BC817-16-AU / BC817-25-AU / BC817-40-AU

Silicon NPN General Purpose Transistors

Voltage	45V	Current	500mA

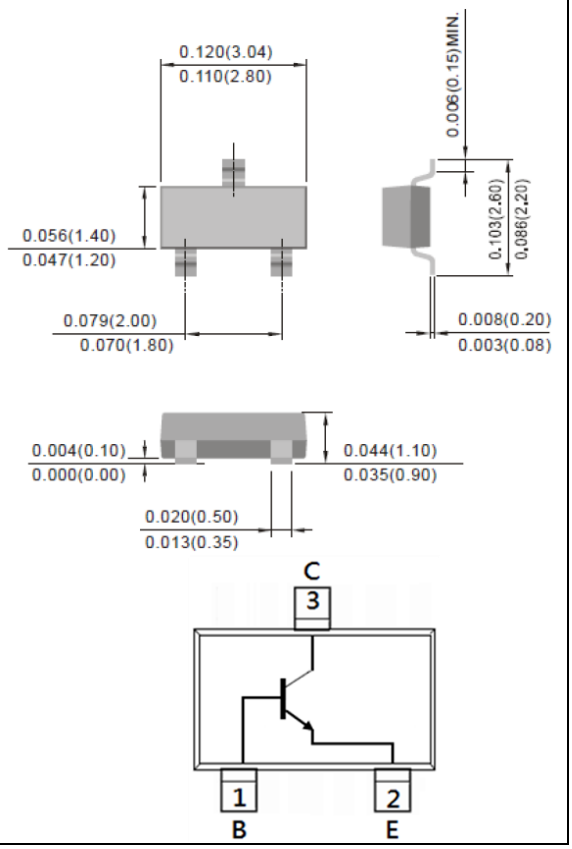
Features

- Silicon NPN Epitaxial type
- Excellent DC current gain characteristics
- General purpose amplifier application
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 Standard
- PNP complement: BC807-AU series

Mechanical Data

- Case: SOT-23 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084grams
- Marking: BC817-16-AU: 8A
  BC817-25-AU: 8B
  BC817-40-AU: 8C

SOT-23 **Unit: inch(mm)**



Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	500	mA
Collector Current (Pulse)	I_{CP}	1000	mA
Total Power Dissipation	P_{TOT}	330	mW
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55~150	°C
Thermal Resistance from Junction to Ambient (Note)	$R_{\theta JA}$	375	°C/W

Note: Mounted on minimum pad mount on FR-4 board.

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Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
OFF Characteristics							
Collector-Emitter Breakdown Voltage		BV_{CEO}	I_C= 10mA, I_B= 0A	45	-	-	V
Collector-Base Breakdown Voltage		BV_{CBO}	I_C= 10uA, I_E= 0A	50	-	-	V
Emitter-Base Breakdown Voltage		BV_{EBO}	I_E= 1uA, I_C= 0A	5	-	-	V
Collector-Base Cutoff Current		I_{CBO}	V_{CB}= 20V, I_E= 0A	-	-	100	nA
Collector-Base Cutoff Current		I_{CBO}	Tj=125 °C	-	-	5	uA
Emitter-Base Cutoff Current		I_{EBO}	V_{EB}= 5V	-	-	100	nA
ON characteristics							
DC Current Gain	BC817-16-AU	h_{FE}	V_{CE}= 1V I_C= 100mA	100	-	250	
	BC817-25-AU			160	-	400	
	BC817-40-AU			250	-	600	
DC Current Gain			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 Turn-on voltage		$V_{BE(on)}$	I_C= 500mA, V_{CE}= 1V	-	-	1.2	V
Transition Frequency		f_T	I_C= 10mA, V_{CE}= 5V	100	-	-	MHz
Collector Output Capacitance		C_{OB}	V_{CB}= 10V, f=1MHz	-	7	-	pF

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TYPICAL CHARACTERISTIC CURVES

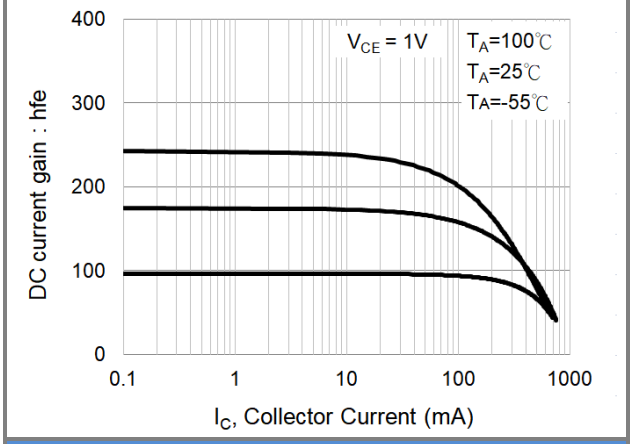

Fig.1 DC Current Gain(-16)

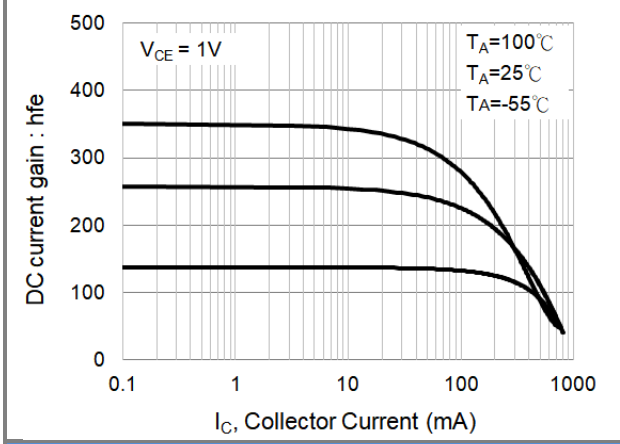

Fig.2 DC Current Gain (-25)

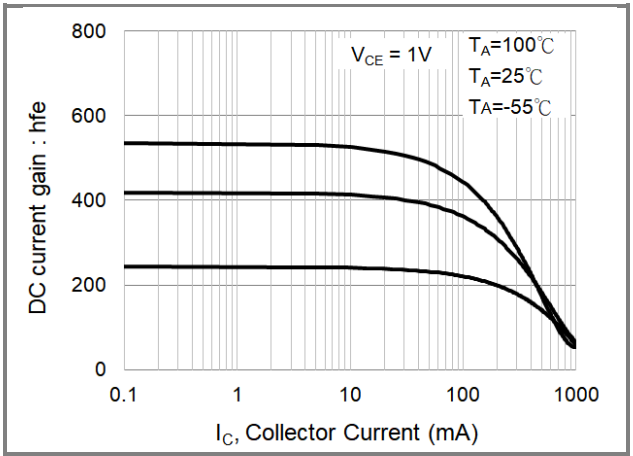

Fig.3 DC Current Gain (-40)

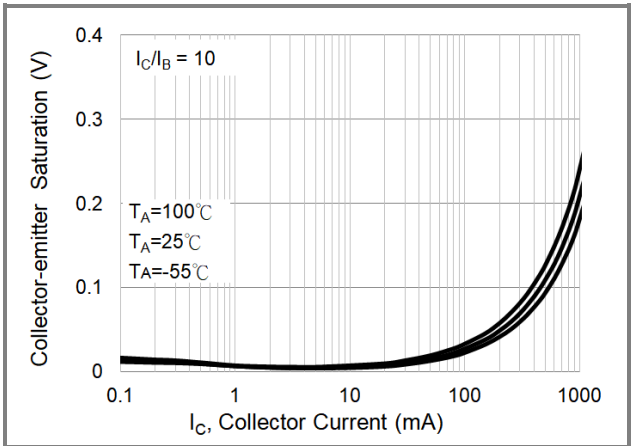

Fig.4 Collector-Emitter Saturation Voltage (-16)

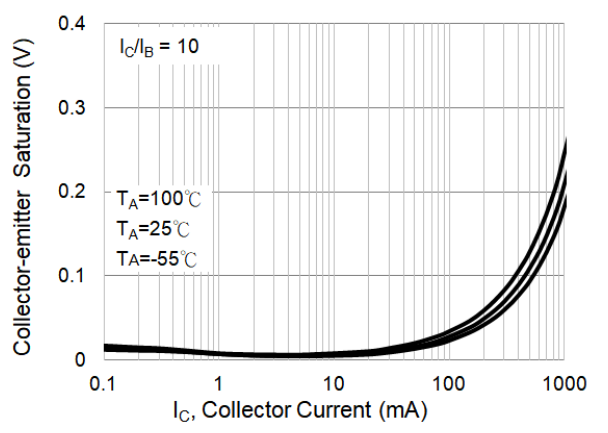

Fig.5 Collector-Emitter Saturation Voltage (-25)

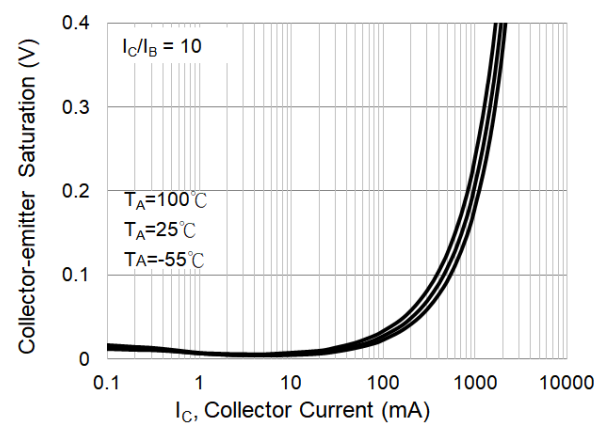

Fig.6 Collector-Emitter Saturation Voltage (-40)

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TYPICAL CHARACTERISTIC CURVES

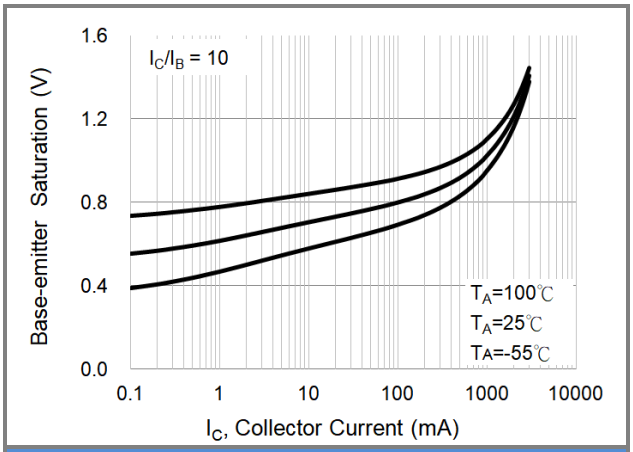

Fig.7 Base-Emitter Saturation Voltage (-16)

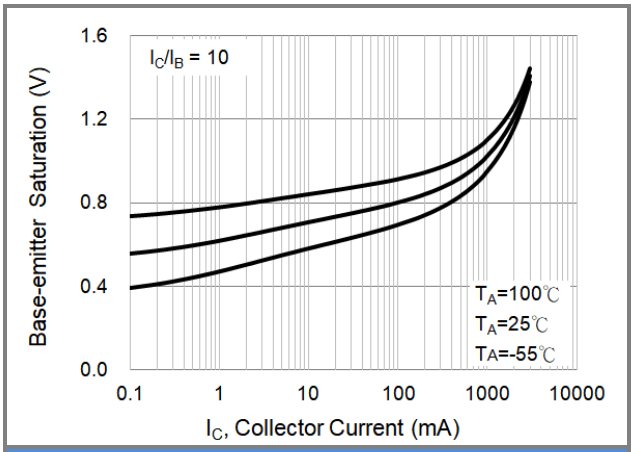

Fig.8 Base-Emitter Saturation Voltage (-25)

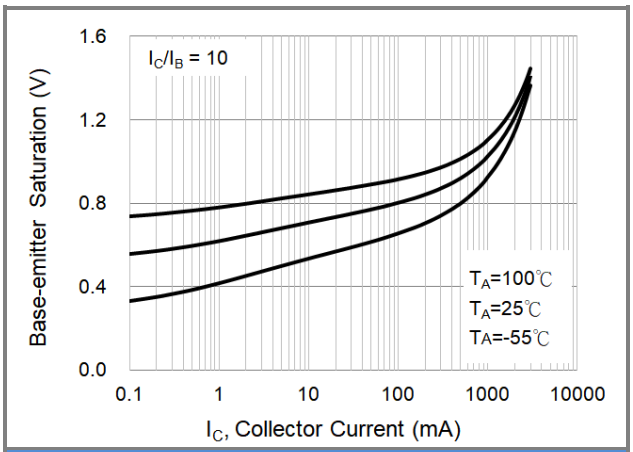

Fig.9 Base-Emitter Saturation Voltage (-40)

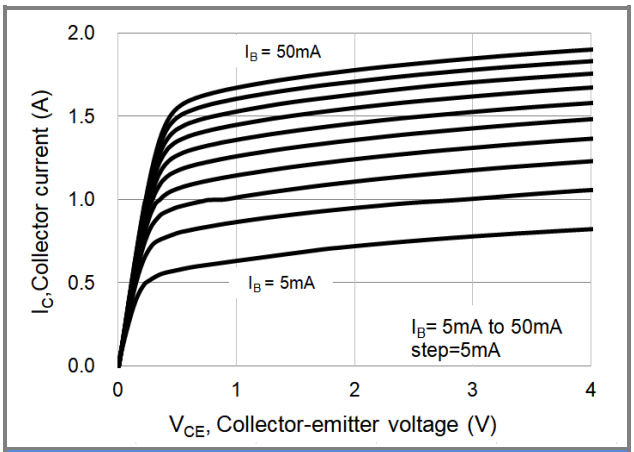

Fig.10 Collector Current (-16)

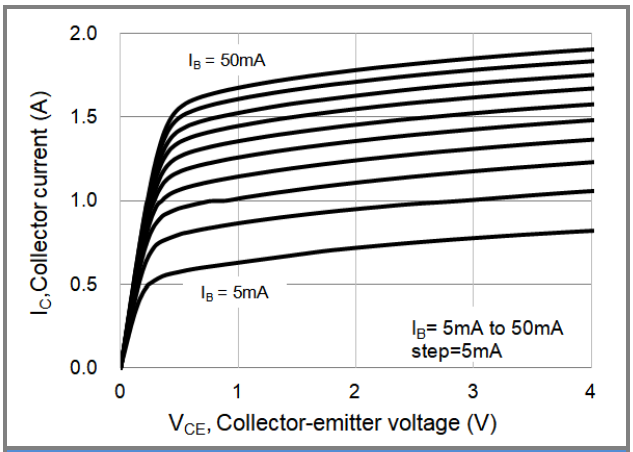

Fig.11 Collector Current (-25)

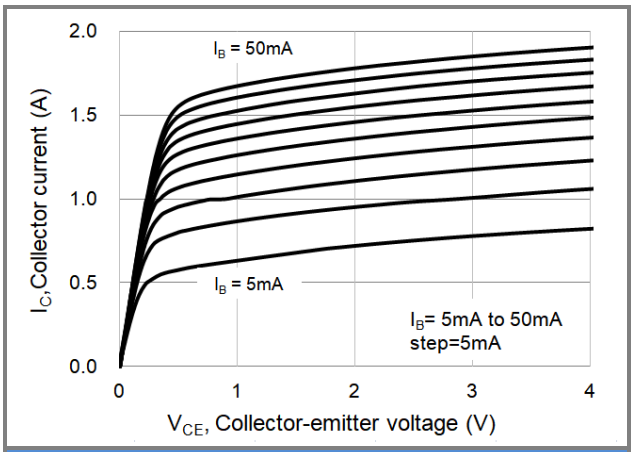

Fig.12 Collector Current (-40)

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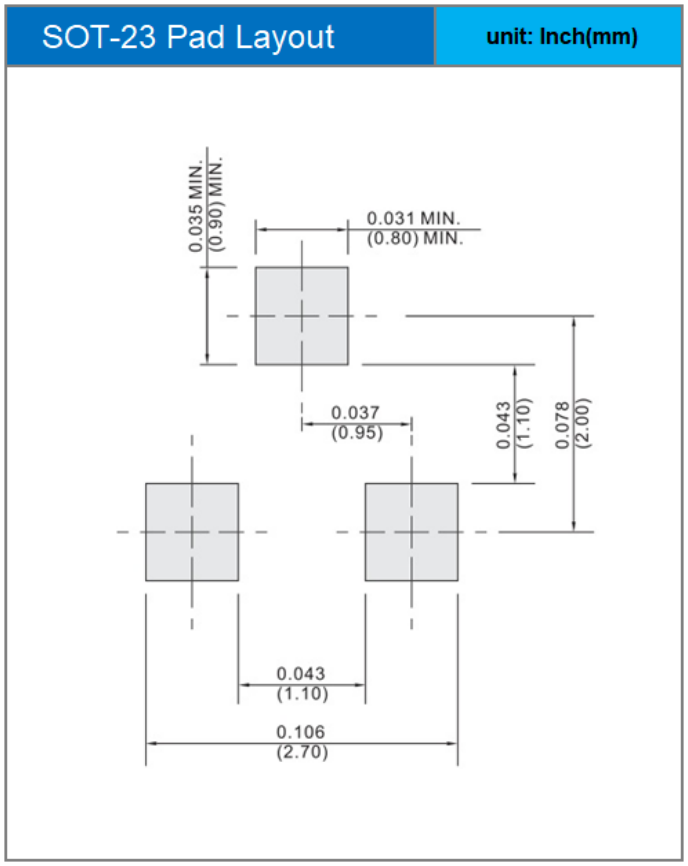
Product and Packing Information

Part No.	Package Type	Packing type	Marking
BC817-16-AU	SOT-23	3K pcs / 7” reel	8A
BC817-25-AU	SOT-23	3K pcs / 7” reel	8B
BC817-40-AU	SOT-23	3K pcs / 7” reel	8C

Mounting Pad Layout



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