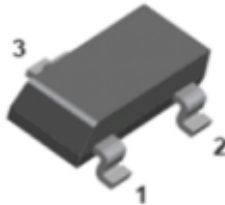
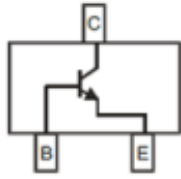


NPN Low VCEsat Transistor



SOT-23

Features

- Epoxy meets UL-94 V-0 flammability rating
- Ultra low collector-emitter saturation voltage VCEsat
- Very low collector-emitter saturation resistance

Mechanical Data

- **Package:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 4140T

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

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V_{CBO}	V	$I_C=100\mu A, I_E=0$	40
Collector-Emitter Voltage	V_{CEO}	V	$I_C=2mA, I_B=0$	40
Emitter-Base Voltage	V_{EBO}	V	$I_E=100\mu A, I_C=0$	5
Collector Current -Continuous	$I_C^{(1)}$	A		1
Peak Collector current	I_{CM}	A	single pulse, $tp \leq 1ms$	2
Base current	I_{BM}	A	single pulse, $tp \leq 1ms$	0.1
Power dissipation	$P_D^{(1)}$	mW		300
Power dissipation	$P_D^{(2)}$	mW		450
Thermal resistance, junction-to-ambient	$R_{\theta J-A}^{(1)}$	°C/W		417
Thermal resistance, junction-to-ambient	$R_{\theta J-A}^{(2)}$	°C/W		280
Thermal resistance, junction-to-case	$R_{\theta J-C}^{(1)}$	°C/W		335
Thermal resistance, junction-to-case	$R_{\theta J-C}^{(2)}$	°C/W		225
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 um single-sided copper, tin-plated and standard footprint

(1) Device mounted on an FR4 Printed-Circuit Board (PCB), 35 um single-sided copper, mounting pad for collector 1 cm².

■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJBS4140T	F2	Approximate 0.008	3000	30000	120000	7" reel

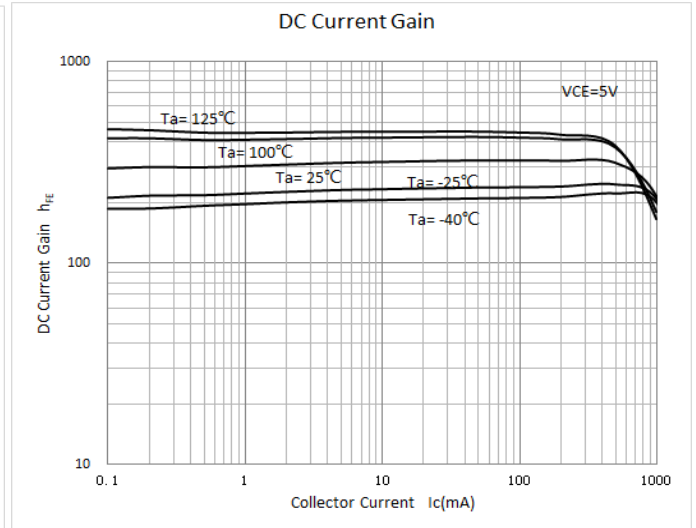
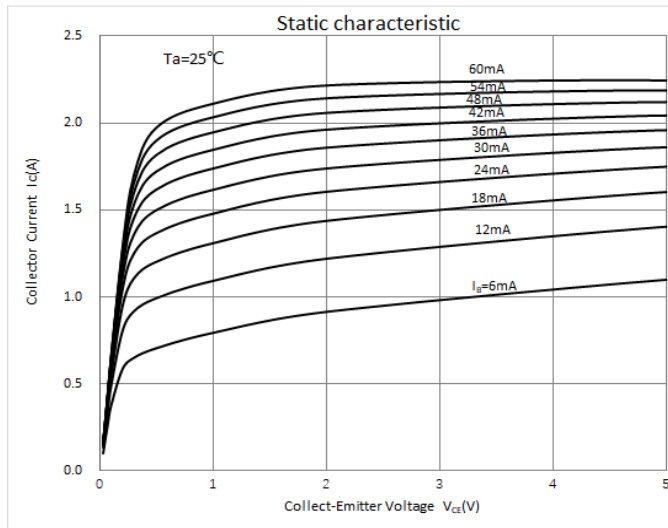


YJBS4140T

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

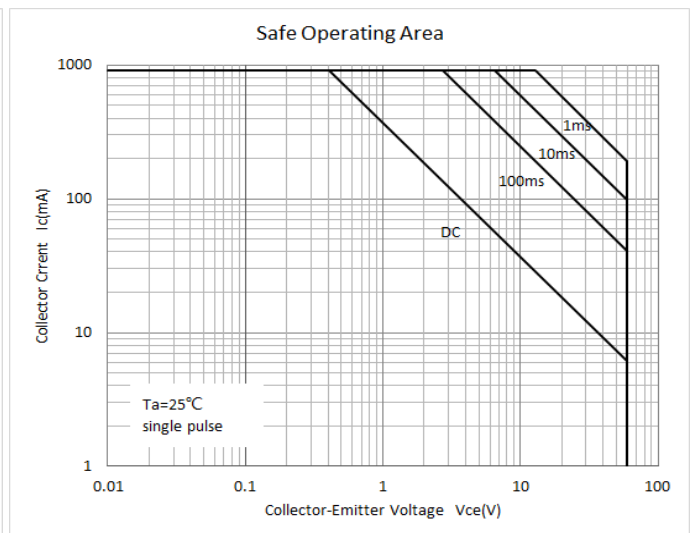
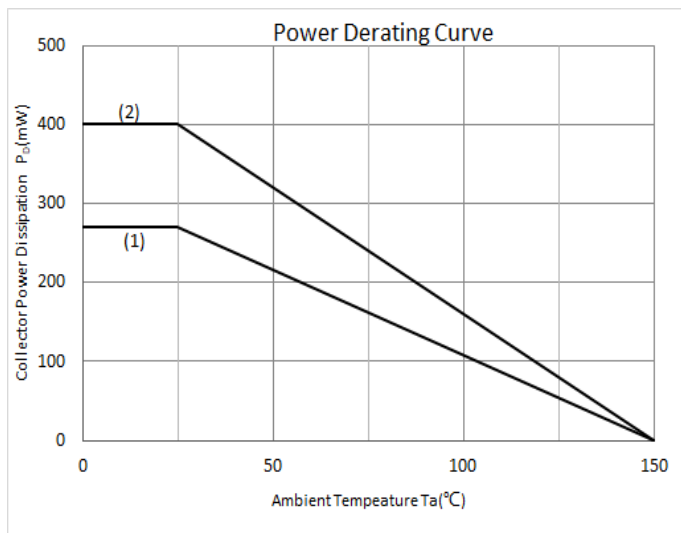
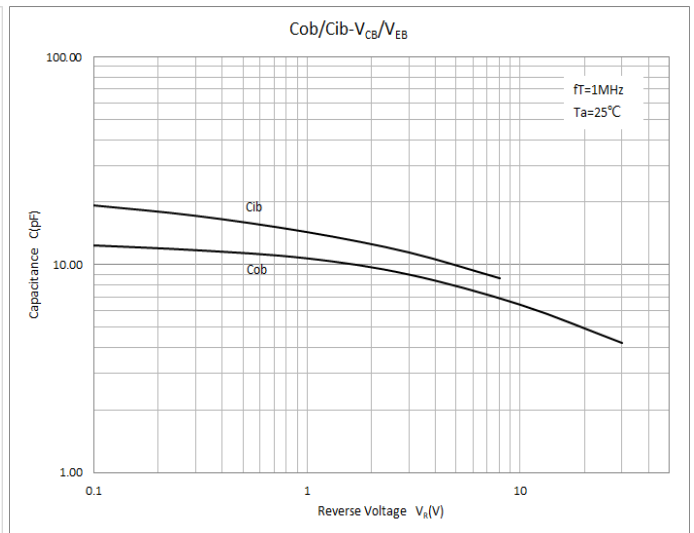
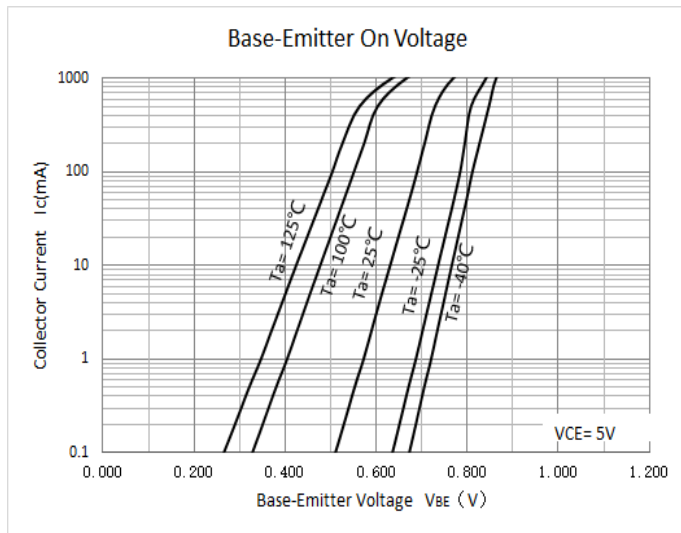
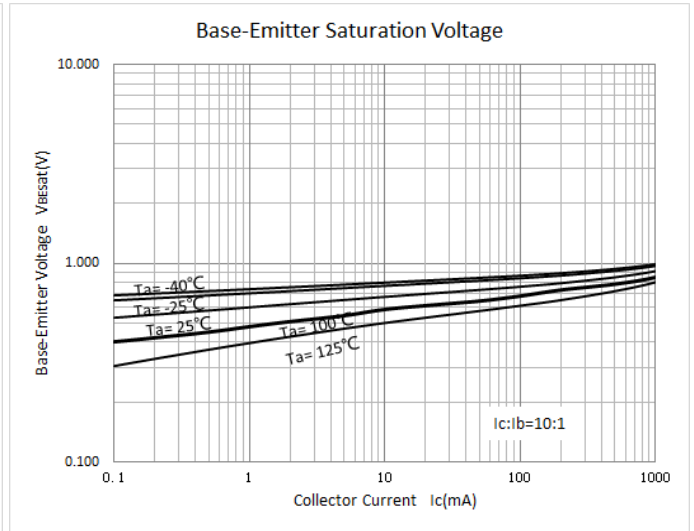
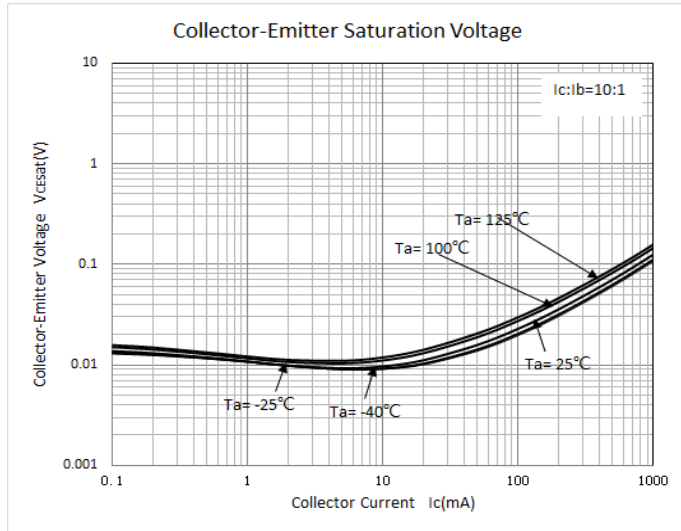
Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=100\mu A, I_E=0$	40		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C=2mA, I_B=0$	40		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=100\mu A, I_C=0$	5		
Collector-Base Cut-Off Current	I_{CBO}	nA	$V_{CB}=40V, I_E=0$			100
Collector-Emitter Cut-Off Current	I_{CEO}	nA	$V_{CE}=30V, I_B=0$			100
Collector-Emitter Cut-Off Current	I_{CES}	nA	$V_{CE}=30V$			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}		$V_{CE}=5V, I_C=500mA$	300		
	h_{FE}		$V_{CE}=5V, I_C=1A$	200		
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	$R_{CE(sat)}$	m Ω	$I_C=500mA, I_B=50mA$			500
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=1A, I_B=100mA$			1.2
Base-emitter turn-on voltage	$V_{BE(ON)}$	V	$V_{CE}=5V, I_C=1A$			1.1
Collector-base output capacitance	C_{ob}	pF	$V_{CB}=10V, f=1MHz$		5.5	

■ Characteristics





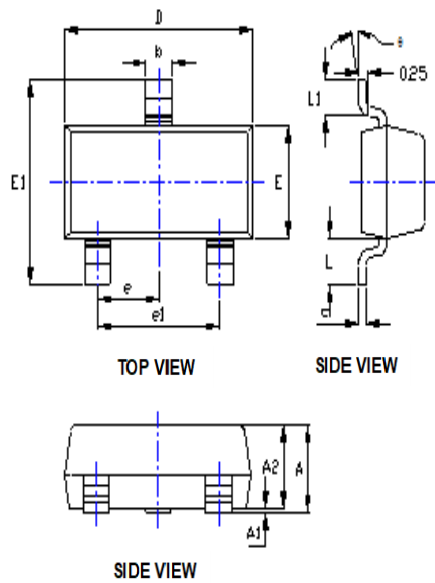
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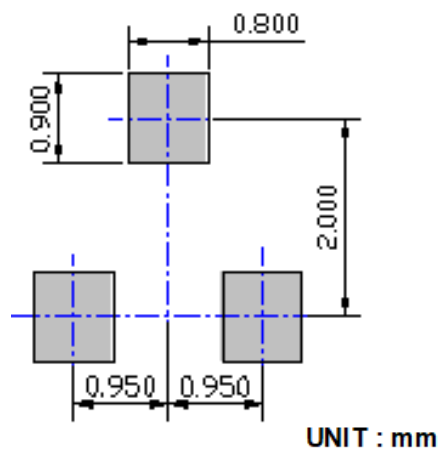
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■ SOT-23 Package information



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





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