

BC817DPN-25

DUAL NPN/PNP GENERAL PURPOSE TRANSISTORS

Voltage

**45
-45V**

Current

**0.5
-0.5A**

Features

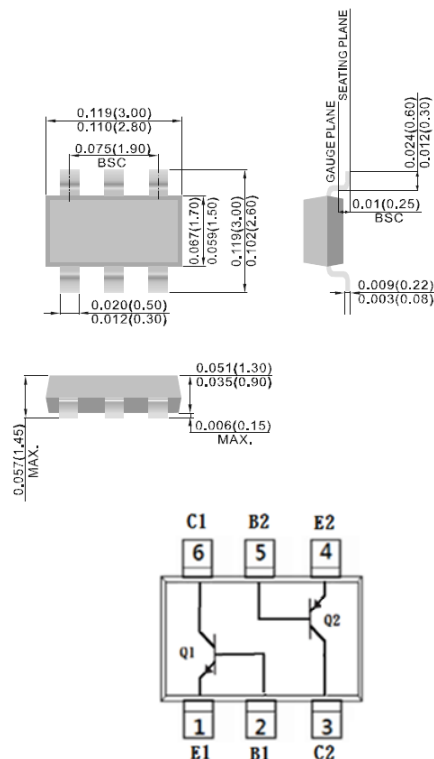
- General purpose amplifier applications
- High collector current capability
- Excellent DC current gain characteristics
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SOT-23 6L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0005 ounces, 0.014 grams
- Marking : 25C

SOT-23 6L

Unit: inch(mm)



Maximum Ratings and Thermal Characteristics ($T_A=25^{\circ}\text{C}$ 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		$^{\circ}\text{C}$
Thermal Resistance from Junction to Ambient ^(Note)	$R_{\theta JA}$	378		$^{\circ}\text{C/W}$

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



BC817DPN-25

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
OFF Characteristics						
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
ON characteristics						
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 $\leq 2\%$



BC817DPN-25

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
OFF Characteristics						
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}	$V_{EB} = -4\text{V}, I_C = 0\text{A}$	-	-	-100	nA
ON characteristics						
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 $\leq 2\%$

BC817DPN-25

NPN TYPICAL CHARACTERISTIC CURVES

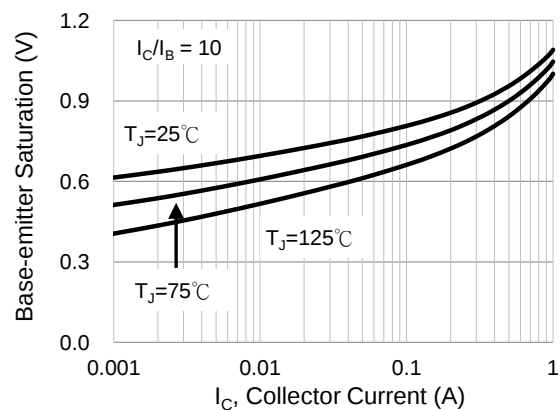


Fig.1 Typical Base-Emitter Saturation Voltage

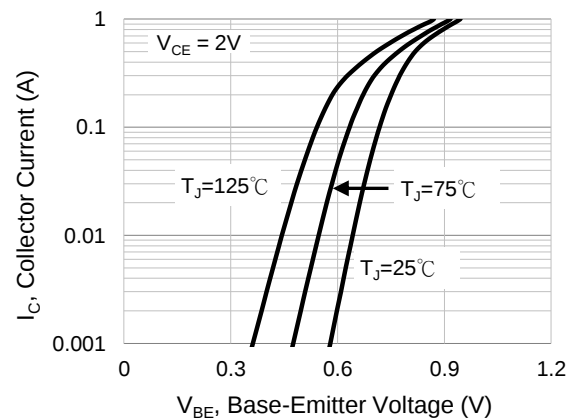


Fig.2 Typical Base-Emitter Turn ON Voltage

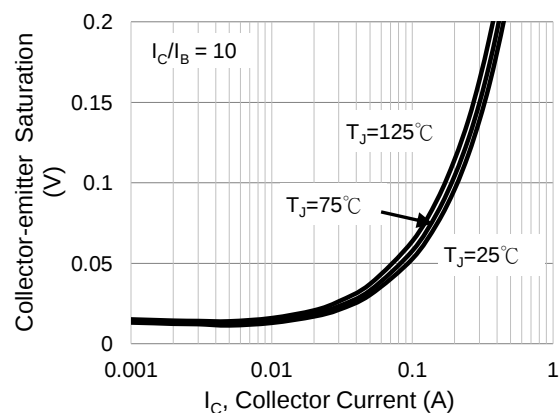


Fig.3 Typical Collector-Emitter Saturation

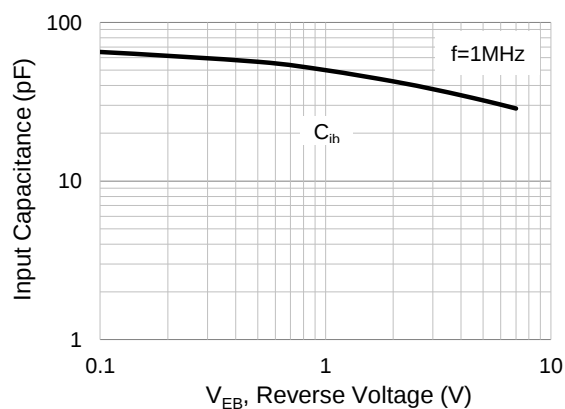


Fig.4 Input Capacitance

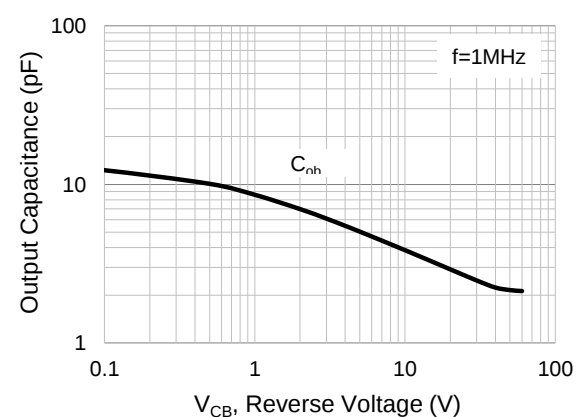


Fig.5 Output Capacitance

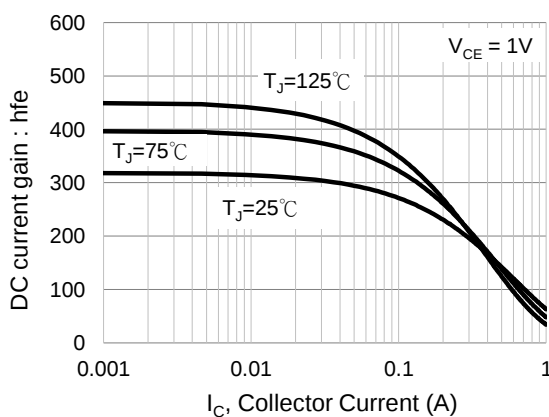


Fig.6 Typical DC Current Gain

BC817DPN-25

PNP TYPICAL CHARACTERISTIC CURVES

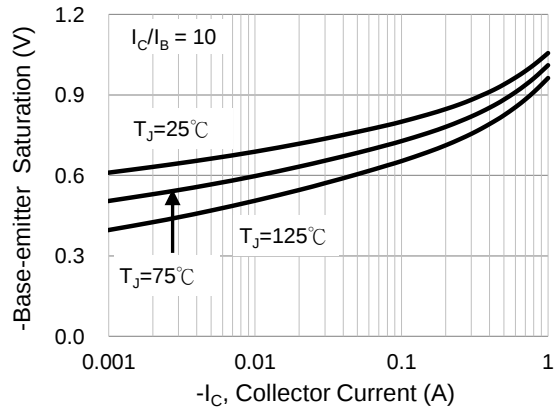


Fig.1 Typical Base-Emitter Saturation Voltage

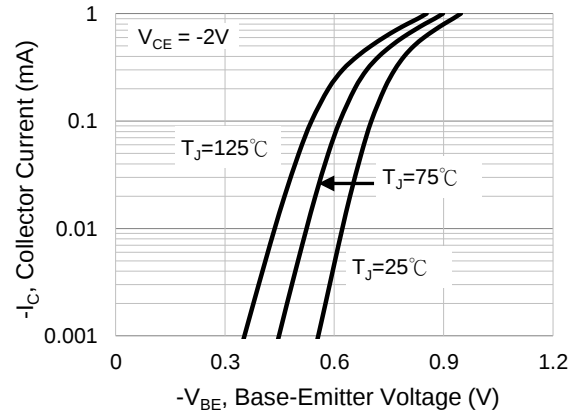


Fig.2 Typical Base-Emitter Turn ON Voltage

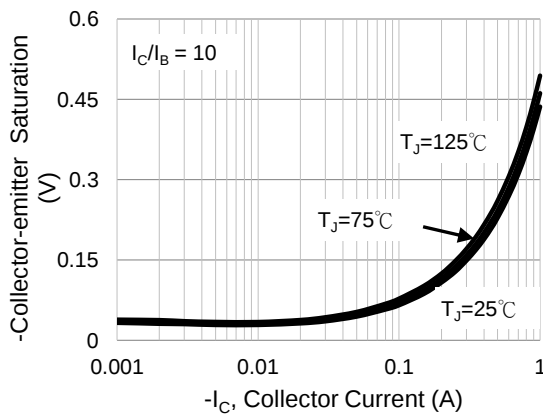


Fig.3 Typical Collector-Emitter Saturation

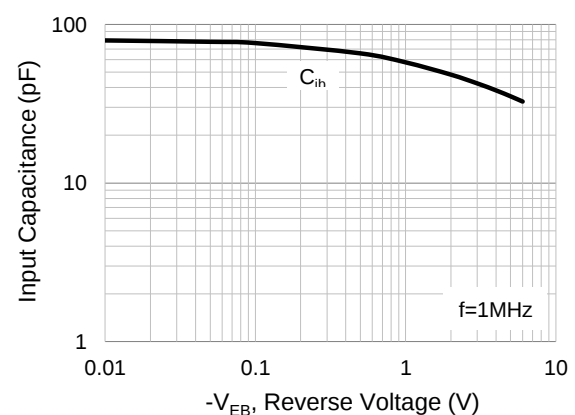


Fig.4 Input Capacitance

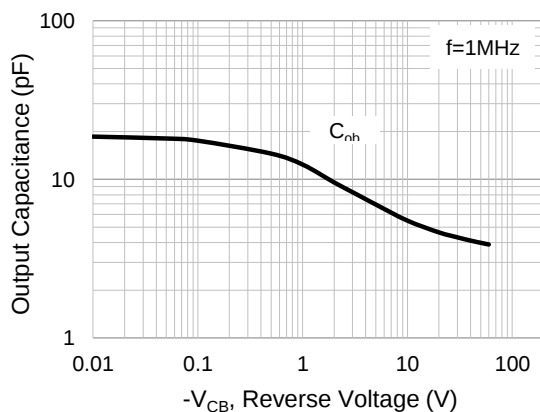


Fig.5 Output Capacitance

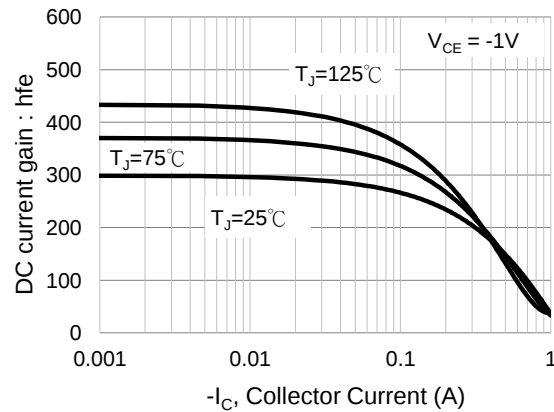


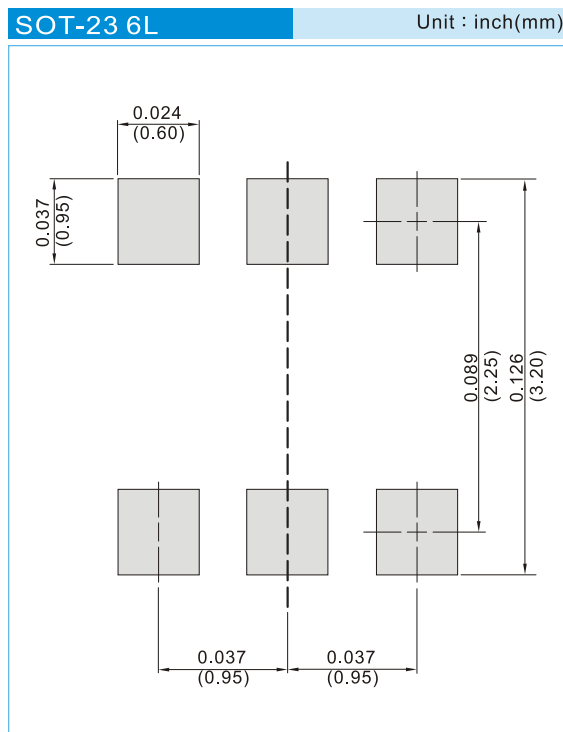
Fig.6 Typical DC Current Gain

BC817DPN-25

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
BC817DPN-25_R1_00001	SOT-23 6L	3K pcs / 7" reel	25C	Halogen free

MOUNTING PAD LAYOUT





BC817DPN-25

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.