1.0mA$ $I_B = 0$	-40			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E = -10\mu A$ $I_C = 0$	-5.0			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			
	$h_{FE(4)}$	$V_{CE} = -1.0V$ $I_C = -1.0mA$	80			
	$h_{FE(5)}$	$V_{CE} = -1.0V$ $I_C = -0.1mA$	60			
Collector-Emitter Saturation voltage	$V_{CE(sat)(1)}$	$I_C = -10mA$ $I_B = -1.0mA$			-0.25	V
	$V_{CE(sat)(2)}$	$I_C = -50mA$ $I_B = -5.0mA$			-0.4	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	$V_{CE} = -20V$ $I_C = -10mA$ $f = 100MHz$	250			MHz
Output Capacitance	C_{ob}	$V_{CB} = -5.0V$ $f = 1.0MHz$			4.5	pF
Storage Time	t_{stg}	$V_{CC} = -3.0V$ $I_C = -10mA$ $I_{B1} = -I_{B2} = -1.0mA$			225	ns
Fall Time	t_f	$V_{CC} = -3.0V$ $I_C = -10mA$ $I_{B1} = -I_{B2} = -1.0mA$			75	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}	$V_{EB} = -0.5V$ $f = 1.0MHz$			10	pF

/ Electrical Characteristic Curve

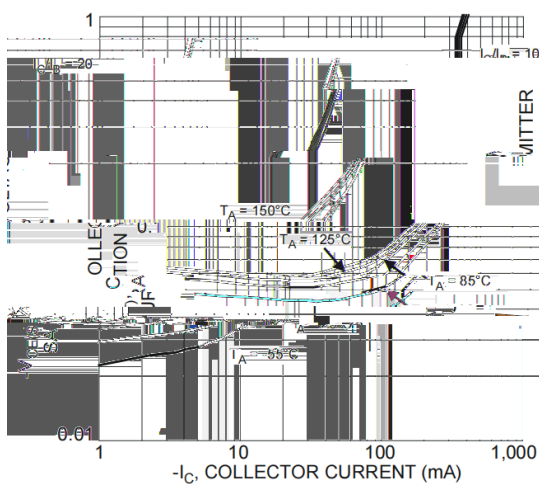
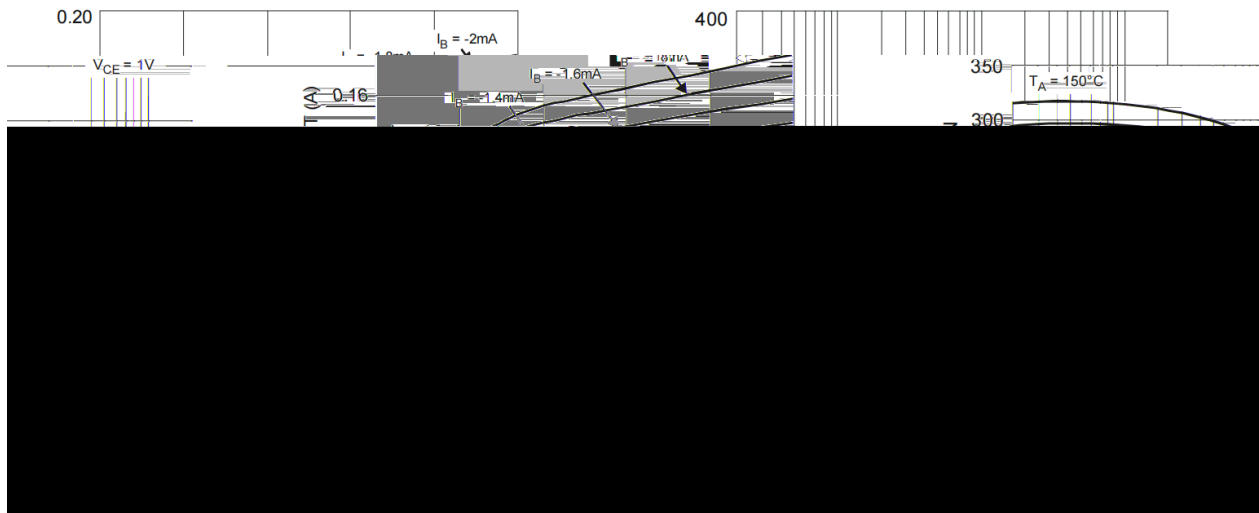


Fig. 3 Typical Collector-Emitter Saturation Voltage
vs. Collector Current

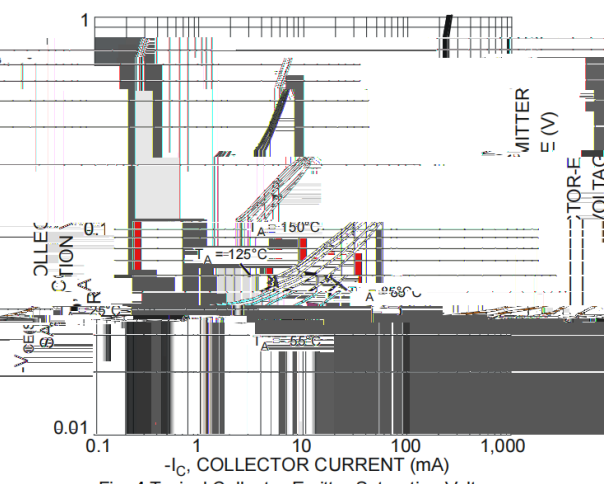


Fig. 4 Typical Collector-Emitter Saturation Voltage
vs. Collector Current

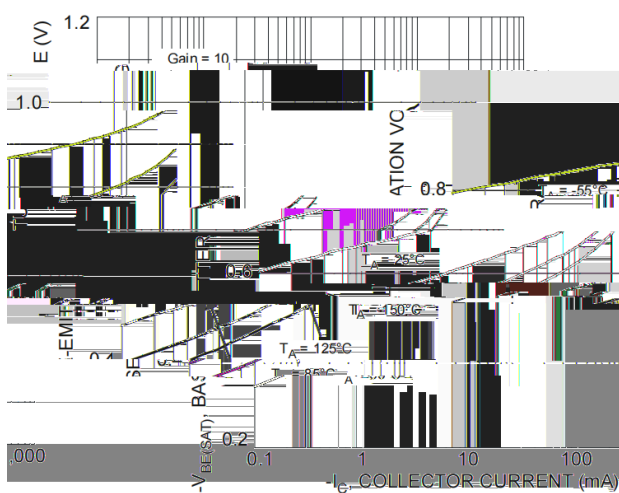


Fig. 5 Typical Base-Emitter Saturation Voltage
vs. Collector Current

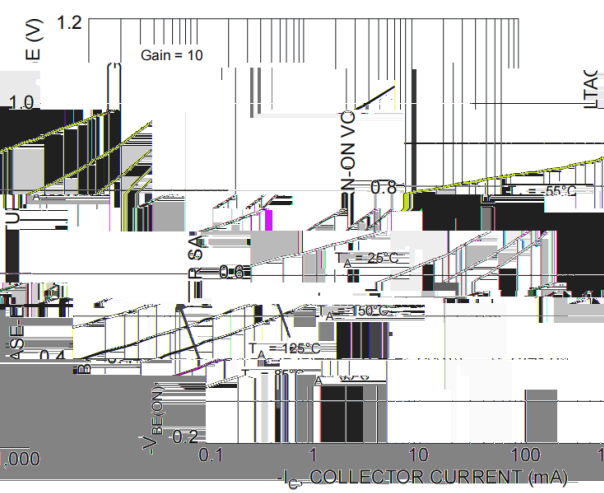
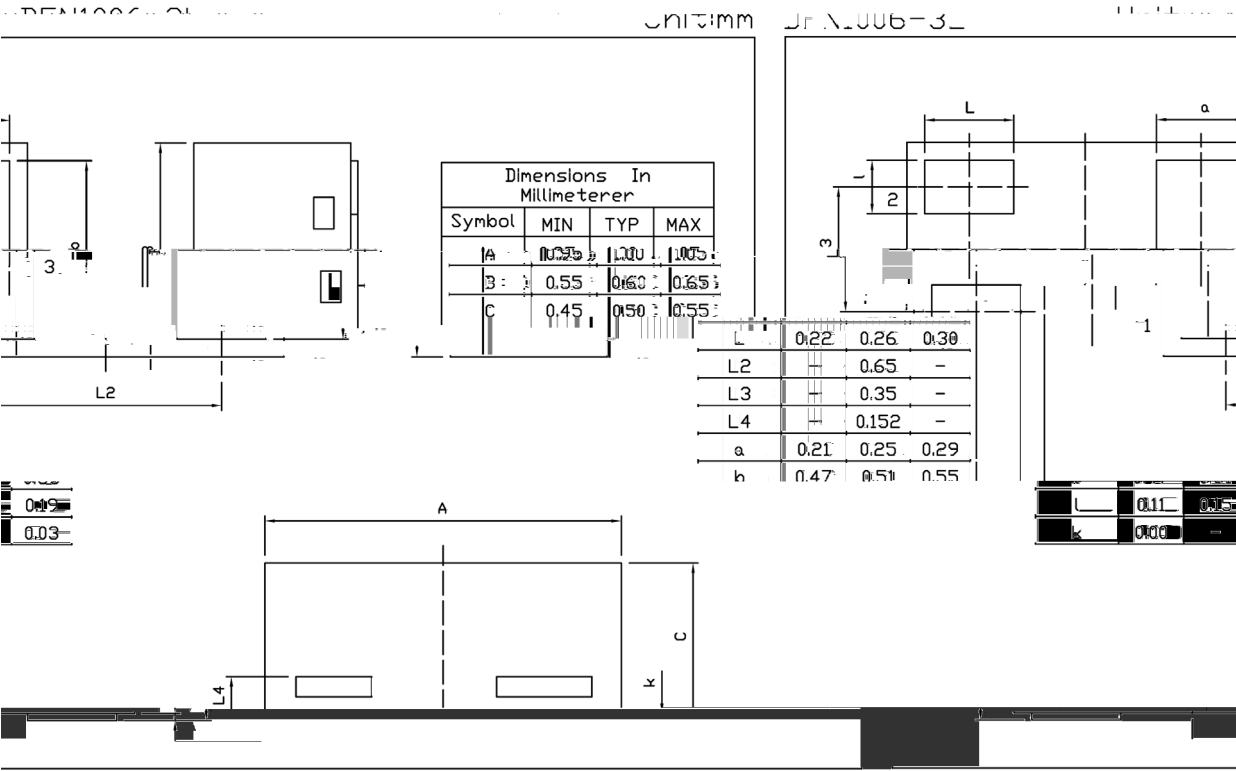
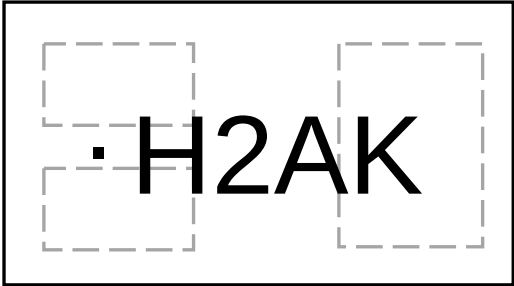


Fig. 5 Typical Base-Emitter Saturation Voltage
vs. Collector Current

/ Package Dimensions



/ Marking Instructions



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2AK

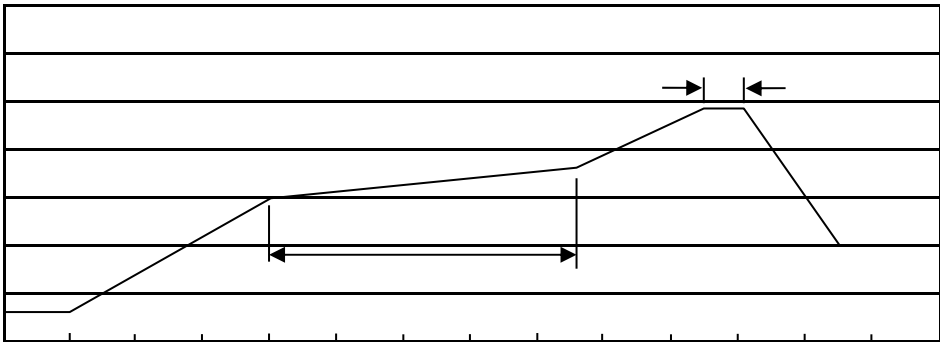
Note:

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Identify
Company Code
Product Type Code

2AK

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



- 1

150 180

60 90sec;
- 2

245 5

5 0.5sec;
- 3

2 10 /sec.
- Note:
1.Preheating:150~180 , Time:60~90sec.
2.Peak Temp.:245 5 , Duration:5 0.5sec.
3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.:260±5℃ Time:10±1 sec

/ 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	6	600,000	7 ×8	180×120×180	390×385×205

/ Notices