

500mW, NPN Small Signal Transistor

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: TO-92
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 8mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_{CBO}	30-80	V
V_{CEO}	30-65	V
V_{EBO}	6	V
I_C	100	mA
h_{FE}	220-800	
Package	TO-92	
Configuration	Single Dice	



1. Collector 2. Base 3. Emitter
TO-92 Plastic Package

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Marking code on the device		BC8xxA/B/C (Note 1)	
Power dissipation	P_D	500	mW

Notes:

1. "xx" is device code from "46" to "50", "MARKING" should follow the "PART NO."

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Collector-base voltage, emitter open	BC546	V_{CBO}	80	V
	BC547,BC550		50	
	BC548,BC549		30	
Collector-emitter voltage, base open	BC546	V_{CEO}	65	V
	BC547,BC550		45	
	BC548,BC549		30	
Emitter-base voltage, collector open	BC546	V_{EBO}	6	V
	BC547,BC550		6	
	BC548,BC549		6	
Collector current		I_C	100	mA
Peak collector current		I_{CM}	200	mA
Junction temperature		T_J	-65 to +150	$^\circ\text{C}$
Storage temperature		T_{STG}	-65 to +150	$^\circ\text{C}$

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS		SYMBOL	MIN	TYP	MAX	UNIT
Collector cutoff current, emitter open	$V_{CB} = 30\text{ V}$		I_{CBO}	-	-	15	nA
Emitter cutoff current, collector open	$V_{EB} = 5\text{ V}$		I_{EBO}	-	-	100	nA
Collector-base voltage, emitter open	$I_C = 100\text{ }\mu\text{A}$	BC546	V_{CBO}	80	-	-	V
		BC547,BC550		50	-	-	
		BC548,BC549		30	-	-	
Collector-emitter voltage, base open	$I_C = 10\text{ mA}$	BC546	V_{CEO}	65	-	-	V
		BC547,BC550		45	-	-	
		BC548,BC549		30	-	-	
Emitter-base voltage, collector open	$I_E = 100\text{ }\mu\text{A}$	BC546	V_{EBO}	6	-	-	V
		BC547,BC550		6	-	-	
		BC548,BC549		6	-	-	
DC current gain	$V_{CE} = 5\text{ V},$ $I_C = 2\text{ mA}$	Current gain group :A	h_{FE}	110	-	220	
		B		200	-	450	
		C		420	-	800	

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX(*)	PACKAGE	PACKING
BC5xxA/B/C (Note 1)	A1	G	TO-92	4K / Ammo
	B1			5K / Bulk

Notes:

1. "xx" is device code from "46" to "50"

*: optional available

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BC546A A1G	BC546A	A1	G	Green compound

CHARACTERISTICS CURVES

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

Fig. 1 Static Characteristic

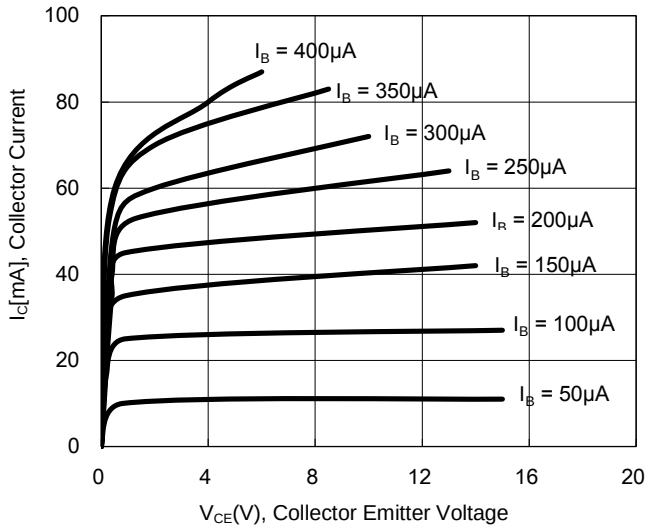


Fig. 2 Transfer Characteristic

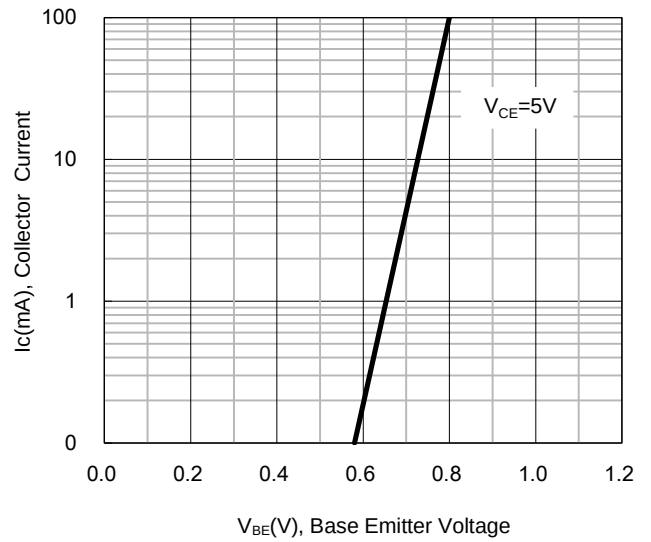


Fig. 3 DC Current Gain

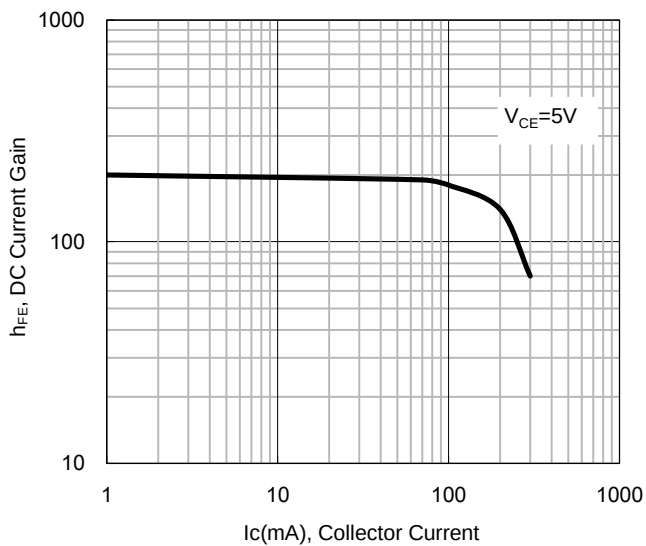
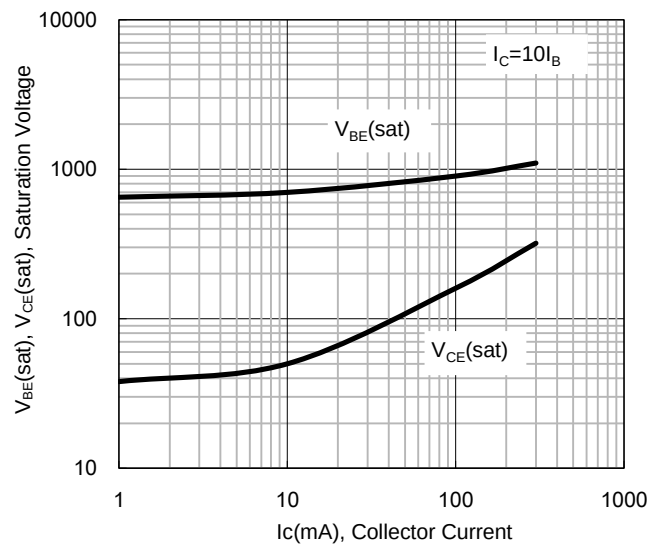
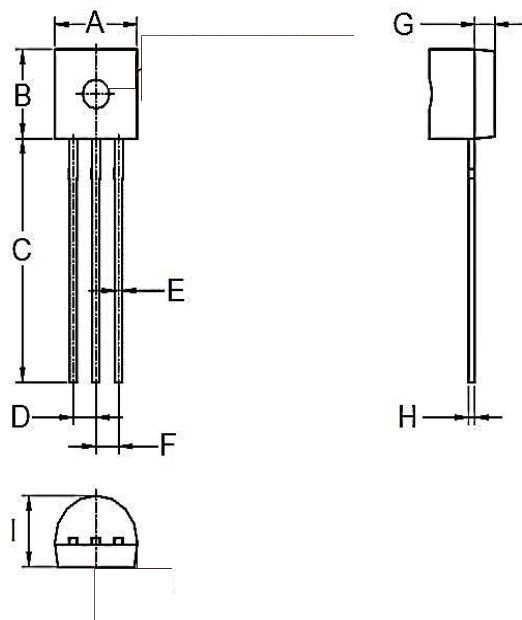


**Fig. 4 Base Emitter Saturation Voltage
Collector Emitter Saturation Voltage**



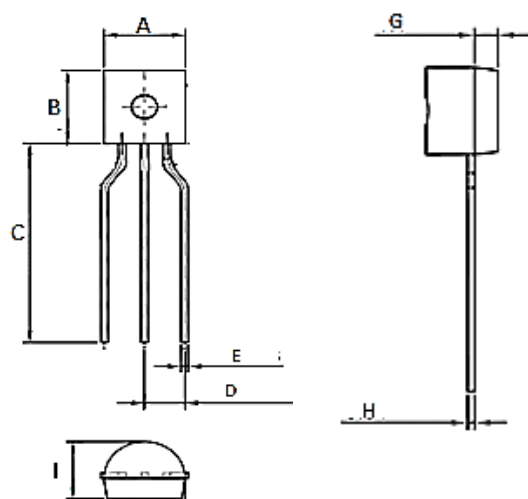
PACKAGE OUTLINE DIMENSION

TO-92 Bulk



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	4.40	5.10	0.173	0.201
B	4.30	4.70	0.169	0.185
C	12.50	14.50	0.492	-
D	1.17	1.37	0.046	0.054
E	0.35	0.55	0.014	0.022
F	1.17	1.37	0.046	0.054
G	0.59	1.40	0.023	0.055
H	0.29	0.51	0.011	0.020
I	3.30	4.10	0.130	0.161

TO-92 Ammo



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	4.30	4.70	0.169	0.185
B	4.30	4.70	0.169	0.185
C	12.50	-	0.492	-
D	2.20	2.80	0.087	0.110
E	0.35	0.55	0.014	0.022
G	1.00	1.20	0.039	0.047
H	0.29	0.51	0.011	0.020
I	3.30	3.70	0.130	0.146

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.