



DUAL SURFACE MOUNT NPN/PNP TRANSISTORS (COMPLIMENTARY)

This device contains two electrically-isolated complimentary pair (NPN and PNP) general-purpose transistors. This device is ideal for portable applications where board space is at a premium.

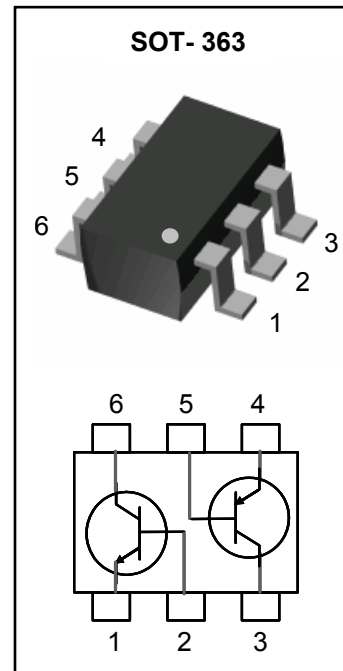
FEATURES

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

APPLICATIONS

- General Purpose Amplifier Applications
- Hand-Held Computers, PDAs

Device Marking Code: 47P



MAXIMUM RATINGS - NPN

$T_J = 25^\circ\text{C}$ Unless otherwise noted

Rating	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage Voltage	V_{EBO}	6.0	V
Collector Current	I_C	100	mA

MAXIMUM RATINGS - PNP

$T_J = 25^\circ\text{C}$ Unless otherwise noted

Rating	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-100	mA

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 1)	P_D	200	mW
Operating Junction Temperature Range	T_J	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction to Ambient (Note 1)	R_{thja}	556	$^\circ\text{C/W}$

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



NPN ELECTRICAL CHARACTERISTICS (Note 2)

$T_J = 25^\circ\text{C}$ Unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}$	45	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = 10\mu\text{A}, V_{EB} = 0$	50	-	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}$	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1.0\mu\text{A}$	6.0	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$ $T_J = 150^\circ\text{C}$	-	-	15	nA
			-	-	5	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	-	-	100	nA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 2.0\text{mA}$	200	-	450	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	-	-	0.1	V
			-	-	0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$	-	0.75	-	V
Base-Emitter Voltage	V_{BE}	$V_{CE} = 5\text{V}, I_C = 2.0\text{mA}$	0.58	-	0.7	V
Gain-Bandwidth Product	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$ $f = 100\text{MHz}$	100	-	-	MHz
Collector-Base Capacitance	C_{CBO}	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}$	-	-	1.5	pF
Emitter-Base Capacitance	C_{EBO}	$V_{EB} = 0.5\text{V}, f = 1.0\text{MHz}$	-	7	-	pF

PNP ELECTRICAL CHARACTERISTICS (Note 2)

$T = 25^\circ\text{C}$ Unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}$	-45	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -10\mu\text{A}, V_{EB} = 0$	-50	-	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}$	-50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -1.0\mu\text{A}$	-5.0	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = -30\text{V}, I_E = 0$ $T_J = 150^\circ\text{C}$	-	-	-15	nA
			-	-	-4.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$	-	-	-100	nA
DC Current Gain	h_{FE}	$V_{CE} = -5\text{V}, I_C = -2.0\text{mA}$	200	-	475	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5\text{mA}$	-	-	-0.3	V
			-	-	-0.65	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$	-	-0.7	-	V
Base-Emitter Voltage	V_{BE}	$V_{CE} = -5\text{V}, I_C = -2.0\text{mA}$	-0.6	-	-0.75	V
Gain-Bandwidth Product	f_T	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$ $f = 100\text{MHz}$	100	-	-	MHz
Collector-Base Capacitance	C_{CBO}	$V_{CB} = -10\text{V}, f = 1.0\text{MHz}$	-	-	4.5	pF
Emitter-Base Capacitance	C_{EBO}	$V_{EB} = -0.5\text{V}, f = 1.0\text{MHz}$	-	11	-	pF

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



ELECTRICAL CHARACTERISTICS CURVE

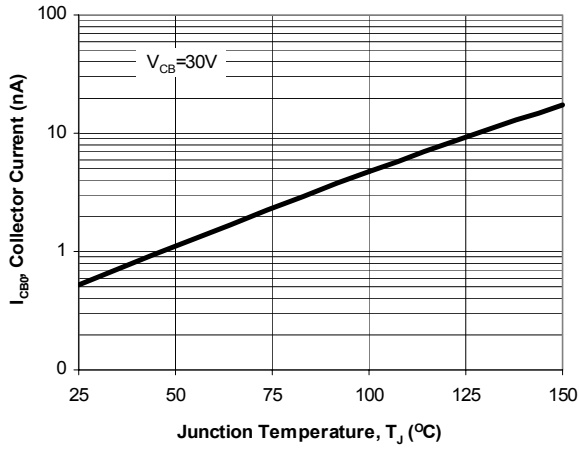


Fig. 1. Typical I_{CB0} vs. Junction Temperature

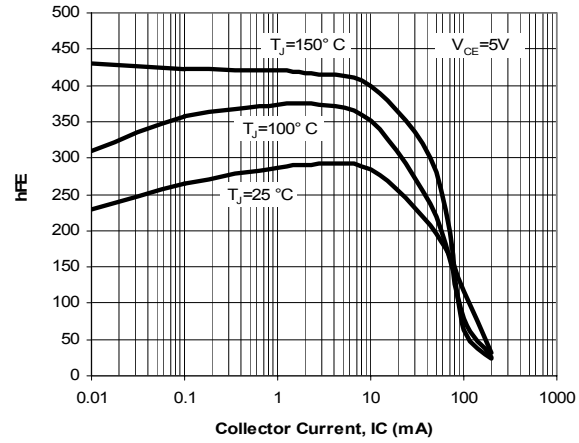


Fig. 2. Typical h_{FE} vs. Collector Current

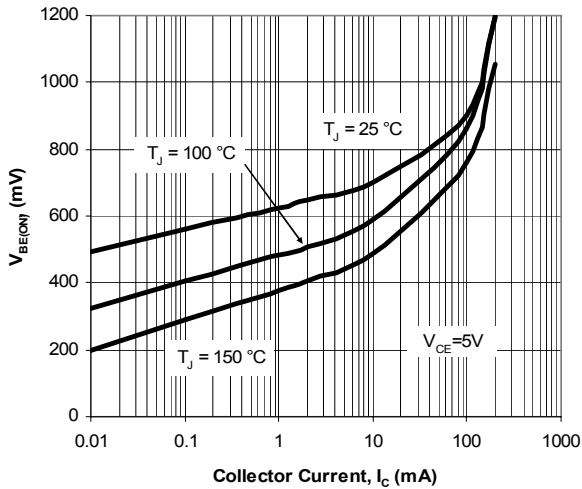


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

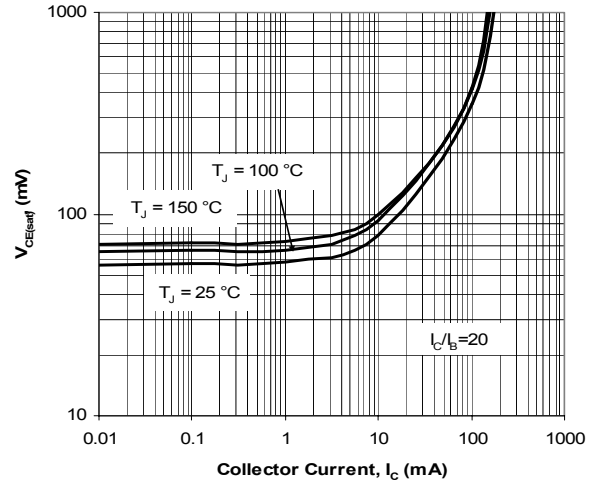


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

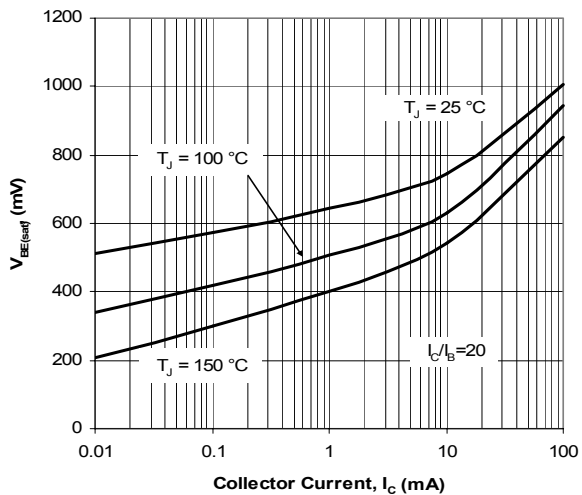


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

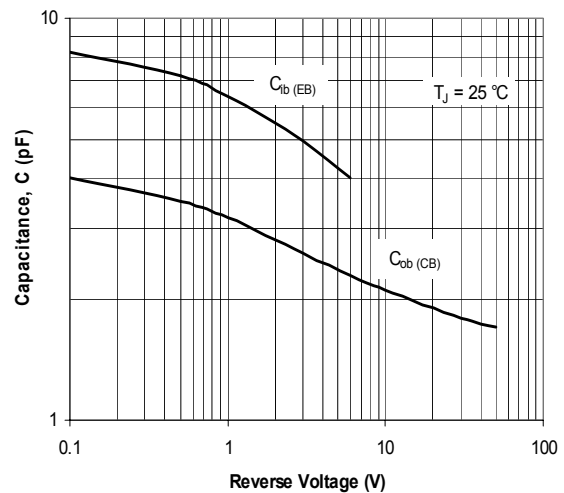
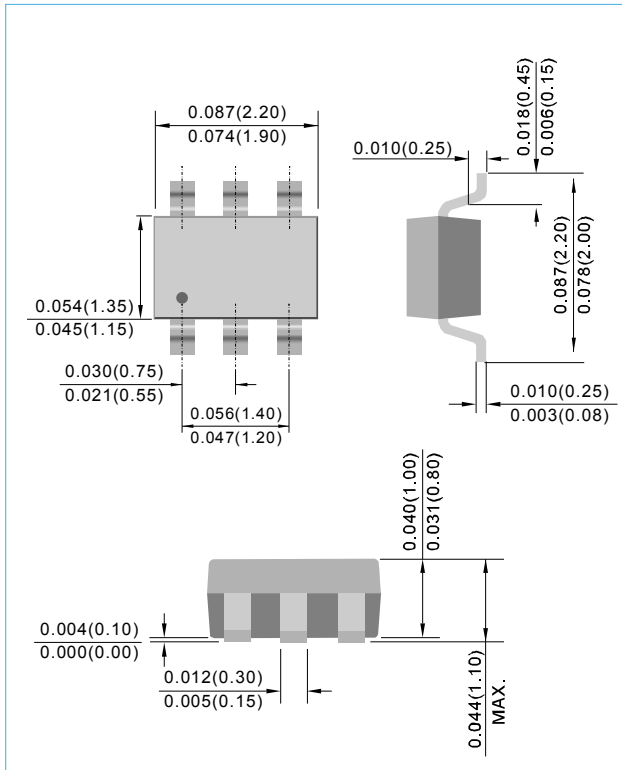


Fig. 6. Typical Capacitances vs. Reverse Voltage

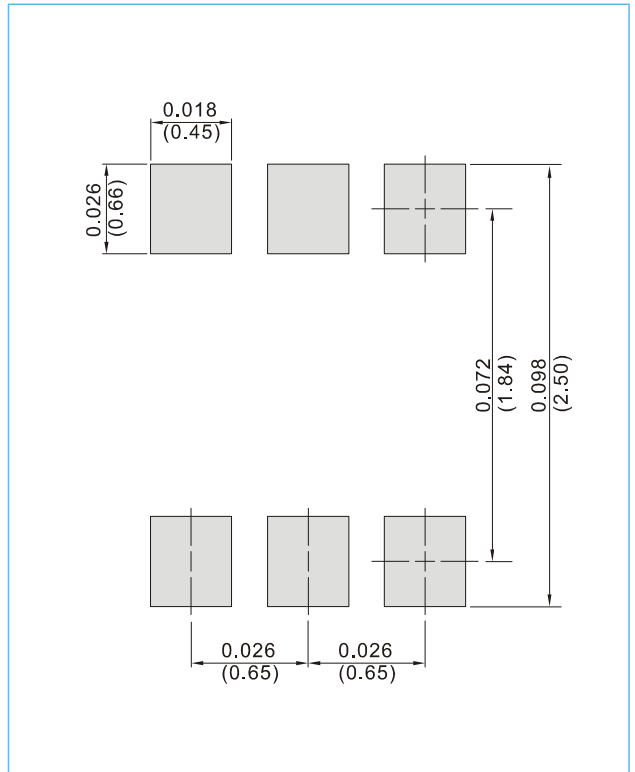


PACKAGE LAYOUT AND SUGGESTED PAD DIMENSIONS

SOT-363 Unit : inch(mm)



SOT-363 Unit : inch(mm)



ORDERING INFORMATION

BC847BPN T/R7 - 3,000 units per 7 inch reel

BC847BPN T/R13 - 10,000 units per 13 inch reel



BC847BPN

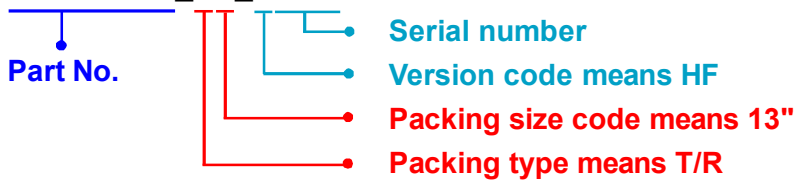
Part No_packing code_Version

BC847BPN_R1_00001

BC847BPN_R2_00001

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



BC847BPN

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.

单击下面可查看定价，库存，交付和生命周期等信息

[>>Panjit\(强茂\)](#)