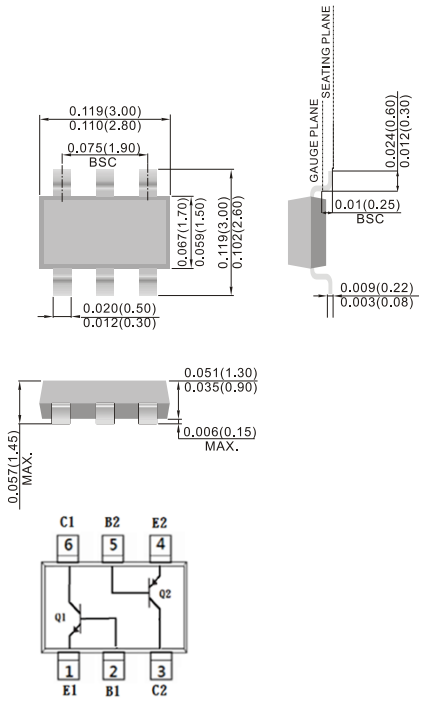
BC817DPN-AU

DUAL NPN/PNP GENERAL PURPOSE TRANSISTORS

Voltage	45/-45V	Current	0.5/-0.5A

SOT-23 6L Unit: inch(mm)



Features

- General purpose amplifier applications
- High collector current capability
- Excellent DC current gain characteristics
- Acquire quality system certificate : TS16949
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive).
- Green molding compound as per IEC61249 Std.. (Halogen Free)

Mechanical Data

- Case : SOT-23 6L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0005 ounces, 0.014 grams
- Marking : 8PN

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

PARAMETER	SYMBOL	LIMIT		UNITS
		NPN	PNP	
Collector-Base Voltage	V_{CBO}	50	-50	V
Collector-Emitter Voltage	V_{CEO}	45	-45	V
Emitter-Base Voltage	V_{EBO}	5	-5	V
Collector Current (DC)	I_C	0.5	-0.5	A
Collector Current (Pulse)	I_{CP}	1	-1	A
Base Current	I_B	0.1	-0.1	A
Collector Power Dissipation	P_D	330		mW
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55~150		°C
Thermal Resistance from Junction to Ambient (Note)	$R_{\theta JA}$	378		°C/W

Note: Mounted on FR4 PCB at 1 inch square copper pad.

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Electrical Characteristics Q1 (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= 0.01mA, I_E= 0A	50	-	-	V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E= 0.01mA, I_C= 0A	5	-	-	V
Collector Cutoff Current	I_{CBO}	V_{CB}= 20V, I_E= 0A	-	-	100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}= 5V, I_C= 0A	-	-	100	nA
ON characteristics						
DC Current Gain (Note1)	h_{FE}	V_{CE}= 1V, I_C= 0.1A	100	-	600	-
		V_{CE}= 1V, I_C= 0.5A	40	-	-	
Collector-Emitter Saturation Voltage (Note1)	$V_{CE(SAT)}$	I_C= 0.5A, I_B= 50mA	-	-	0.7	V
Base-Emitter Turn-on Voltage (Note1)	$V_{BE(ON)}$	V_{CE}= 1V, I_C= 0.5A	-	-	1.2	V
Transition Frequency	f_T	V_{CE}= 5V, I_C= 0.01A F=100MHz	100	-	-	MHz
Collector Output Capacitance	C_{OB}	V_{CB}= 10V, I_E= 0A, F=1MHz	-	7	-	pF

Note: 1. Pulse width≤300us, Duty cycle≤2%

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Electrical Characteristics Q2 (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= -0.01mA, I_E= 0A	-50	-	-	V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E= -0.01mA, I_C= 0A	-5	-	-	V
Collector Cutoff Current	I_{CBO}	V_{CB}= -20V, I_E= 0A	-	-	-100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}= -4V, I_C= 0A	-	-	-100	nA
ON characteristics						
DC Current Gain (Note1)	h_{FE}	V_{CE}= -1V, I_C= -0.1A	100	-	600	-
		V_{CE}= -1V, I_C= -0.5A	40	-	-	
Collector-Emitter Saturation Voltage (Note1)	$V_{CE(SAT)}$	I_C= -0.5A, I_B= -50mA	-	-	-0.7	V
Base-Emitter Turn-on Voltage (Note1)	$V_{BE(ON)}$	V_{CE}= -1V, I_C= -0.5A	-	-	-1.2	V
Transition Frequency	f_T	V_{CE}= -5V, I_C= -0.01A F=100MHz	100	-	-	MHz
Collector Output Capacitance	C_{OB}	V_{CB}= -10V, I_E= 0A, F=1MHz	-	7	-	pF

Note: 1. Pulse width≤300us, Duty cycle≤2%

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NPN TYPICAL CHARACTERISTIC CURVES

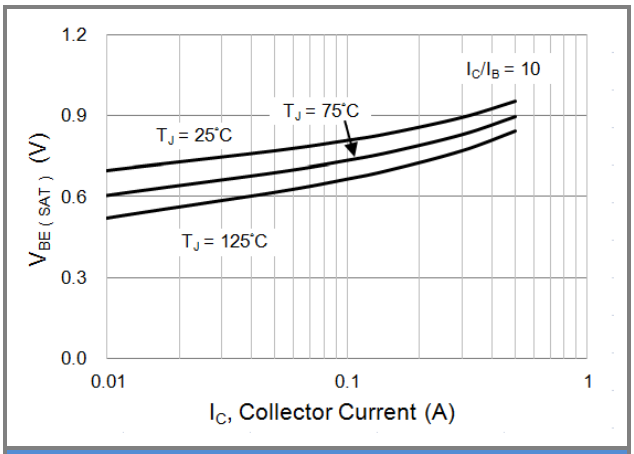

Fig.1 Typical Base-Emitter Saturation Voltage

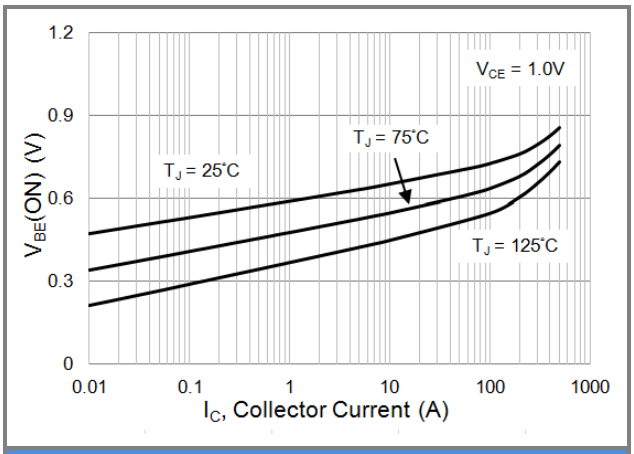

Fig.2 Typical Base-Emitter Turn ON Voltage

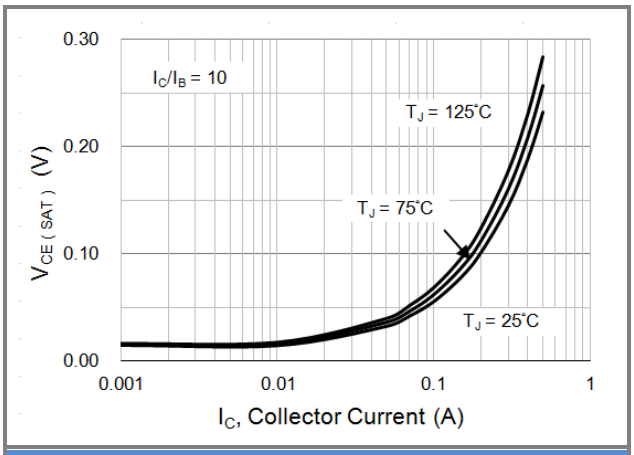

Fig.3 Typical Collector-Emitter Saturation

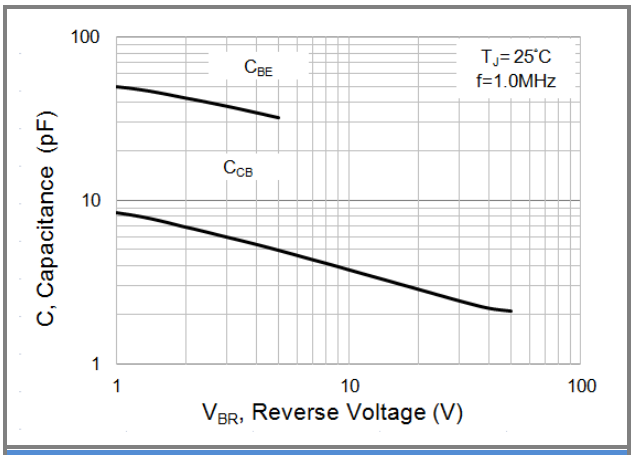

Fig.4 Typical Capacitance

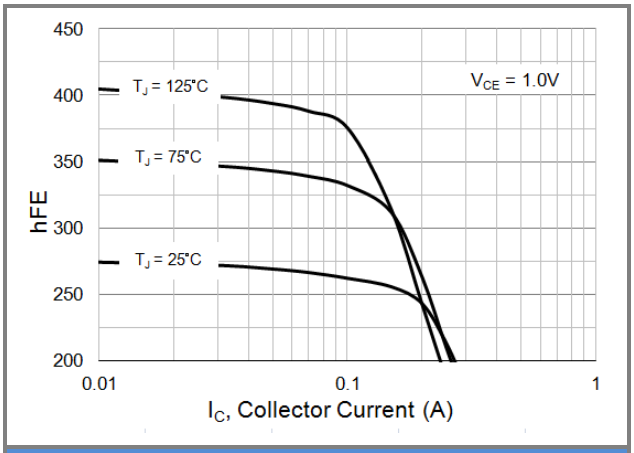

Fig.5 Typical DC Current Gain

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PNP TYPICAL CHARACTERISTIC CURVES

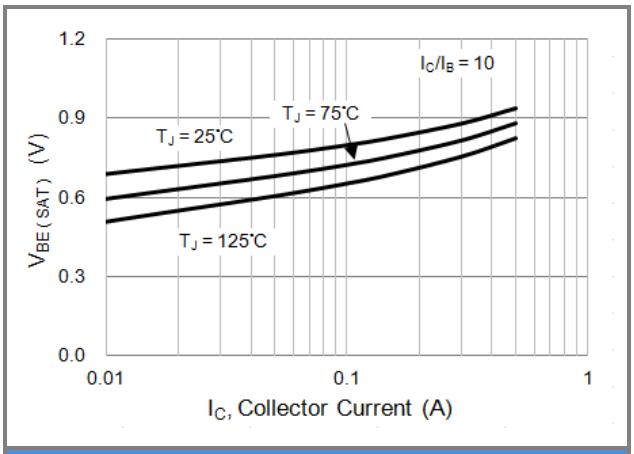

Fig.1 Typical Base-Emitter Saturation Voltage

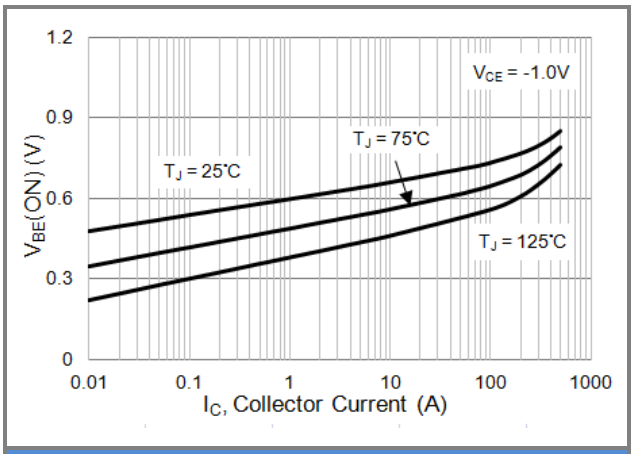

Fig.2 Typical Base-Emitter Turn ON Voltage

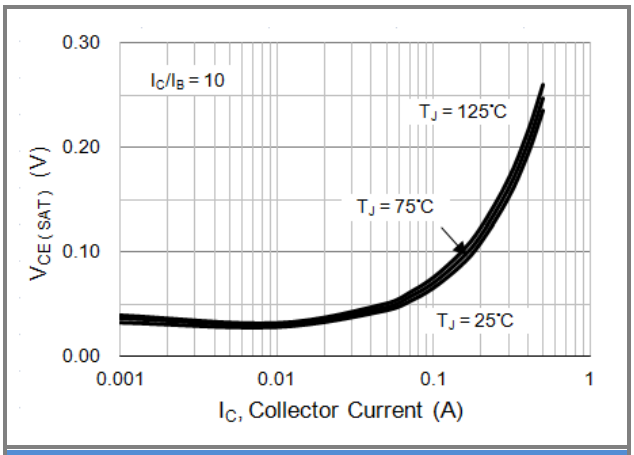

Fig.3 Typical Collector-Emitter Saturation

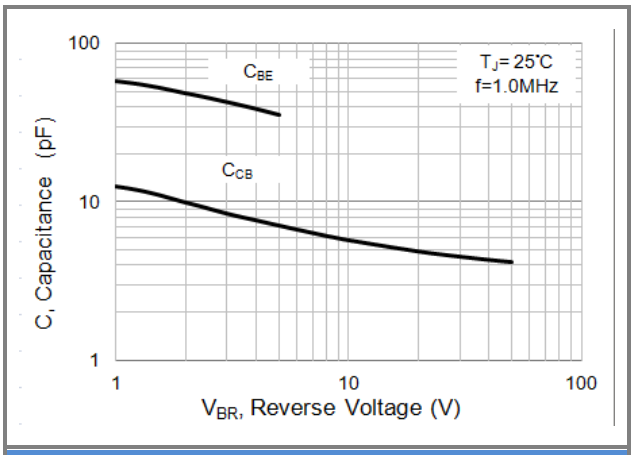

Fig.4 Typical Capacitance

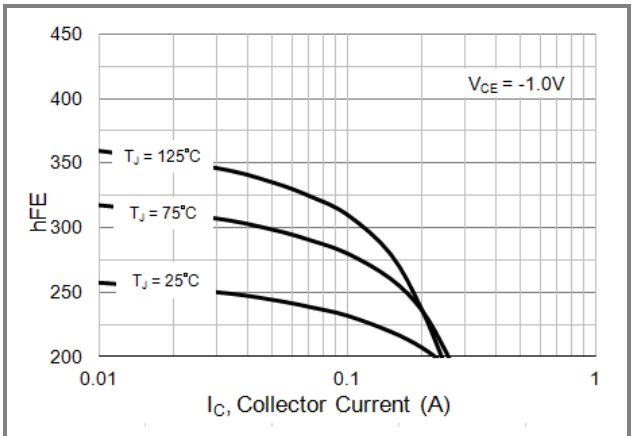

Fig.5 Typical DC Current Gain

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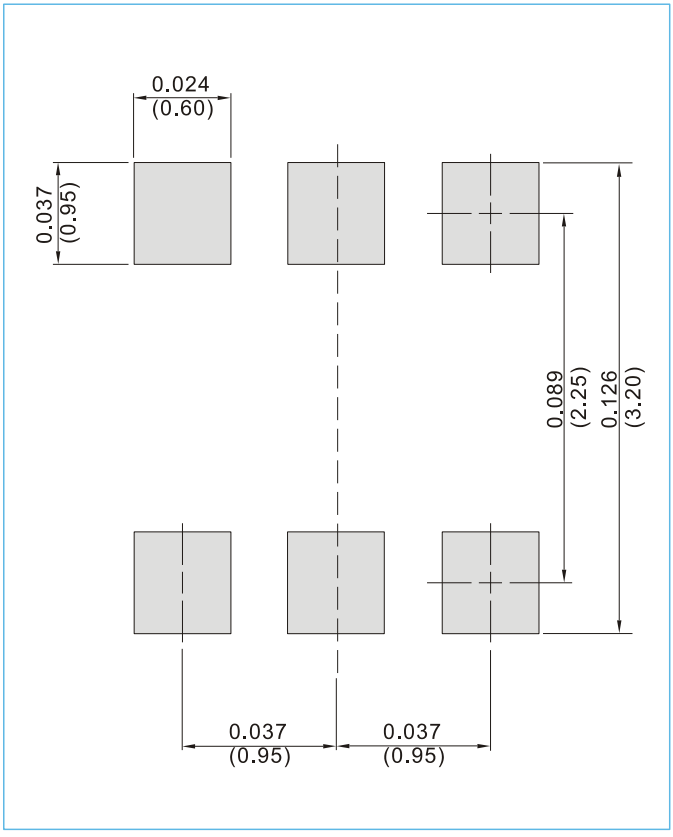
PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
BC817DPN-AU_R1_000A1	SOT-23 6L	3K pcs / 7” reel	8PN	Halogen free
BC817DPN-AU_R2_000A1	SOT-23 6L	10K pcs / 13” reel	8PN	Halogen free

MOUNTING PAD LAYOUT

SOT-23 6L Unit : inch(mm)



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