

**Small Signal Product**
**NPN Transistor**
**FEATURES**

- For switching and AF amplifier applications
- These types are subdivided into three groups -16, -25 and -40, according to their current gain
- Moisture sensitivity level 1
- Driver transistor
- Pb free and RoHS compliant
- Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code


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

**TO-92**
**MECHANICAL DATA**

- Case: TO-92 small outline plastic package
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed: 260°C/10s
- Weight: 190 mg (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Total Power dissipation	P <sub>TOT</sub>	625	mW
Collector-Base Voltage	BC337	50	V
	BC338	30	
Collector-Emitter Voltage	BC337	45	V
	BC338	25	
Emitter-Base Voltage	BC337	5	V
	BC338	5	
Collector Current	I <sub>C</sub>	800	mA
Peak Collector Current	I <sub>CM</sub>	1000	mA
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

PARAMETER	SYMBOL	MIN	MAX	UNIT		
Collector-Base Breakdown Voltage	BC337 BC338	I <sub>C</sub> = 100µA	V <sub>(BR)CBO</sub>	50	-	V
				30		
Collector-Emitter Breakdown Voltage	BC337 BC338	I <sub>C</sub> = 2mA	V <sub>(BR)CEO</sub>	45	-	V
				25		
Emitter-Base Breakdown Voltage	BC337 BC338	I <sub>E</sub> = 100µA	V <sub>(BR)EBO</sub>	5	-	V
				5		
Collector Base Cutoff Current	BC337 BC338	V <sub>CB</sub> =50V V <sub>CB</sub> =30V	I <sub>CBO</sub>	-	100	nA
				-	100	
Collector Emitter Saturation Voltage	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA	V <sub>CE(sat)</sub>	-	0.7	V	
Base Emitter On Voltage	V <sub>CE</sub> =1V, I <sub>C</sub> =300mA	V <sub>BE(on)</sub>	-	1.2	V	
Transition Frequency	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=50MHz	f <sub>T</sub>	100	-	MHz	
Output Capacitance	V <sub>CB</sub> =10V, f=1MHz	C <sub>ob</sub>	12	-	pF	
DC Current Gain	Current Gain Group: -16 -25 -40	V <sub>CE</sub> = 5V, I <sub>C</sub> = 100mA	h <sub>FE</sub>	100	250	V
				160	400	
				250	630	
				60	-	

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RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 STATIC CHARACTERISTIC

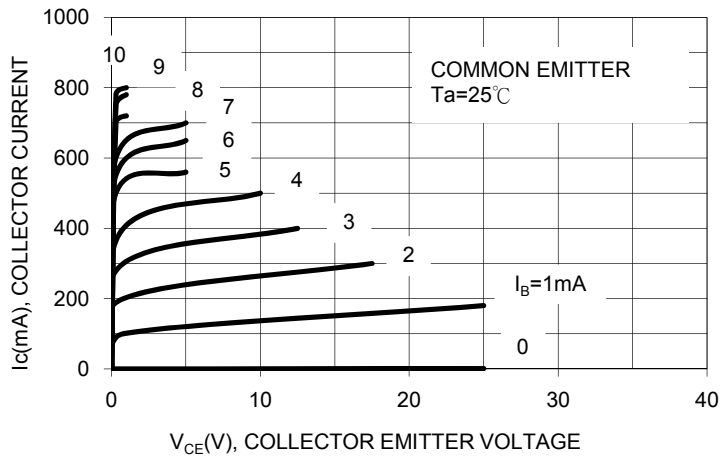


FIG.2 STATIC CHARACTERISTIC

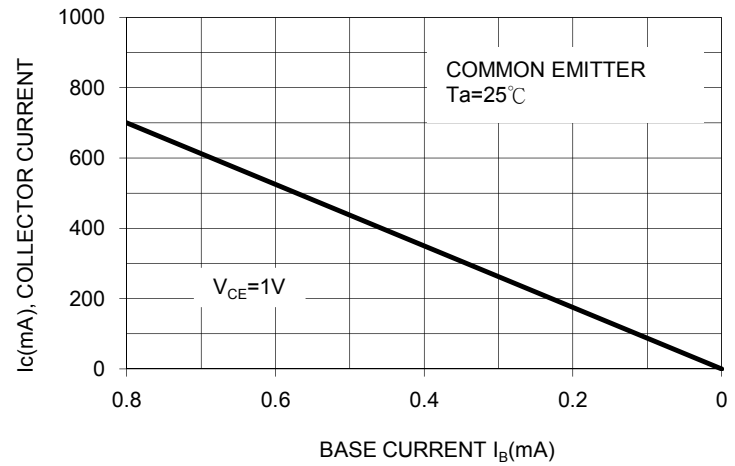


FIG.3 STATIC CHARACTERISTIC

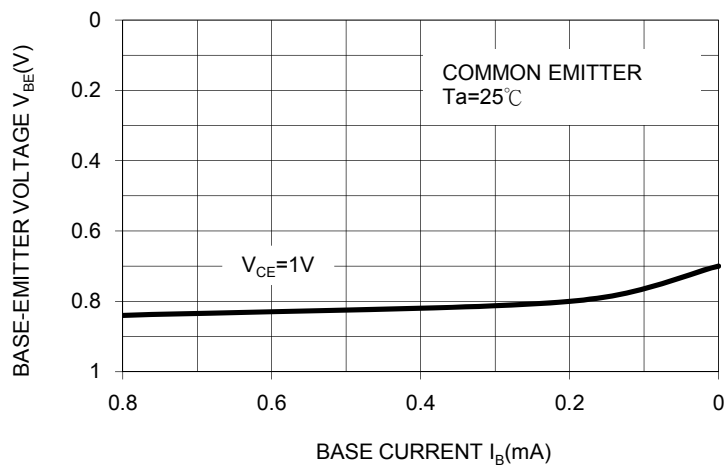


FIG. 4  $h_{FE} - I_C$

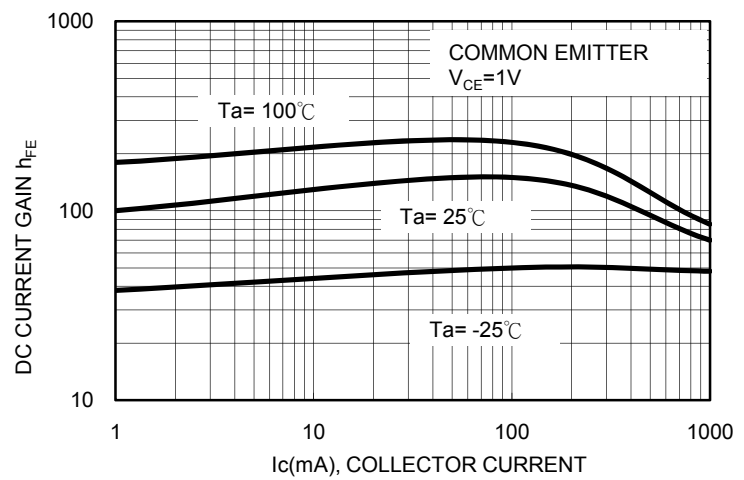


FIG.5  $I_C - V_{CE}$ (LOW VOLTAGE REGION)

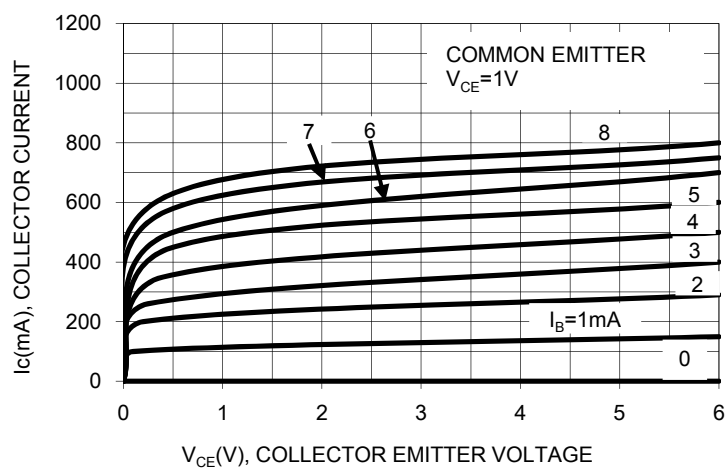
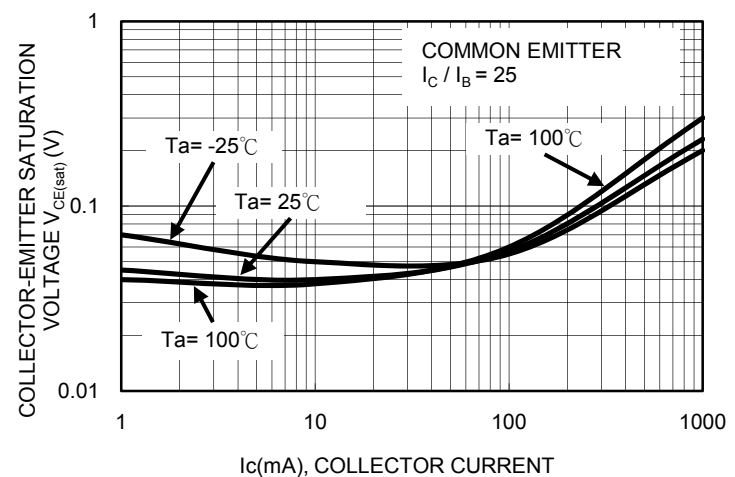


FIG. 6  $V_{CE(sat)} - I_C$



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ORDERING INFORMATION						
PART NO.	MANUFACTURE CODE (Note1)	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING	MARKING
BC33x-16 (Note2)		A1	G	TO-92	4K / Ammo	BC33x-16 (Note2)
BC33x-25 (Note2)		A1	G	TO-92	4K / Ammo	BC33x-25 (Note2)
BC33x-40 (Note2)		A1	G	TO-92	4K / Ammo	BC33x-40 (Note2)
BC33x-16 (Note2)		B1	G	TO-92	5K / Bulk	BC33x-16 (Note2)
BC33x-25 (Note2)		B1	G	TO-92	5K / Bulk	BC33x-25 (Note2)
BC33x-40 (Note2)		B1	G	TO-92	5K / Bulk	BC33x-40 (Note2)

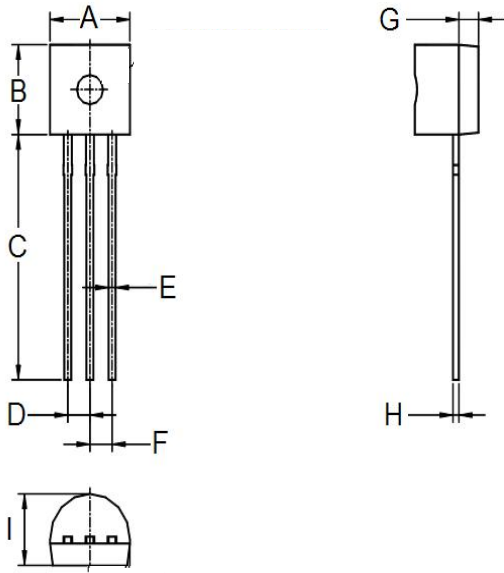
Note1: Indicator of manufacturing site for manufacture special control, if empty means no special control requirement.

Note2: "x" is Device Code from "7" through "8", and "MARKING" should follow the "PART NO."

EXAMPLE					
PREFERRED P/N	PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
BC337-16 A1G	BC337-16		A1	G	Green compound
BC337-16 B1G	BC337-16		B1	G	Green compound
BC337-16-B0 A1G	BC337-16	B0	A1	G	Green compound
BC337-16-B0 B1G	BC337-16	B0	B1	G	Green compound

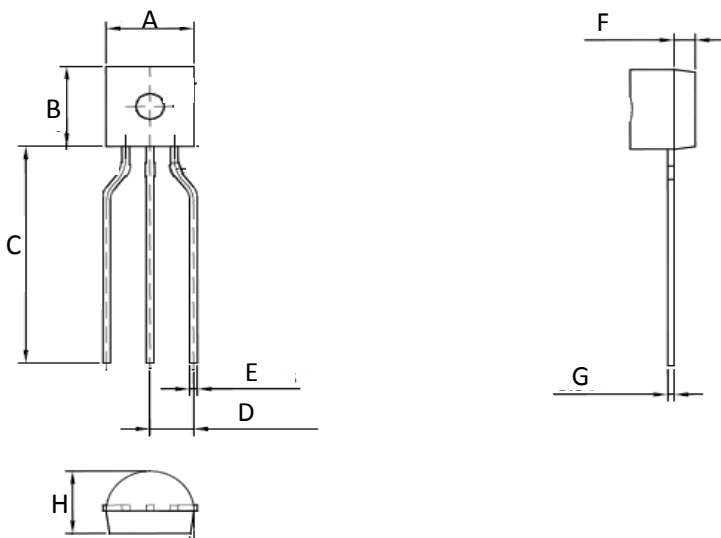
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PACKAGE OUTLINE DIMENSIONS  
TO-92 Bulk



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.30	5.10	0.169	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	5.10	0.169	0.201
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
F	0.59	1.40	0.023	0.055
G	0.29	0.51	0.011	0.020
H	3.30	4.10	0.130	0.161

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