

/ Descriptions

Silicon PNP transistor in a SOT-23 Plastic Package.

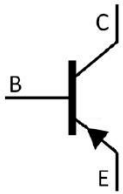
/ Features

Collector currents up to 500 mA.

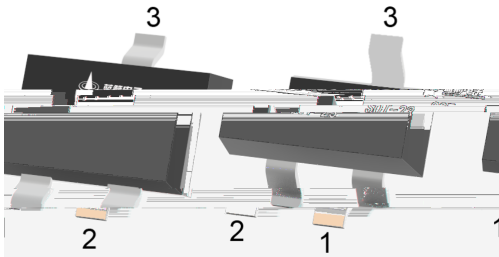
/ Applications

General purpose amplifier and switch requiring.

/ Equivalent Circuit



/ Pinning



PIN 1 Base

PIN 2 Emitter

PIN 3 Collector

/ h_{FE} Classifications & Marking

h _{FE} Range	100 300
Marking	2TH

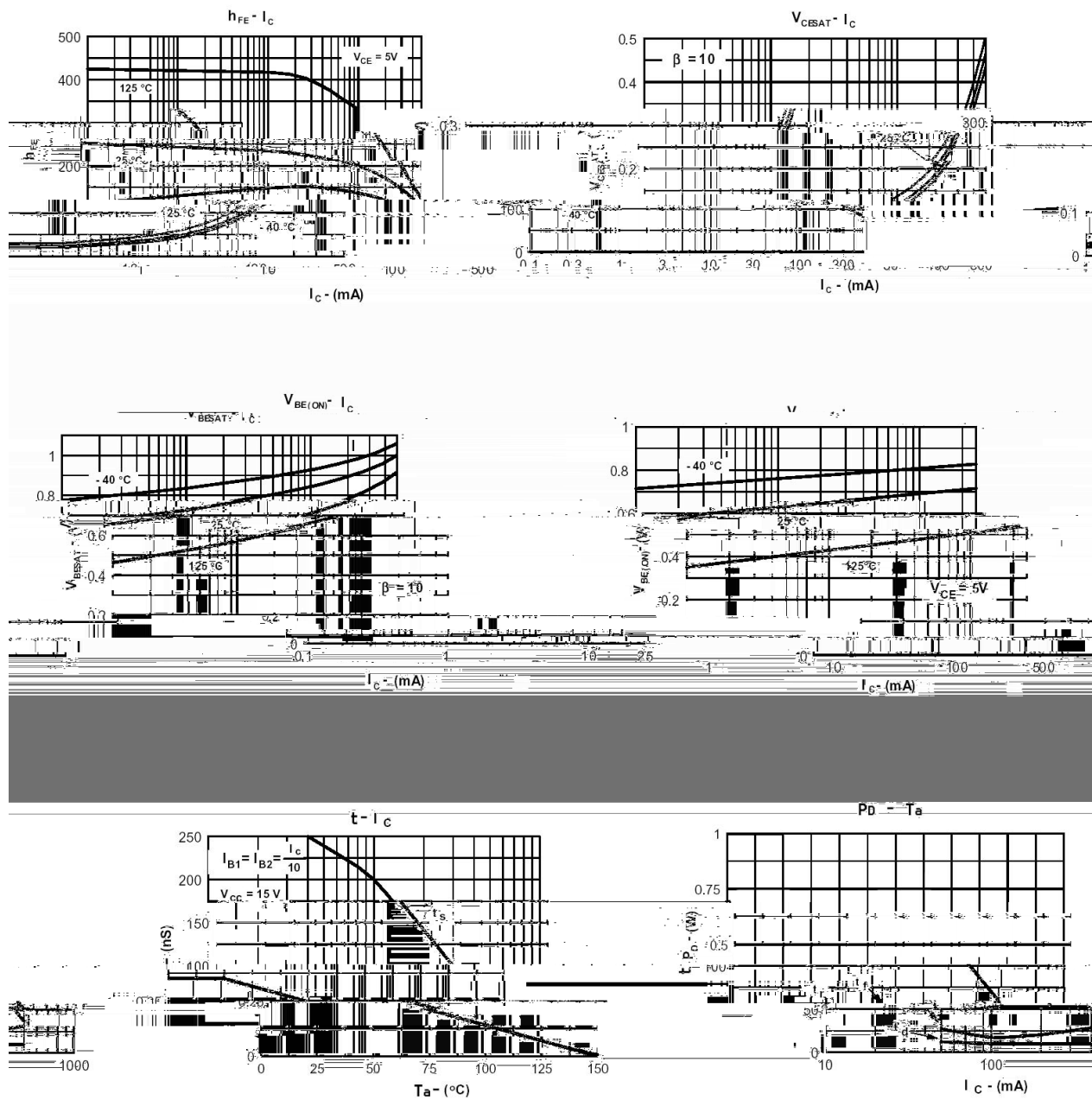
/ Absolute Maximum Ratings(Ta=25)

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	-600	mA
Collector Power Dissipation	P_C	350	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C = -0.1mA$ $I_E = 0$	-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}	$I_E = -0.1mA$ $I_C = 0$	-5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = -40V$ $I_E = 0$			-50	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = -5.0V$ $I_C = 0$			-50	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE} = -2.0V$ $I_C = -150mA$	100		300	
	$h_{FE(2)}$	$V_{CE} = -1.0V$ $I_C = -0.1mA$	30			
	$h_{FE(3)}$	$V_{CE} = -1.0V$ $I_C = -1.0mA$	60			
	$h_{FE(4)}$	$V_{CE} = -1.0V$ $I_C = -10mA$	100			
	$h_{FE(5)}$	$V_{CE} = -2.0V$ $I_C = -500mA$	20			
Collector-Emitter Saturation voltage	$V_{CE(sat) (1)}$	$I_C = -150mA$ $I_B = -15mA$			-0.4	V
	$V_{CE(sat) (2)}$	$I_C = -500mA$ $I_B = -50mA$			-0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat) (1)}$	$I_C = -150mA$ $I_B = -15mA$	-0.75		-0.95	V
	$V_{BE(sat) (2)}$	$I_C = -500mA$ $I_B = -50mA$			-1.3	V
Transition Frequency	f_T	$V_{CE} = -10V$ $I_C = -20mA$ $f = 100MHz$	200			MHz
Delay Time	t_d	$V_{CC} = -30V$ $I_C = -150mA$ $I_{B1} = -15mA$			15	ns
Rise Time	t_r				20	ns
Storage Time	t_s	$V_{CC} = -30V$ $I_C = -150mA$ $I_{B1} = I_{B2} = -15mA$			225	ns
Fall Time	t_f				30	ns

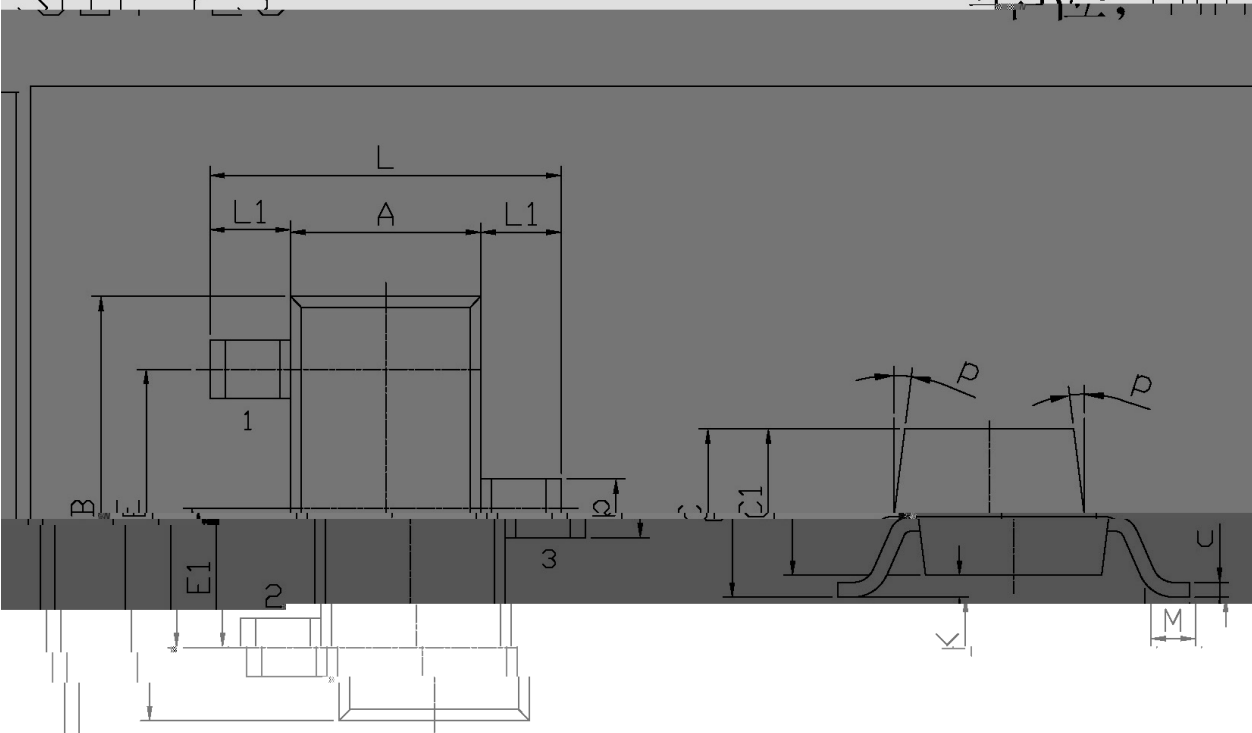
/ Electrical Characteristic Curve



/ Package Dimensions

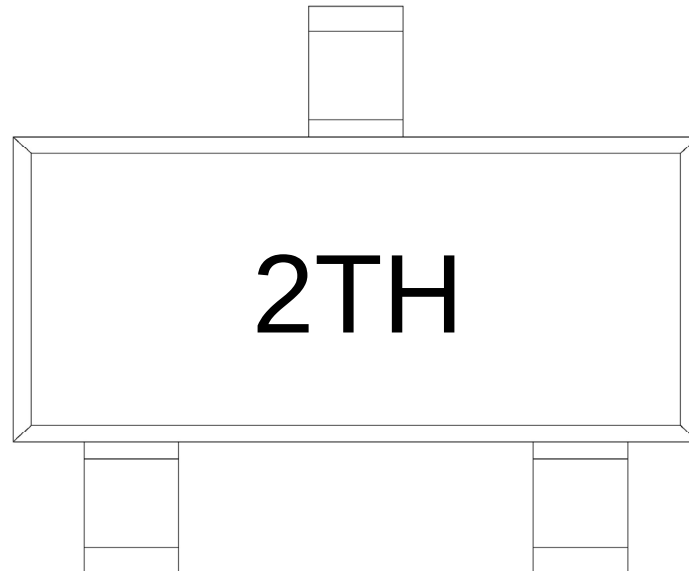
SOT-23

单位: mm



Dimensions in Millimeters			Dimensions in Millimeters		
Symbol	Min	Max	Symbol	Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20

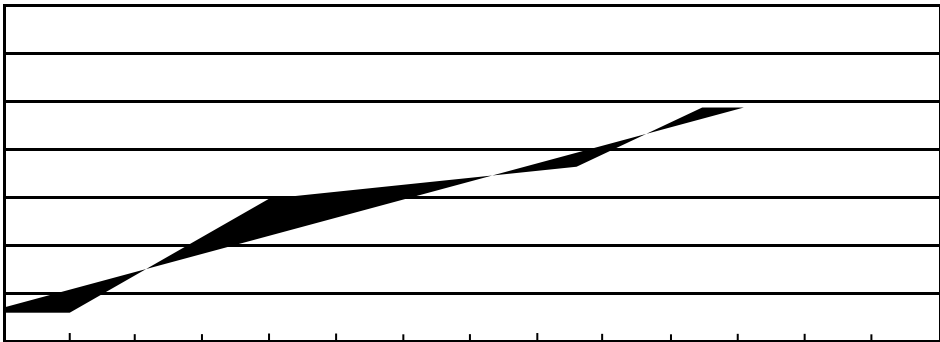
/ Marking Instructions



Note:

Product Type Code
Company Code

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



Note:

- 1

150 180

60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245 5

5 0.5sec;

2.Peak Temp.:245 5 , Duration:5 0.5sec.
- 3

2 10

/sec.

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
SOT-23	3,000	10	30,000	6	180,000	7 × 8	180×120×180	390×385×205

/ Notices