



# BC817DS-25

## DUAL NPN GENERAL PURPOSE TRANSISTORS

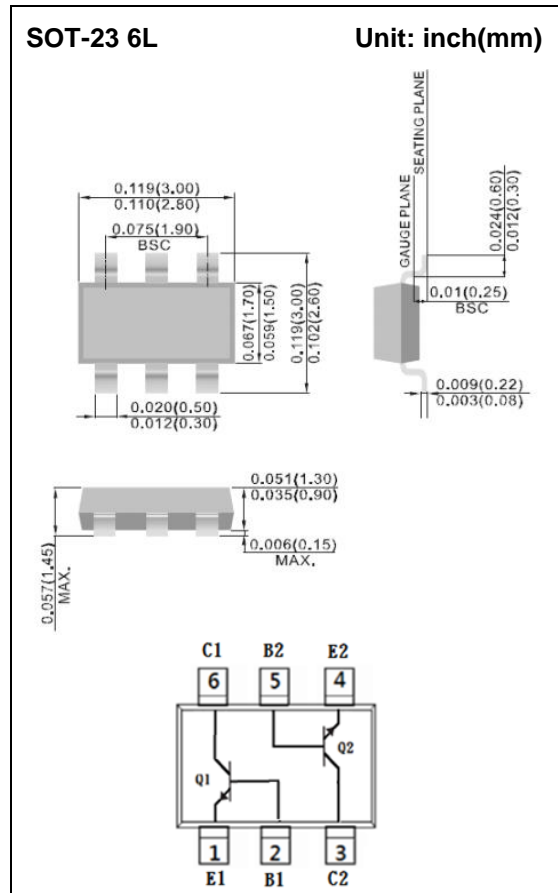
**Voltage** 45V **Current** 0.5A

### Features

- General purpose amplifier applications
- High collector current capability
- Excellent DC current gain characteristics
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

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



### Maximum Ratings and Thermal Characteristics ( $T_A=25^{\circ}\text{C}$ 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)	$I_C$	0.5	A
Collector Current (Pulse)	$I_{CP}$	1	A
Base Current	$I_B$	0.1	A
Collector Power Dissipation	$P_D$	330	mW
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~150	$^{\circ}\text{C}$
Thermal Resistance from Junction to Ambient <sup>(Note)</sup>	$R_{\theta JA}$	378	$^{\circ}\text{C/W}$

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



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## Electrical Characteristics Q1 Q2 ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
<b>OFF Characteristics</b>						
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C= 10\text{mA}, I_B= 0\text{A}$	45	-	-	V
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C= 0.01\text{mA}, I_E= 0\text{A}$	50	-	-	V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E= 0.01\text{mA}, I_C= 0\text{A}$	5	-	-	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}= 20\text{V}, I_E= 0\text{A}$	-	-	100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}= 5\text{V}, I_C= 0\text{A}$	-	-	100	nA
<b>ON characteristics</b>						
DC Current Gain (Note1)	$h_{FE}$	$V_{CE}= 1\text{V}, I_C= 0.1\text{A}$	160	-	400	-
		$V_{CE}= 1\text{V}, I_C= 0.5\text{A}$	40	-	-	
Collector-Emitter Saturation Voltage (Note1)	$V_{CE(SAT)}$	$I_C= 0.5\text{A}, I_B= 50\text{mA}$	-	-	0.7	V
Base-Emitter Turn-on Voltage (Note1)	$V_{BE(ON)}$	$V_{CE}= 1\text{V}, I_C= 0.5\text{A}$	-	-	1.2	V
Transition Frequency	$f_T$	$V_{CE}= 5\text{V}, I_C= 0.01\text{A}$ $F=100\text{MHz}$	100	-	-	MHz
Collector Output Capacitance	$C_{OB}$	$V_{CB}= 10\text{V}, I_E= 0\text{A},$ $F=1\text{MHz}$	-	7	-	pF

Note: 1. Pulse width  $\leq 300\mu\text{s}$ , Duty cycle  $\leq 2\%$



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## TYPICAL CHARACTERISTIC CURVES

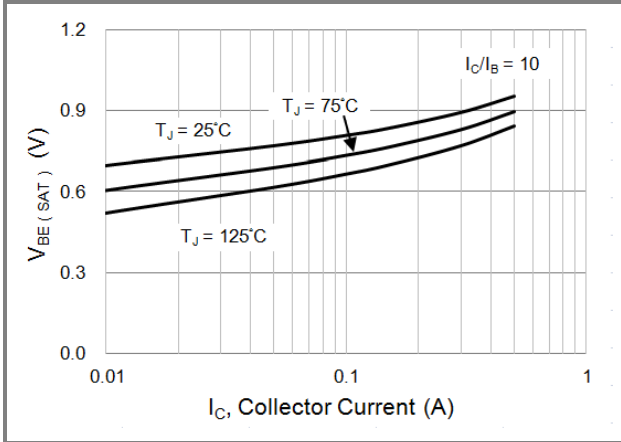


Fig.1 Typical Base-Emitter Saturation Voltage

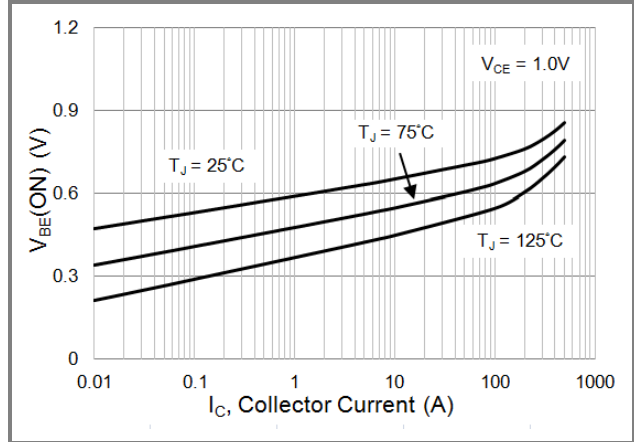


Fig.2 Typical Base-Emitter Turn ON Voltage

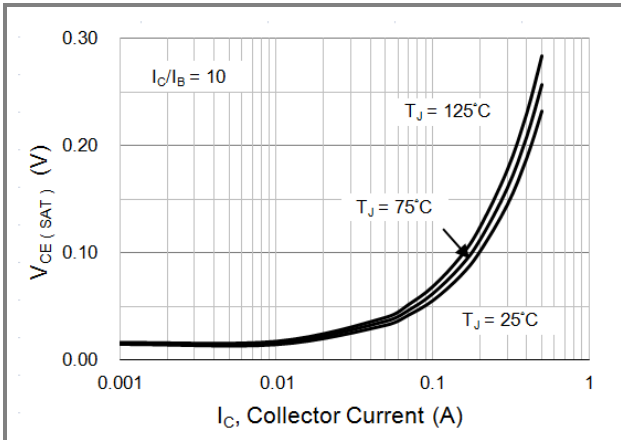


Fig.3 Typical Collector-Emitter Saturation

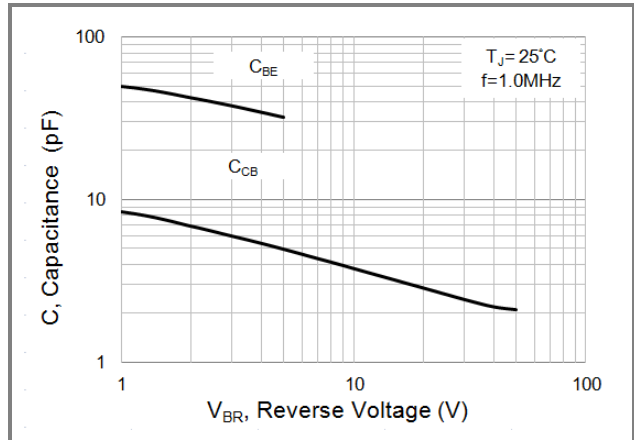


Fig.4 Typical Capacitance

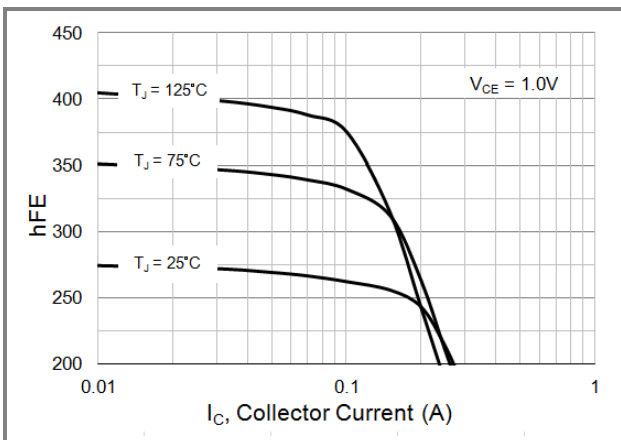


Fig.5 Typical DC Current Gain

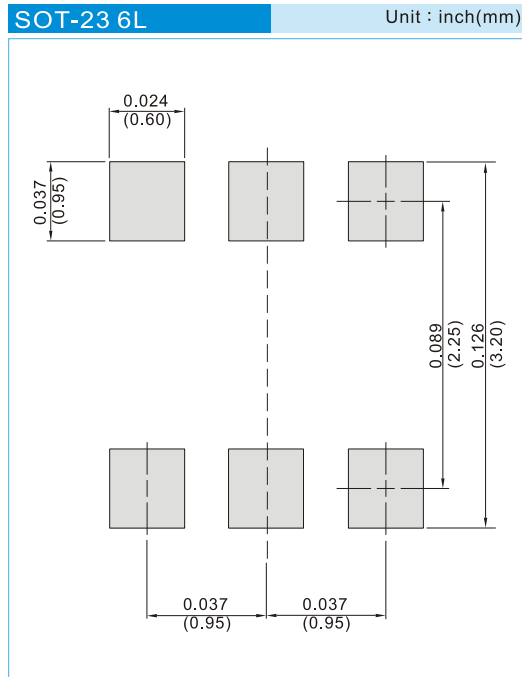


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## PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
BC817DS-25_R1_00001	SOT-23 6L	3K pcs / 7" reel	8DS	Halogen free
BC817DS-25_R2_00001	SOT-23 6L	10K pcs / 13" reel	8DS	Halogen free

## MOUNTING PAD LAYOUT





## BC817DS-25

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