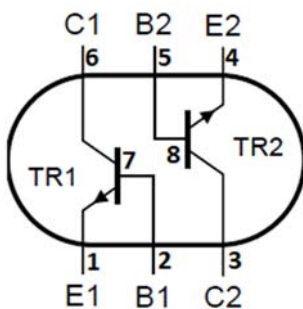
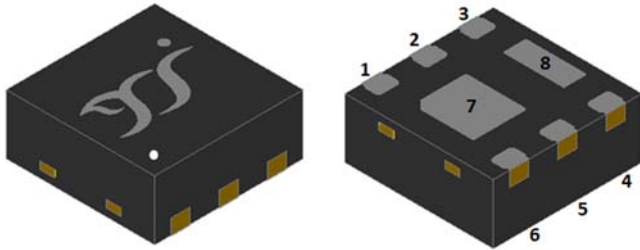


NPN Low VCEsat transistor



Features

- Very low collector-emitter saturation voltage VCEsat
- High collector current capability IC and ICM
- High energy efficiency due to less heat generation
- Moisture Sensitivity Level 1

Application

- Load switch
- Battery-driven devices
- Power management

Mechanical data

- **Package:** DFN2020-6L
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				4220PANS
Collector-base voltage	V_{CBO}	V	$I_C=100\mu A, I_E=0$	20
Collector-emitter voltage	V_{CEO}	V	$I_C=1mA, I_B=0$	20
Emitter-base voltage	V_{EBO}	V	$I_E=100\mu A, I_C=0$	7
Collector current	I_C	A		2
Peak Collector current	I_{CM}	A	single pulse, $t_p \leq 1ms$	3
Base current	I_B	A		0.3
Power dissipation	P_D	W		1.5
Thermal resistance, junction-to-ambient	$R_{\theta JA}$	°C/W		83.33
Thermal resistance, junction-to-case	$R_{\theta JC}$	°C/W		66.66
Junction temperature	T_J	°C		-55 to +150
Storage temperature	T_{STG}	°C		-55 to +150

Note: Device mounted on the 40mm*40mm*1.1mm single layer FR-4 PCB board with 1 in² pad of 2oz. Copper



YJBS4220PANS

RoHS
COMPLIANT

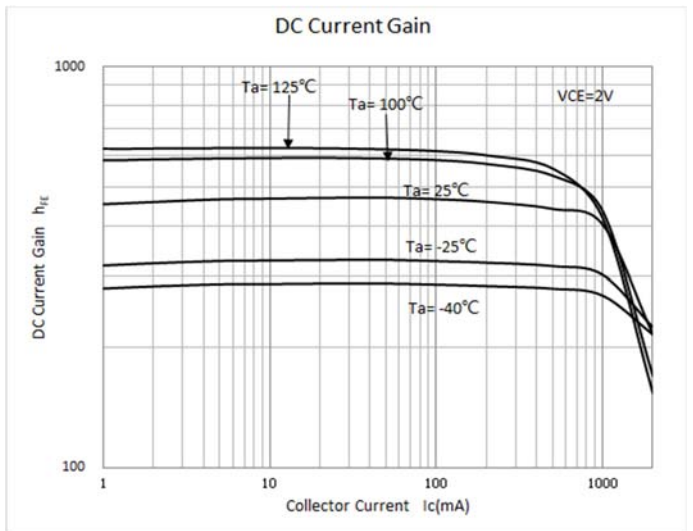
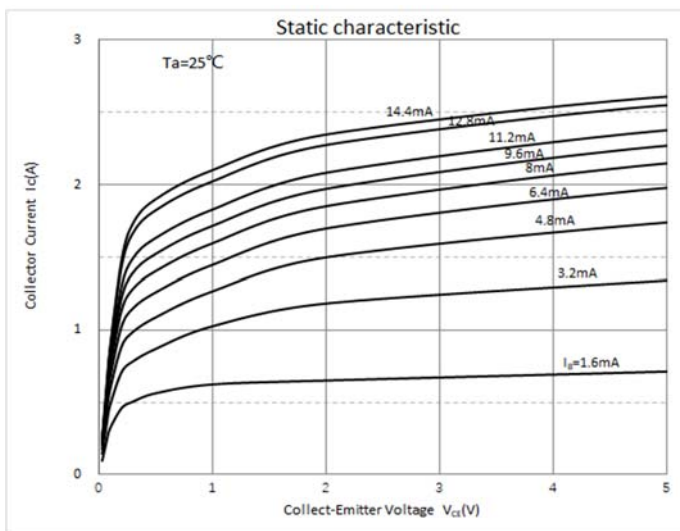
■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	I _C =100uA, I _E =0	20		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =1mA, I _B =0	20		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =100uA, I _C =0	7		
Collector-base cut-off current	I _{CBO}	nA	V _{CB} =16V 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} =16V V _{BE} =0			100
DC current gain	h _{FE}		V _{CE} =2V I _C =0.1A	250		
			V _{CE} =2V I _C =0.5A	230		
			V _{CE} =2V I _C =1A	200		
			V _{CE} =2V I _C =2A	150		
Collector-emitter saturation voltage	V _{CE(sat)}	mV	I _C =0.5A I _B =50mA			90
			I _C =1A I _B =50mA			170
			I _C =2A I _B =200mA			320
Collector-emitter saturation resistance	R _{CE(sat)}	mΩ	I _C =1A I _B =50mA			170
Base-emitter saturation voltage	V _{BE(sat)}	V	I _C =0.5A I _B =50mA			1
			I _C =1A I _B =50mA			1.1
			I _C =2A I _B =200mA			1.3
Base-emitter turn-on voltage	V _{BE}	V	V _{CE} =2V I _C =0.5A			0.9
Collector Capacitance	Cob	pF	V _{CB} =10V, I _E =0A, f=1MHz		91	

■ Ordering Information

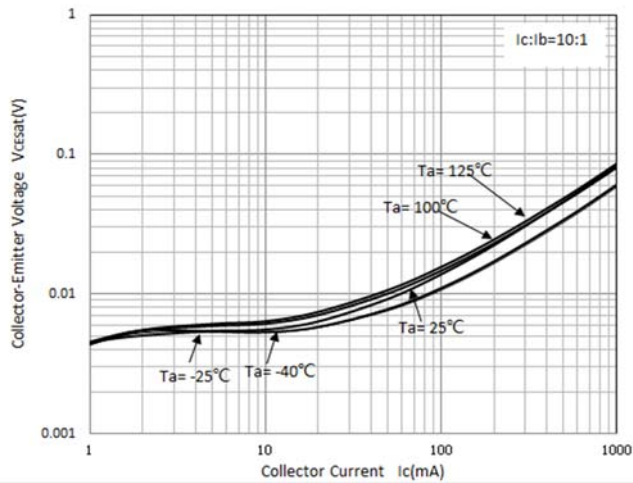
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
YJBS4220PANS	F1	Approximate 0.01	3000	30000	120000	7" reel

■ Characteristics

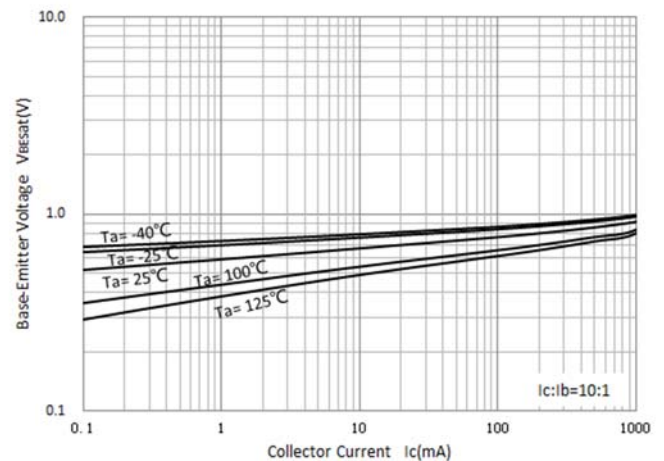




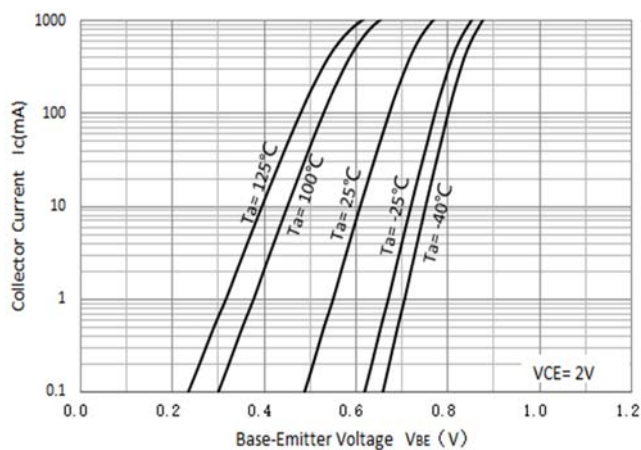
Collector-Emitter Saturation Voltage



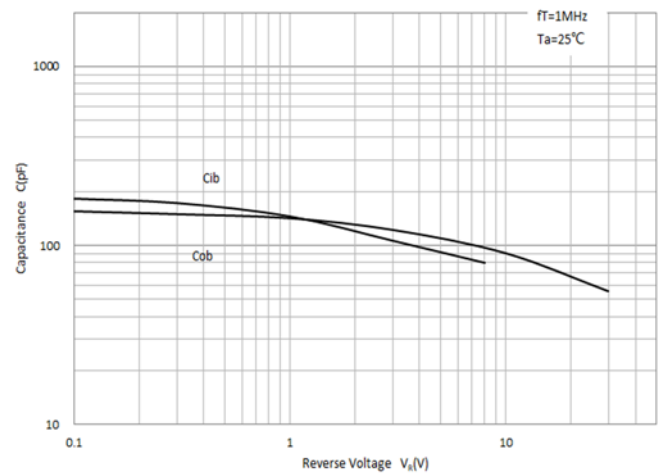
Base-Emitter Saturation Voltage



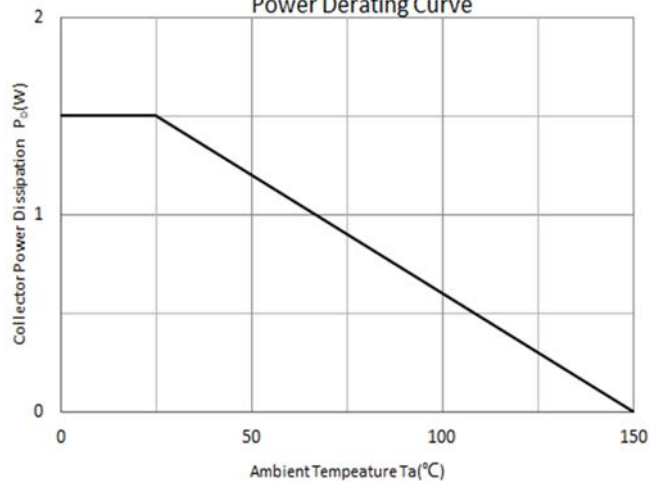
Base-Emitter On Voltage



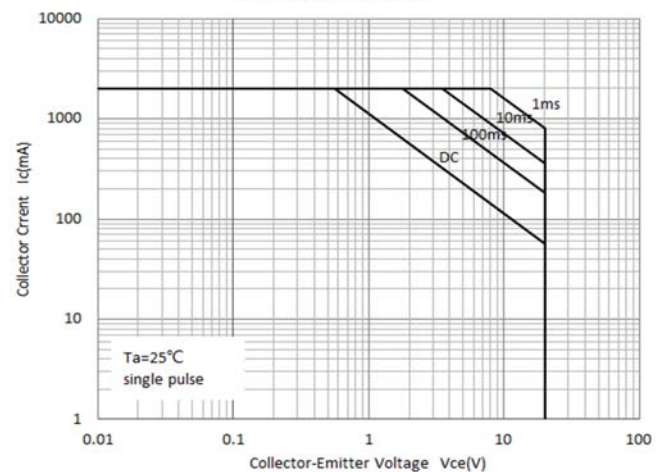
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



Power Derating Curve

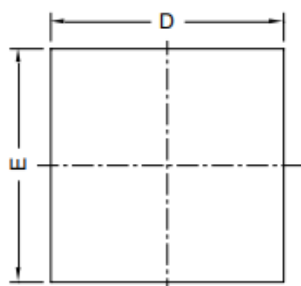
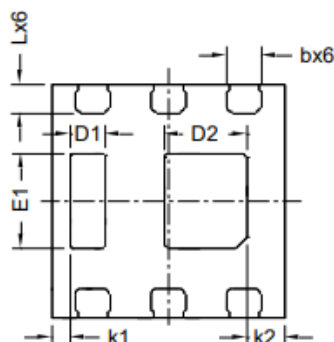
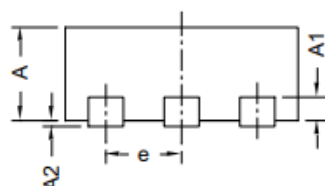
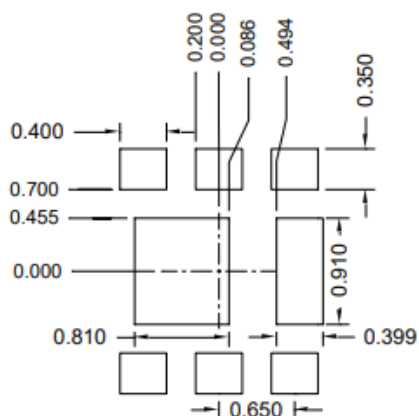


Safe Operating Area





■ Outline Dimensions

Top View
正面视图Bottom View
背面视图Side View
侧面视图Suggested Solder Pad Layout
Top View

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	1.90	2.00	2.10
E	1.90	2.00	2.10
A	0.70	0.80	0.90
A1	0.20 BSC		
A2			0.10
D1	0.20	0.30	0.40
D2	0.61	0.71	0.81
E1	0.71	0.81	0.91
L	0.15	0.25	0.35
b	0.20	0.30	0.40
e	0.65 BSC		
k1	0.156 BSC		
k2	0.326 BSC		

Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.10 mm.
3. The pad layout is for reference purposes only.



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