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

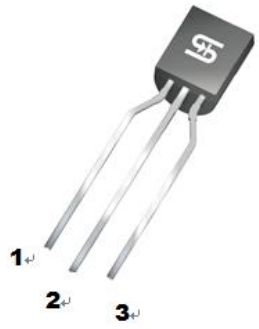
- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

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	

Pb-Free RoHS COMPLIANT



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

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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°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	°C
Storage temperature		T_{STG}	-65 to +150	°C

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)							
PARAMETER	**CONDITIONS**		**SYMBOL**	**MIN**	**TYP**	**MAX**	**UNIT**
Collector cutoff current, emitter open	V_{CB} = 30 V		I_{CBO}	-	-	15	nA
Emitter cutoff current, collector open	V_{EB} = 5 V		I_{EBO}	-	-	100	nA
Collector-base voltage, emitter open	I_C = 100 µA	BC546	V_{CBO}	80	-	-	V
		BC547,BC550		50	-	-	
		BC548,BC549		30	-	-	
Collector-emitter voltage, base open	I_C= 10 mA	BC546	V_{CEO}	65	-	-	V
		BC547,BC550		45	-	-	
		BC548,BC549		30	-	-	
Emitter-base voltage, collector open	I_E = 100 µA	BC546	V_{EBO}	6	-	-	V
		BC547,BC550		6	-	-	
		BC548,BC549		6	-	-	
DC current gain	V_{CE}= 5 V, I_C = 2 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°C unless otherwise noted)

Fig. 1 Static Characteristic

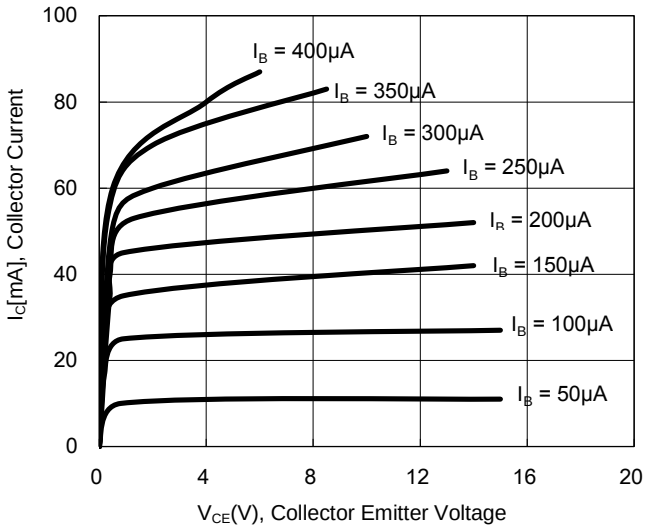


Fig. 2 Transfer Characteristic

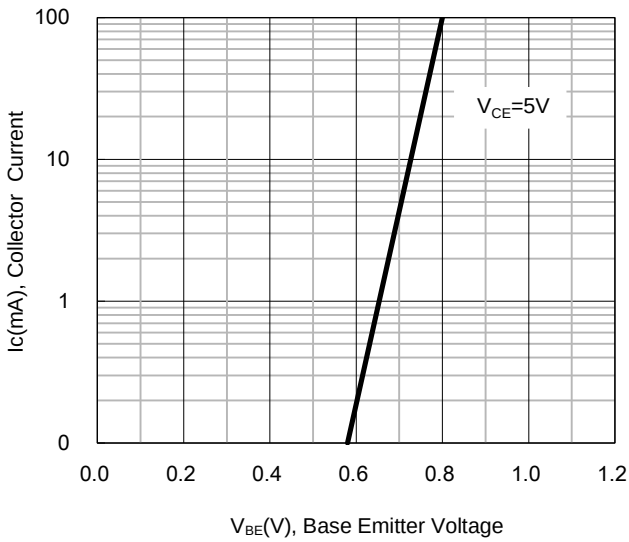


Fig. 3 DC Current Gain

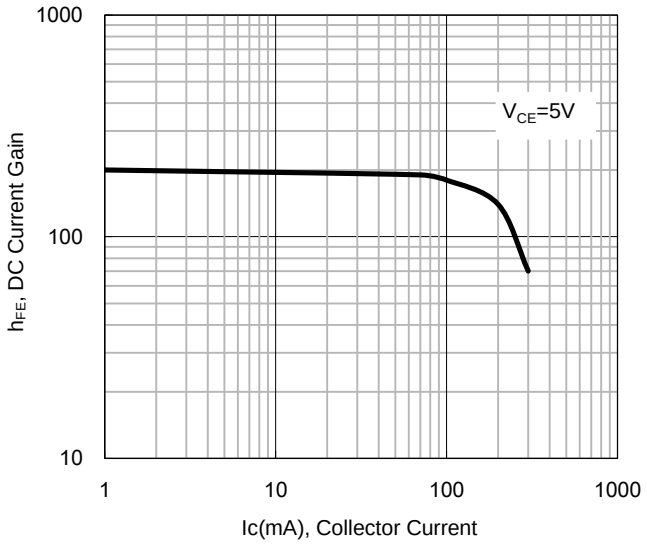
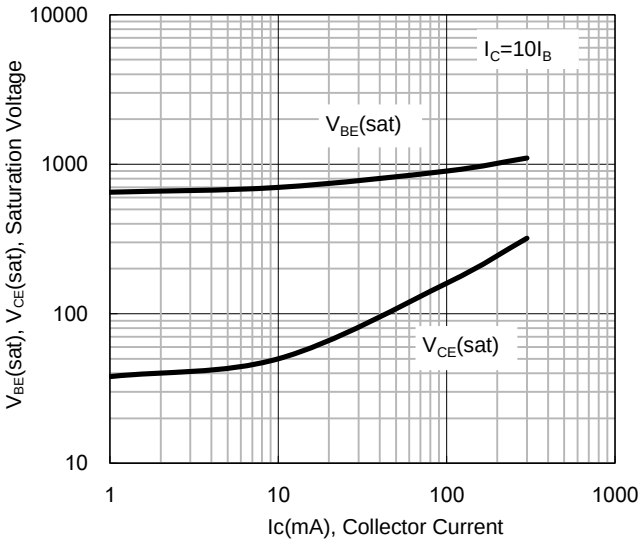
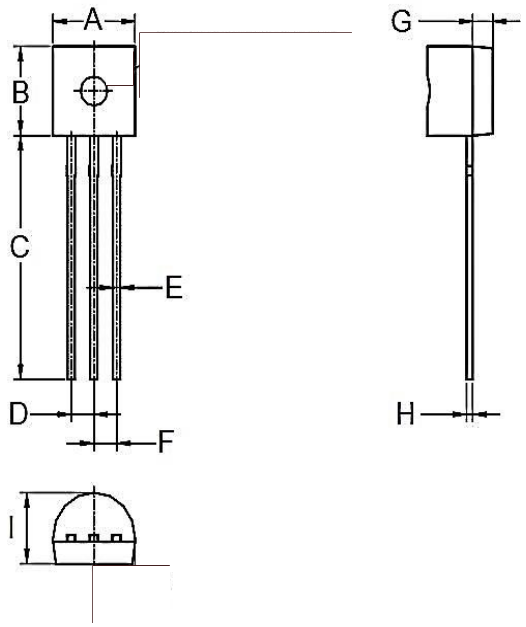


Fig. 4 Base Emitter Saturation Voltage
Collector Emitter Saturation Voltage



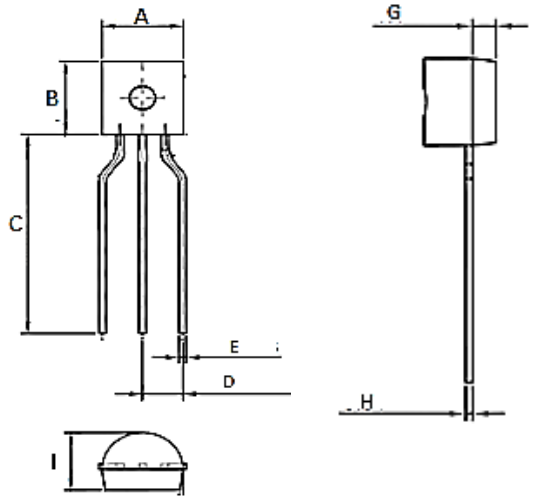
PACKAGE OUTLINE DIMENSION

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

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