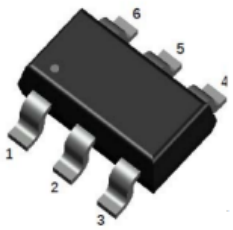
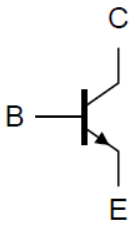
NPN Low VCEsat transistor

SOT-23-6L





Pin	Symbol	Description
1	C	collector
2	C	collector
3	B	base
4	E	emitter
5	C	collector
6	C	collector

Features

- Ultra low collector-emitter saturation voltage VCEsat
- 4 A continuous collector current capability IC
- High efficiency due to less heat generation

Application

- Power management functions
- Charging circuits

Mechanical data

- **Package**: SOT-23-6L
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings (T_a=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				C7
Collector-base voltage	V_{CBO}	V	I_C=100uA, I_E=0	60
Collector-emitter voltage	V_{CEO}	V	I_C=1mA, I_B=0	40
Emitter-base voltage	V_{EBO}	V	I_E=100uA, I_C=0	5
Collector current	I_C	A		4
Peak Collector current	I_{CM}	A	single pulse,tp≤1ms	15
Base current	I_B	A		0.8
Power dissipation	P_D(1)	mW		360
	P_D(2)	W		1.5
Thermal resistance, junction-to-ambient	$R_{\theta J-A}$(2)	℃/W		83.33
Thermal resistance, junction-to-case	$R_{\theta J-C}$(2)	℃/W		66.66
Junction temperature	T_J	℃		-55 to +150
Storage temperature	T_{STG}	℃		-55 to +150

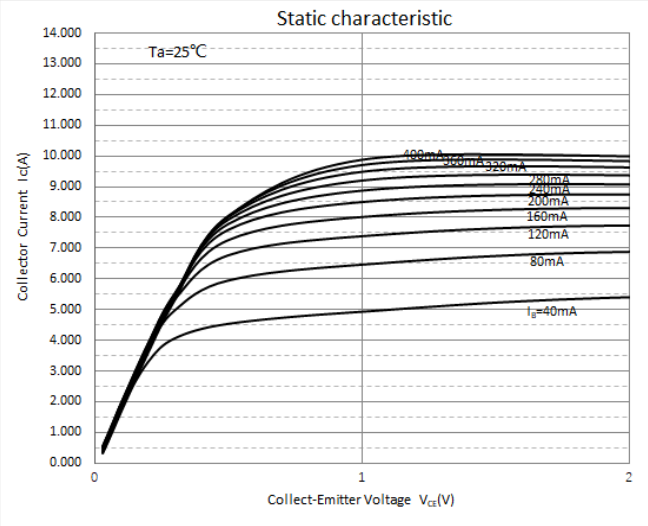
Note: (1) Device mounted on an FR4 Printed-Circuit Board (PCB), 35 um single-sided copper, tin-plated and standard foolprint

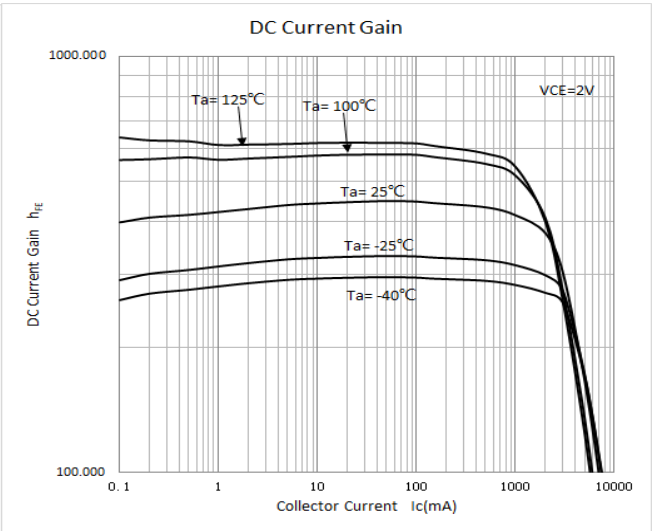
(2) Device mounted on the 40mm*40mm*1.1mm single layer FR-4 PCB board with 1 in^2 pad of 2oz. Copper

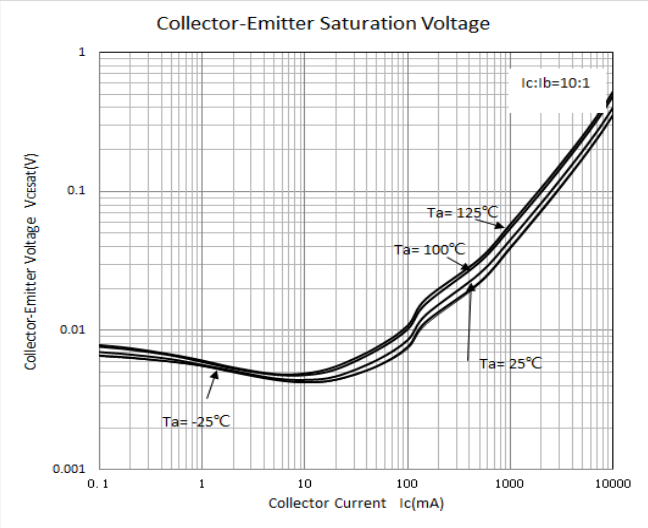
Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	I_C=100uA, I_E=0	60		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C=1mA, I_B=0	40		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=100uA, I_C=0	5		
Collector-base cut-off current	I_{CBO}	nA	V_{CB}=40V I_E=0			100
Emitter-base cut-off current	I_{EBO}	nA	V_{EB}=5V I_C=0			100
Collector Cutoff Current	I_{CES}	nA	V_{CE}=30V V_{BE}=0			100
DC current gain	h_{FE}		V_{CE}=2V I_C=0.5A	300		
			V_{CE}=2V I_C=1A	300		
			V_{CE}=2V I_C=2A	250		
			V_{CE}=2V I_C=4A	100		
			V_{CE}=2V I_C=6A	50		
Collector-emitter saturation voltage	$V_{CE(sat)}$	mV	I_C=0.5A I_B=50mA			60
			I_C=1A I_B=50mA			110
			I_C=2A I_B=200mA			180
			I_C=4A I_B=400mA			300
			I_C=6A I_B=600mA			450
Collector-emitter saturation resistance	$R_{CE(sat)}$	mΩ	I_C=6A I_B=600mA			75
Base-emitter saturation voltage	$V_{BE(sat)}$	V	I_C=0.5A I_B=50mA			0.85
			I_C=1A I_B=50mA			0.9
			I_C=1A I_B=100mA			1
			I_C=4A I_B=400mA			1.1
Base-emitter turn-on voltage	V_{BE}	V	V_{CE}=2V I_C=2A			1

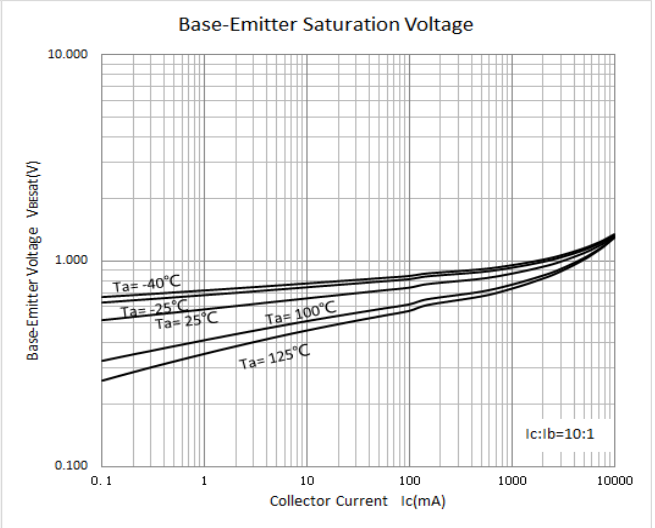
■Ordering Information

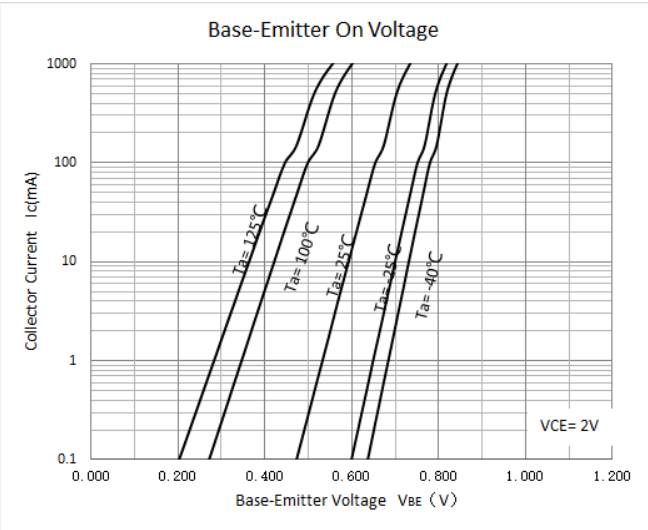
Preferred P/N	Packing code	Unit weight(mg)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
PBSS302ND	F2	Approximate 15.6	3000	30000	120000	7” reel

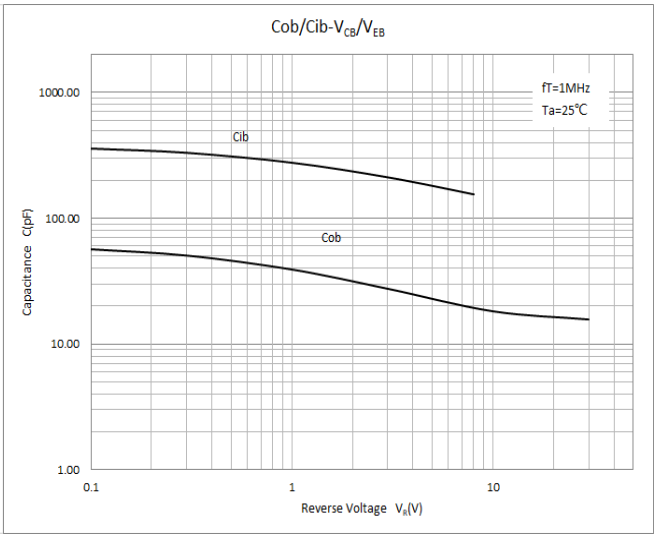

Static characteristic
Ta=25℃
Collector Current Ic(A)
Collect-Emitter Voltage V_{CE}(V)
488mA
360mA
328mA
280mA
240mA
200mA
160mA
120mA
80mA
I_B=40mA

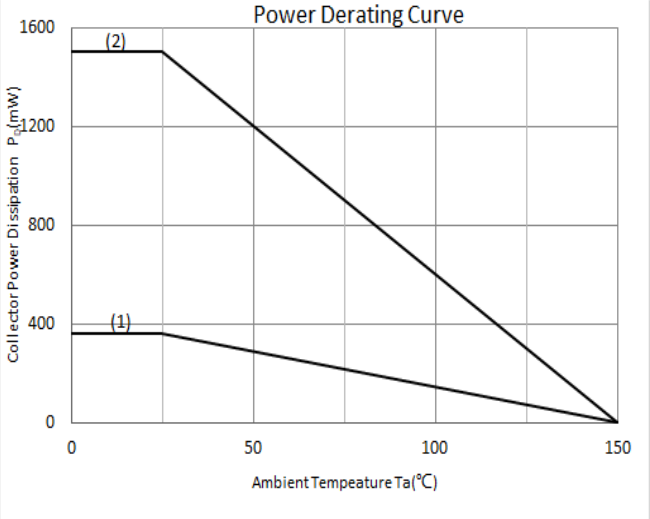

DC Current Gain
VCE=2V
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
Ta= -40℃
DC Current Gain h_{FE}
Collector Current Ic(mA)

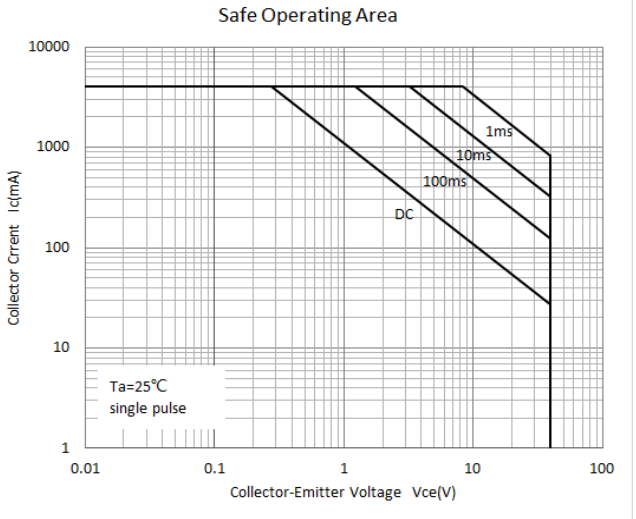

Collector-Emitter Saturation Voltage
Ic:Ib=10:1
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
Collector-Emitter Voltage Vcesat(V)
Collector Current Ic(mA)


Base-Emitter Saturation Voltage
Ta= -40℃
Ta= -25℃
Ta= 25℃
Ta= 100℃
Ta= 125℃
Ic:Ib=10:1
Base-Emitter Voltage VBEsat(V)
Collector Current Ic(mA)


Base-Emitter On Voltage
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
Ta= -40℃
VCE= 2V
Collector Current Ic(mA)
Base-Emitter Voltage VBE（V）

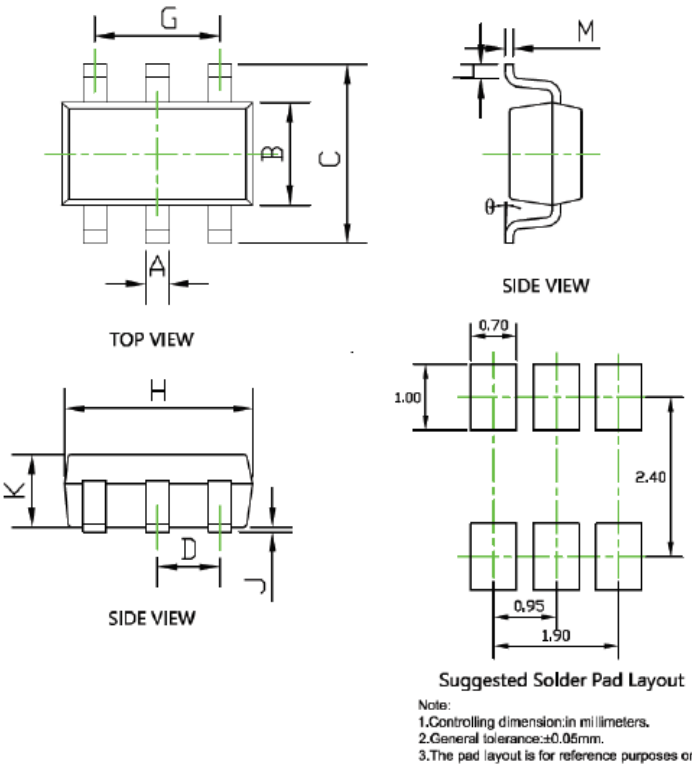

Cob/Cib-V_{CB}/V_{EB}
fT=1MHz
Ta=25℃
Cib
Cob
Capacitance C(pF)
Reverse Voltage V_R(V)





■ Outline Dimensions

SOT-23-6L



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.012	0.020	0.300	0.500
B	0.059	0.067	1.500	1.700
C	0.104	0.116	2.650	2.950
D	0.037BSC		0.950BSC	
G	0.075BSC		1.900BSC	
H	0.111	0.119	2.820	3.020
J	0.000	0.004	0.000	0.100
K	0.041	0.045	1.050	1.150
L	0.012	0.024	0.300	0.600
M	0.004	0.008	0.100	0.200
θ	0°	8°	0°	8°

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