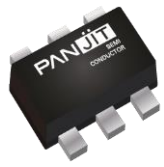
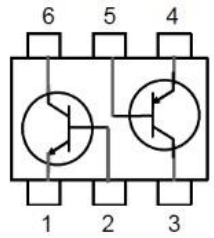
BC847BPNTB6

Dual Surface Mount NPN/PNP Transistors

Voltage 45V **Current** 100mA

SOT-563





Features

- Electrically-Isolated Complimentary Transistor Pairs
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 Standard

Mechanical Data

- Case : SOT-563 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0026 grams

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

PARAMETER	SYMBOL	LIMIT	UNITS
NPN			
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
PNP			
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-100	mA
THERMAL CHARACTERISTICS			
Thermal Resistance, Junction to Ambient(Note 1)	$R_{\theta JA}$	625	°C/W
Operating Junction Temperature Range	T_J	-55~150	°C
Storage Temperature Range	T_{STG}	-55~150	°C

Note : FR-4 board 70 x 60 x 1mm with minimum recommended pad layout.

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
NPN Electrical Characteristics(Note 2)						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C= 10mA	45	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C= 10uA, V_{EB}= 0	50	-	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C= 10uA	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E= 1uA	6	-	-	V
Collector Cutoff Current	I_{CBO}	V_{CB}= 30V, I_E= 0	-	-	15	nA
		T_J=150°C	-	-	5	uA
Emitter Cutoff Current	I_{EBO}	V_{EB}= 5V, I_C= 0	-	-	100	nA
DC Current Gain	h_{FE}	V_{CE}= 5V, I_C= 2mA	200	-	450	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C= 10mA, I_B= 0.5mA	-	-	0.1	V
		I_C= 100mA, I_B= 5mA	-	-	0.4	
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C= 10mA, I_B= 0.5mA	-	0.75	-	V
Base-Emitter Voltage	V_{BE}	V_{CE}= 5V, I_C= 2mA	0.58	-	0.7	V
Transition Frequency	f_T	V_{CE}= 5V, I_C= 10mA f = 100MHz	100	-	-	MHz
Collector-Base Capacitance	C_{CBO}	V_{CB}= 10V, f=1MHz	-	-	1.5	pF
Emitter-Base Capacitance	C_{EBO}	V_{EB}= 0.5V, f=1MHz	-	7	-	pF

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
PNP Electrical Characteristics(Note 2)						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C= -10mA	-45	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C= -10uA, V_{EB}= 0	-50	-	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C= -10uA	-50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E= -1uA	-5	-	-	V
Collector Cutoff Current	I_{CBO}	V_{CB}= -30V, I_E= 0	-	-	-15	nA
		T_J=150°C	-	-	-4	uA
Emitter Cutoff Current	I_{EBO}	V_{EB}= -5V, I_C= 0	-	-	-100	nA
DC Current Gain	h_{FE}	V_{CE}= -5V, I_C= -2mA	200	-	475	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C= -10mA,I_B= -0.5mA	-	-	-0.3	V
		I_C= -100mA, I_B= -5mA	-	-	-0.65	
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C= -10mA, I_B= -0.5mA	-	-0.7	-	V
Base-Emitter Voltage	V_{BE}	V_{CE}= -5V, I_C= -2mA	-0.6	-	-0.75	V
Transition Frequency	f_T	V_{CE}= -5V, I_C= -10mA f = 100MHz	100	-	-	MHz
Collector-Base Capacitance	C_{CBO}	V_{CB}= -10V, f=1MHz	-	-	4.5	pF
Emitter-Base Capacitance	C_{EBO}	V_{EB}= -0.5V, f=1MHz	-	11	-	pF

Note 2. Short duration test pulse used to minimize self-heating

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TYPICAL CHARACTERISTIC CURVES

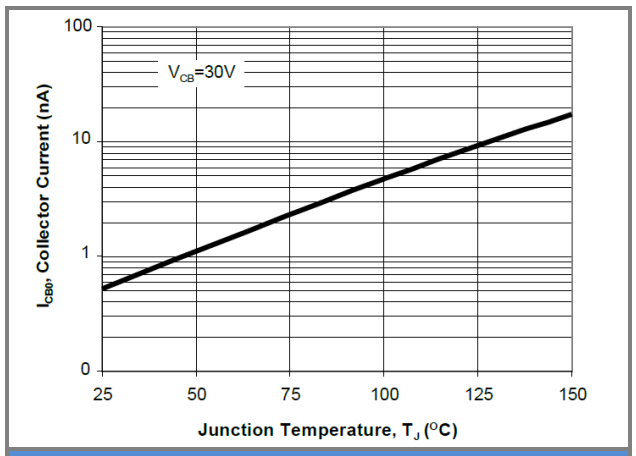

Fig.1 Typical I_{CBO} vs. Junction Temperature

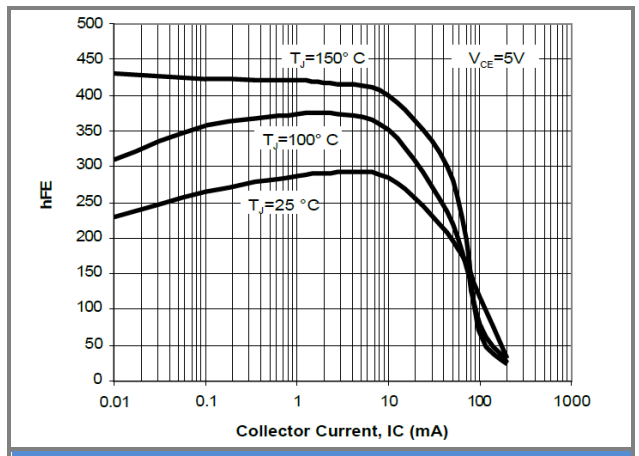

Fig.2 Typical h_{FE} vs. Collector Current

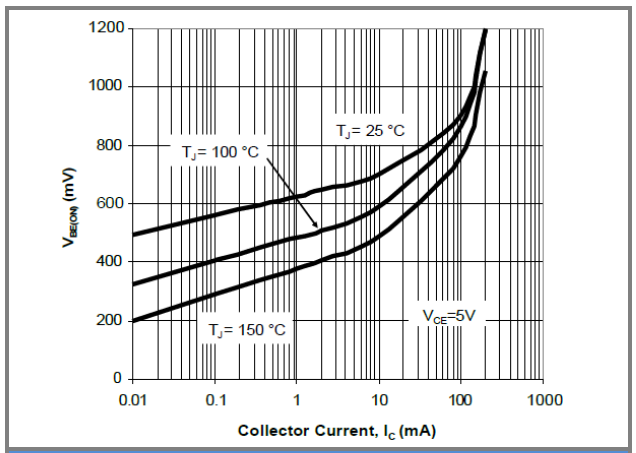

Fig.3 Typical $V_{BE(ON)}$ vs. Collector Current

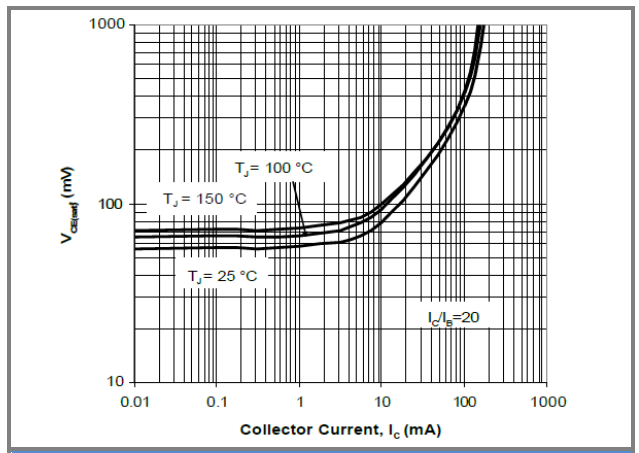

Fig.4 Typical $V_{CE(SAT)}$ vs. Collector Current

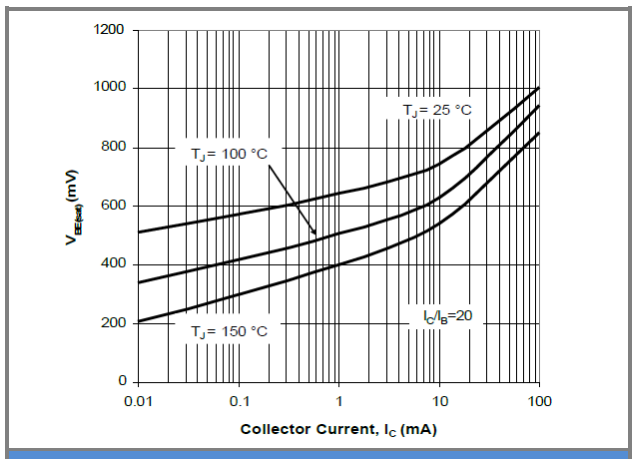

Fig.5 Typical $V_{BE(SAT)}$ vs. Collector Current

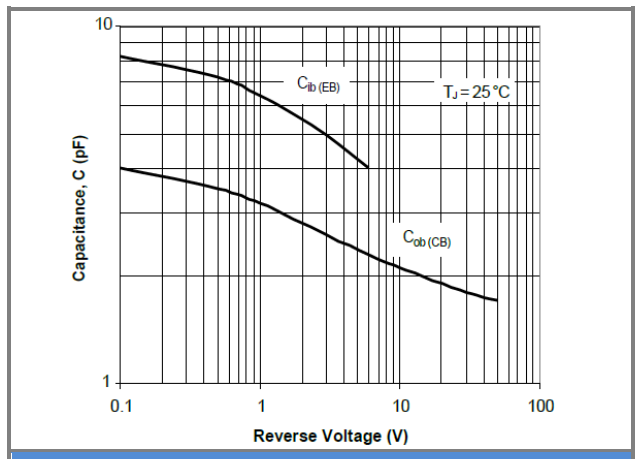

Fig.6 Typical Capacitances vs. Reverse Voltage

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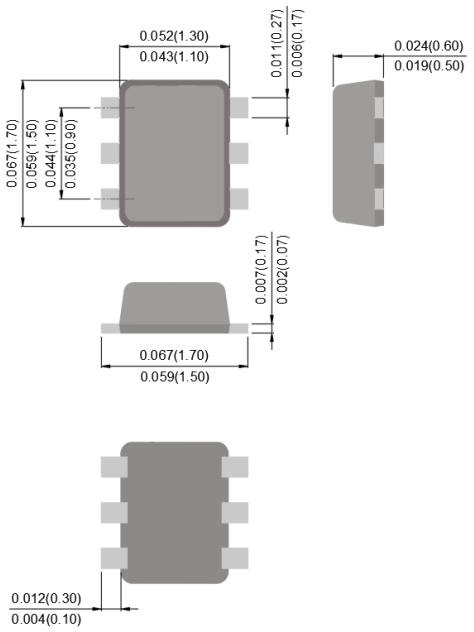
Product and Packing Information

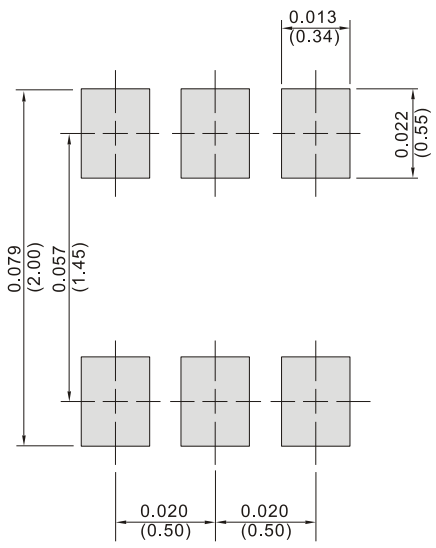
Part No.	Package Type	Packing Type	Marking
BC847BPNTB6	SOT-563	4K pcs / 7” reel	47P
BC847BPNTB6	SOT-563	10K pcs / 13” reel	47P

Packaging Information & Mounting Pad Layout

SOT-563 Dimension — Unit: inch(mm)



SOT-563 Pad Layout — Unit: inch(mm)



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