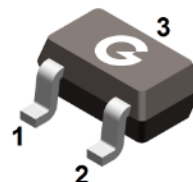
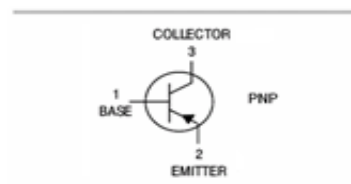


Features

- Epitaxial planar die construction
- Complimentary to TBC817W
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF



SOT-323

Mechanical Data

- Case: SOT-323
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TBC807-16W	SOT-323	3000 pcs / Tape & Reel	5A
TBC807-25W	SOT-323	3000 pcs / Tape & Reel	5B
TBC807-40W	SOT-323	3000 pcs / Tape & Reel	5C

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	-50	V
Collector-Emitter Breakdown Voltage	V _{CEO}	-45	V
Emitter-Base Breakdown Voltage	V _{EBO}	-5	V
Continuous Collector Current	I _C	-0.5	A
Peak Collector Current	I _{CM}	-1	A
Base Current	I _B	-0.1	A
Peak Base Current	I _{BM}	-0.2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	250	mW
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	396	°C/W
Thermal Resistance Junction-to-Case ^{*1}	R _{θJC}	197	°C/W
Thermal Resistance Junction-to-Lead ^{*1}	R _{θJL}	218	°C/W
Operating junction Temperature	T _J	-65 ~ +150	°C
Storage Temperature Range	T _{STG}	-65 ~ +150	°C

Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage		V _{(BR)CBO}	I _C = -10μA, I _E = 0	-50	-	-	V
Collector-Emitter Breakdown Voltage		V _{(BR)CEO}	I _C = -10mA, I _B = 0	-45	-	-	V
Emitter-Base Breakdown Voltage		V _{(BR)EBO}	I _E = -10μA, I _C = 0	-5	-	-	V
Collector Cut-off Current		I _{CBO}	V _{CB} = -20V, I _E = 0	-	-	-100	nA
Emitter Cut-off Current		I _{EBO}	V _{EB} = -4V, I _C = 0	-	-	-100	nA
DC Current Gain	TBC807-16W	h _{FE}	V _{CE} = -1V, I _C = -100mA	100	197	250	-
	TBC807-25W			160	352	400	-
	TBC807-40W			250	418	600	-
	TBC807-16W		V _{CE} = -1V, I _C = -300mA	60	-	-	-
	TBC807-25W			100	-	-	-
	TBC807-40W			170	-	-	-
	TBC807-40W		V _{CE} = -1V, I _C = -500mA	40	-	-	-
Collector-emitter Saturation Voltage		V _{CE(sat)}	I _C = -500mA, I _B = -50mA	-	-	-0.7	V
Base-emitter Saturation Voltage		V _{BE(sat)}	I _C = -500mA, I _B = -50mA	-	-	-1.2	V
Transition Frequency		f _T	I _C = -50mA, V _{CE} = -5V	-	200	-	MHz
Collector Output Capacitance		C _{OBO}	V _{CB} = -10V, I _E = 0, f = 1MHZ	-	10	-	pF

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

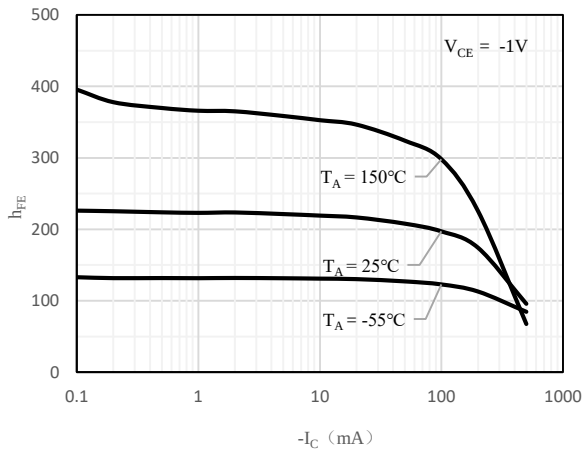


Fig 1 h_{FE} vs. I_C (TBC807-16W)

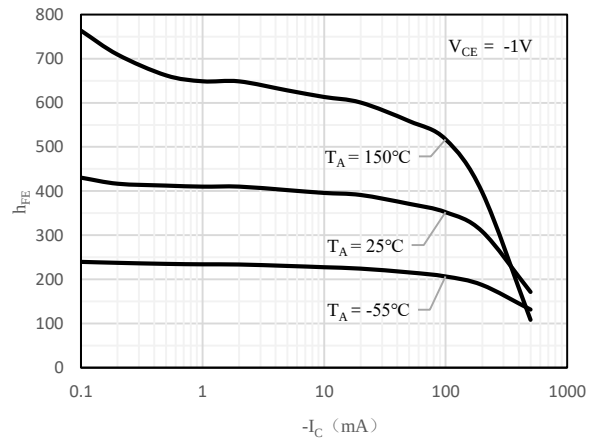


Fig 2 h_{FE} vs. I_C (TBC807-25W)

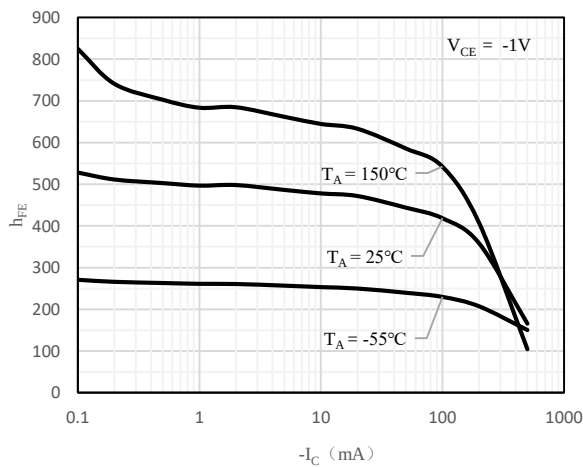


Fig 3 h_{FE} vs. I_C (TBC807-40W)

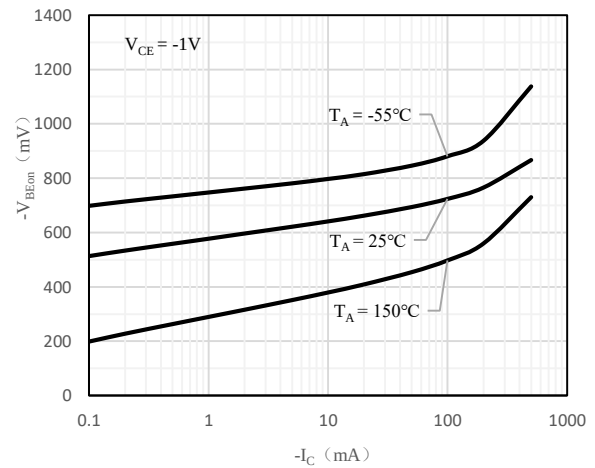


Fig 4 $V_{BE(ON)}$ vs. I_C

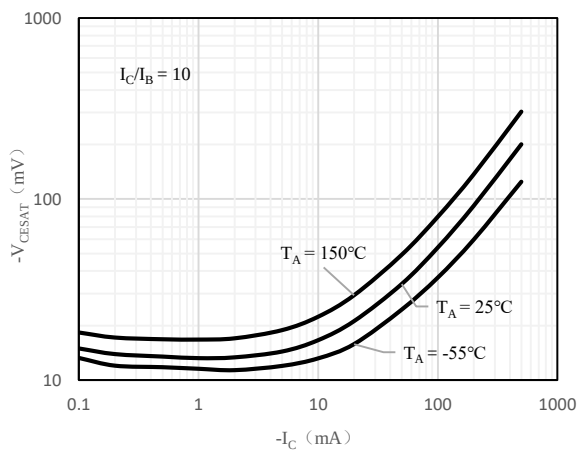


Fig 2 $V_{CE(sat)}$ vs. I_C

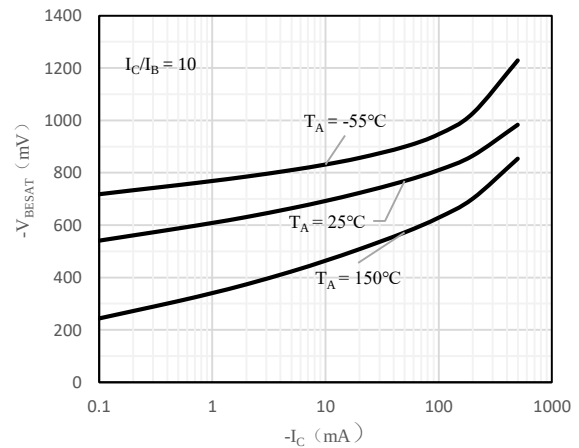
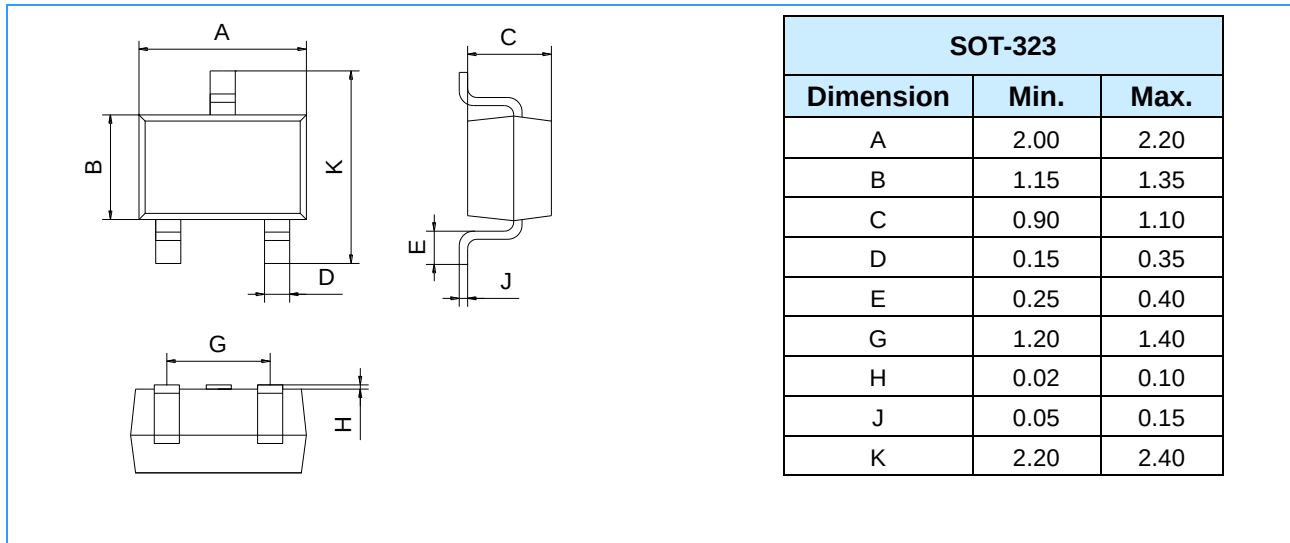
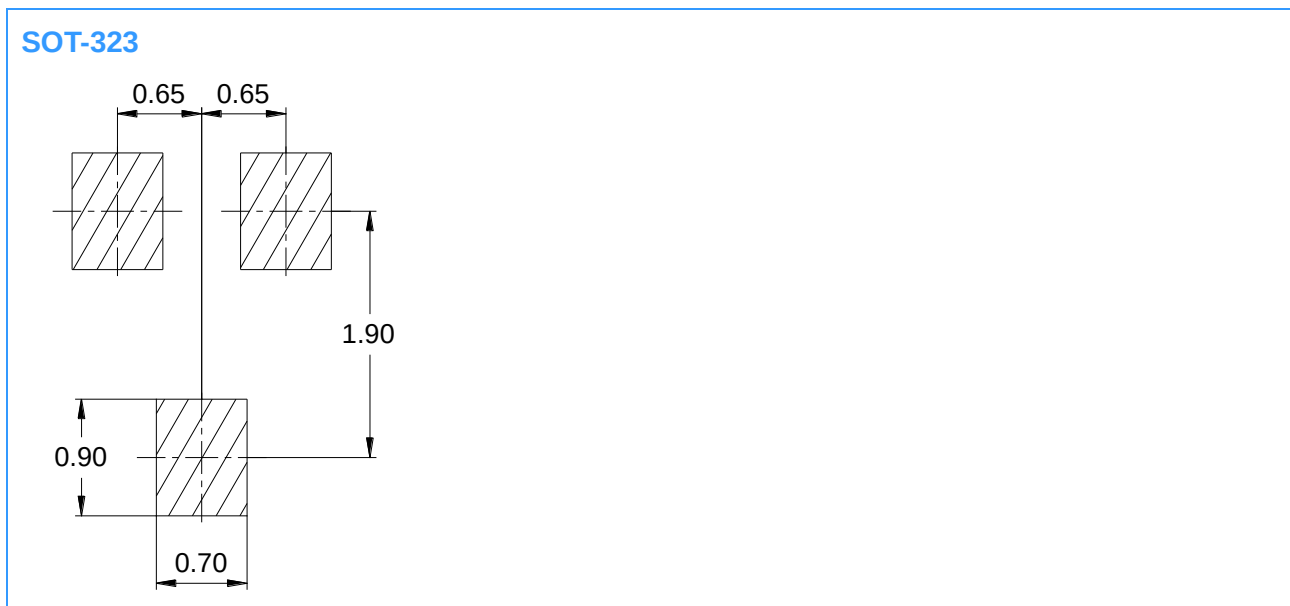


Fig 3 $V_{BE(sat)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



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