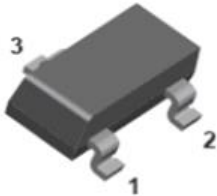
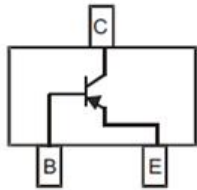


NPN Low VCEsat Transistor



SOT-23

Features

- Epoxy meets UL-94 V-0 flammability rating
- Low collector-emitter saturation voltage VCEsat
- High collector current gain (hFE) at high IC
- High efficiency due to less heat generation

Mechanical Data

- **Package:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 51t

■ Thermal Characteristics (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V _{CBO}	V	I _C =-100μA, I _E =0	-40
Collector-Emitter Voltage	V _{CEO}	V	I _C =-10mA, I _B =0	-40
Emitter-Base Voltage	V _{EBO}	V	I _E =-100μA, I _C =0	-5
Collector Current -Continuous	I _C	A		-1
Peak Collector current	I _{CM}	A	single pulse, tp≤1ms	-2
Power dissipation	P _D ⁽¹⁾	mW		300
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W		417
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W		333
Junction Temperature	T _J	°C		-55 to +150
Storage Temperature	T _{STG}	°C		-55 to +150

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

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJBS5140T	F2	Approximate 0.008	3000	30000	120000	7" reel



YJBS5140T

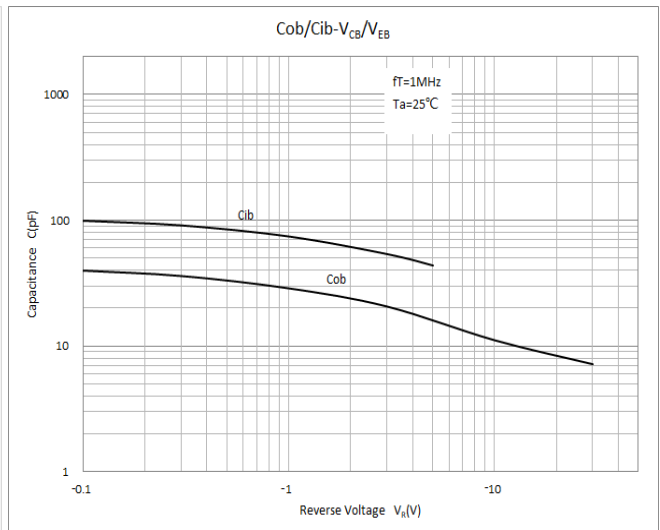
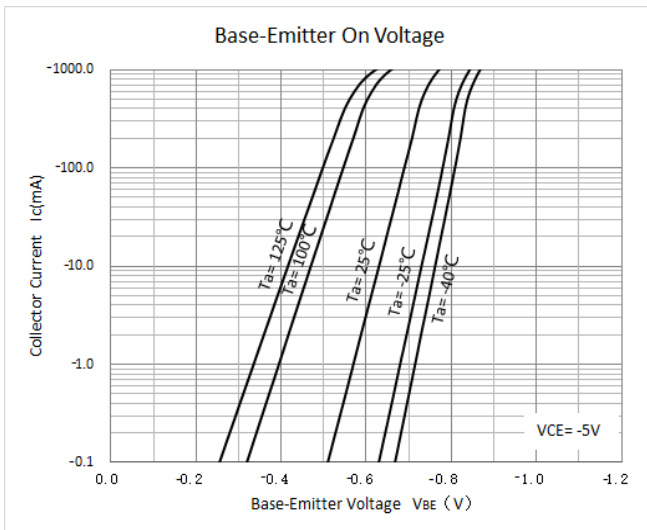
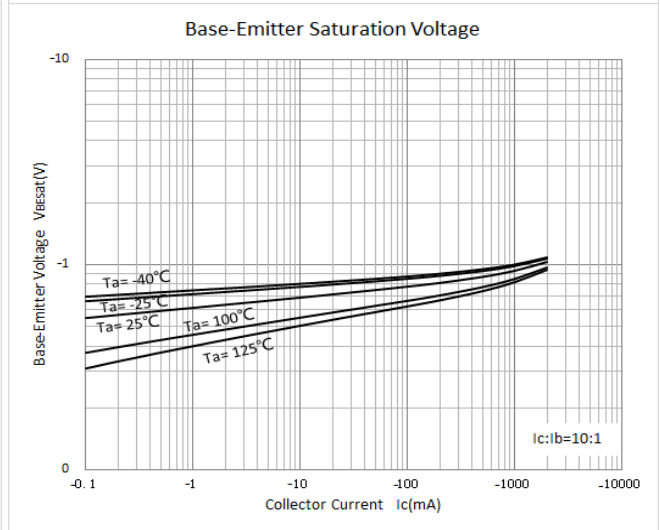
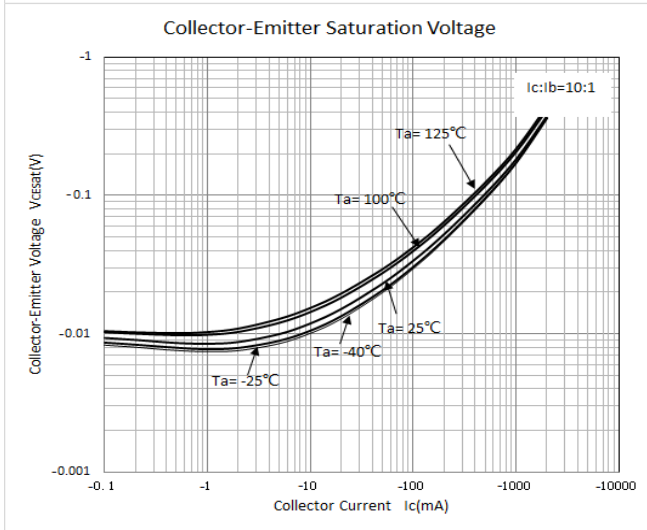
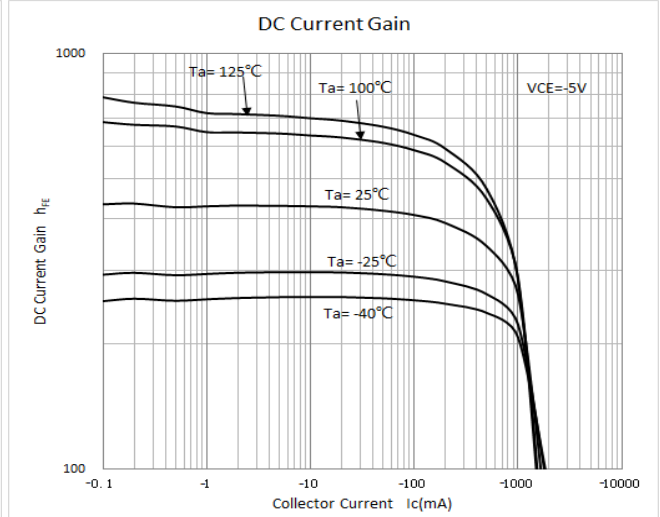
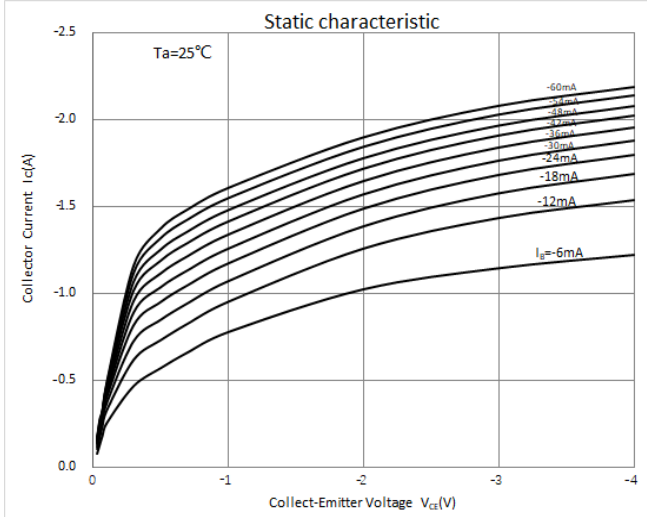
■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=-100\mu A, I_E=0$	-40		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C=-10mA, I_B=0$	-40		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=-100\mu A, I_C=0$	-5		
Collector-Base Cut-Off Current	I_{CBO}	nA	$V_{CB}=-40V, I_E=0$			100
Collector-Emitter Cut-Off Current	I_{CEO}	nA	$V_{CE}=-30V, I_B=0$			100
Emitter-Base Cut-Off Current	I_{EBO}	nA	$V_{EB}=-5V, I_C=0$			100
DC current gain	h_{FE}		$V_{CE}=-5V, I_C=-1mA$	300		
	h_{FE}		$V_{CE}=-5V, I_C=-100mA$	300		800
	h_{FE}		$V_{CE}=-5V, I_C=-500mA$	250		
	h_{FE}		$V_{CE}=-5V, I_C=-1A$	160		
Collector-emitter saturation voltage	$V_{CE(sat)}$	mV	$I_C=-100mA, I_B=-1mA$			-200
	$V_{CE(sat)}$	mV	$I_C=-500mA, I_B=-50mA$			-250
	$V_{CE(sat)}$	mV	$I_C=-1A, I_B=-100mA$			-500
Collector-emitter saturation resistance	$R_{CE(sat)}$	mΩ	$I_C=-500mA, I_B=-50mA$			500
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=-1A, I_B=-50mA$			-1.1
Base-emitter turn-on voltage	$V_{BE(ON)}$	V	$V_{CE}=-5V, I_C=-1A$			-1



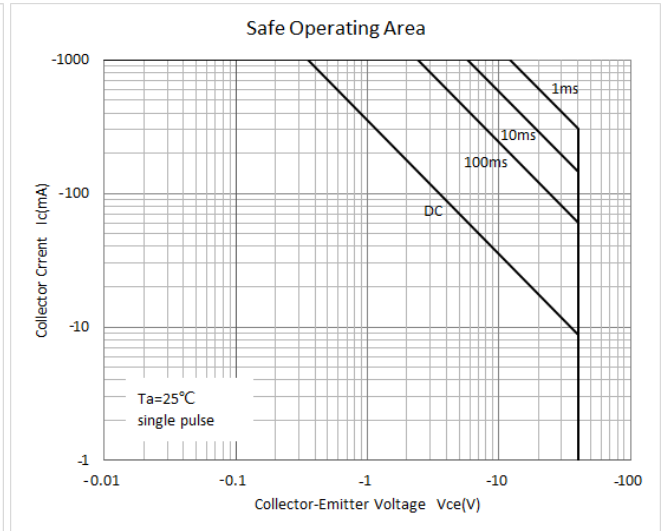
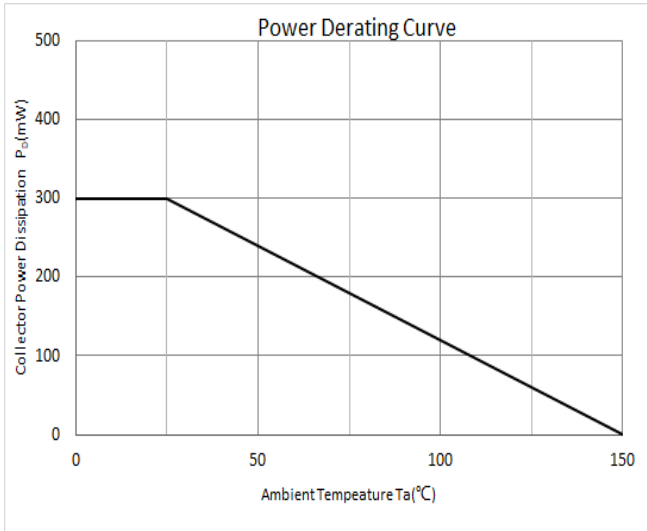
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Characteristics

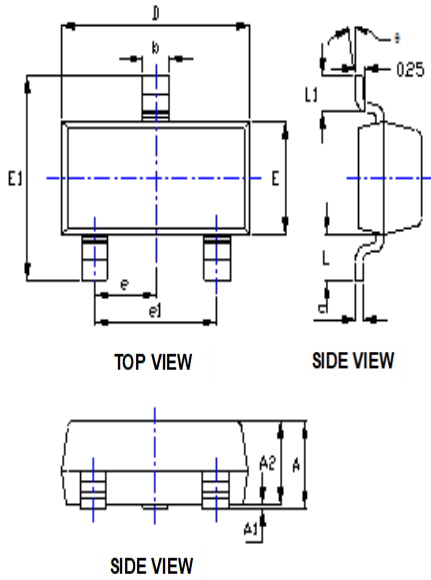




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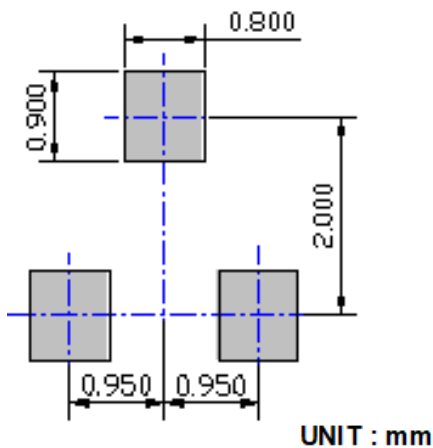


■ SOT-23 Package information



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

■ Suggested Pad Layout





YJBS5140T

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