

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

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)



TO-92



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)				
PARAMETER		SYMBOL	VALUE	UNIT
Total Power dissipation		P _{TOT}	625	mW
Collector-Base Voltage	BC337	V _{CBO}	50	V
	BC338		30	
Collector-Emitter Voltage	BC337	V _{CEO}	45	V
	BC338		25	
Emitter-Base Voltage	BC337	V _{EBO}	5	V
	BC338		5	
Collector Current		I _C	800	mA
Peak Collector Current		I _{CM}	1000	mA
Junction and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C

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

Small Signal Product

RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 STATIC CHARACTERISTIC

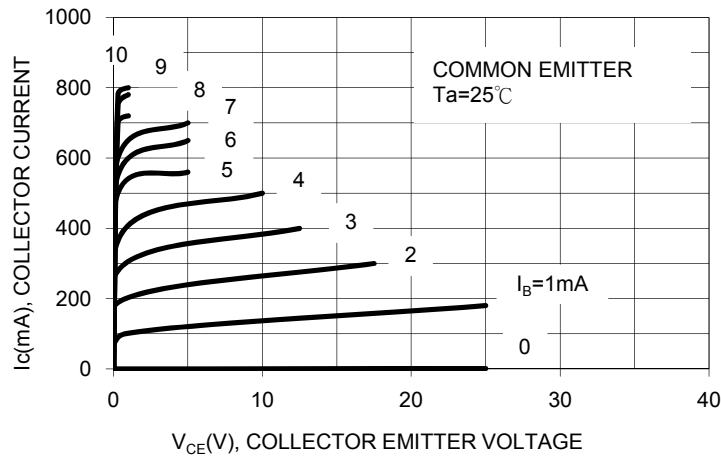


FIG.2 STATIC CHARACTERISTIC

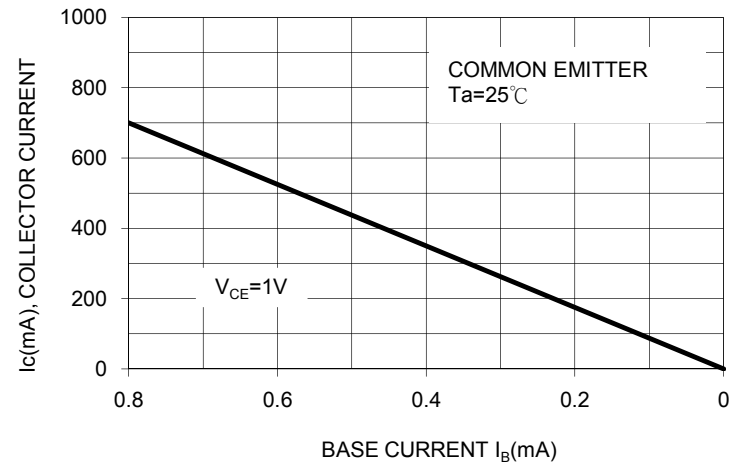


FIG.3 STATIC CHARACTERISTIC

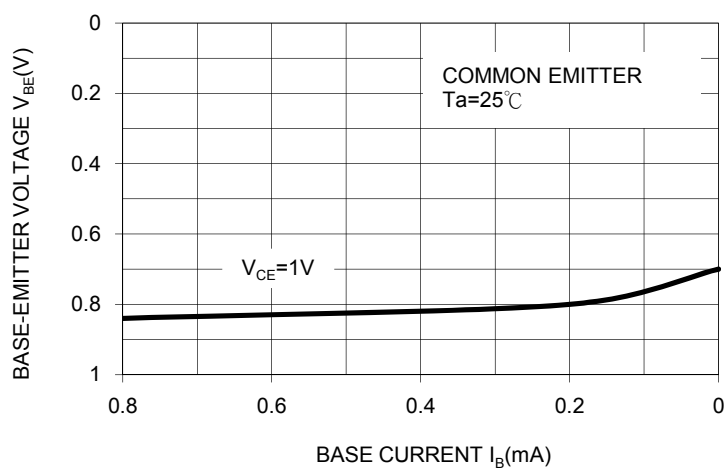


FIG. 4 $h_{FE} - I_C$

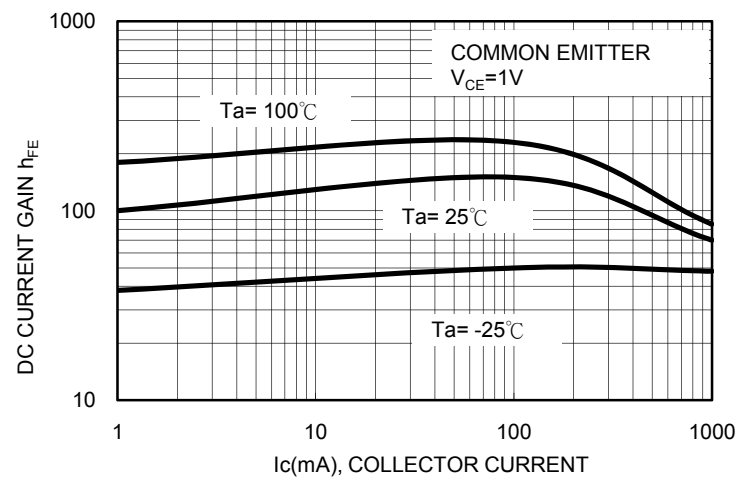


FIG.5 $I_C - V_{CE}$ (LOW VOLTAGE REGION)

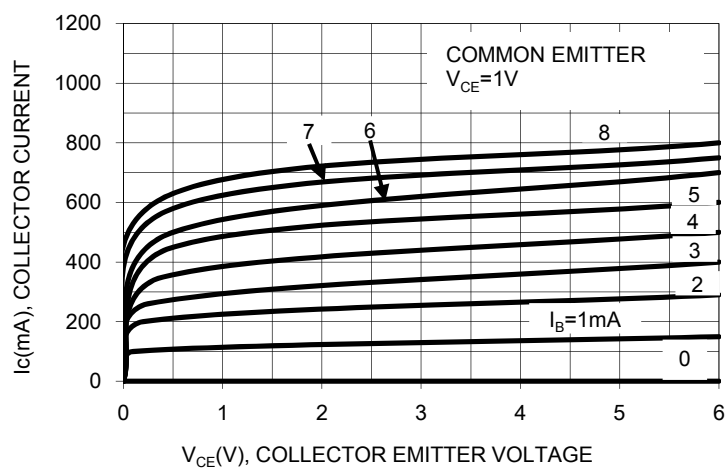
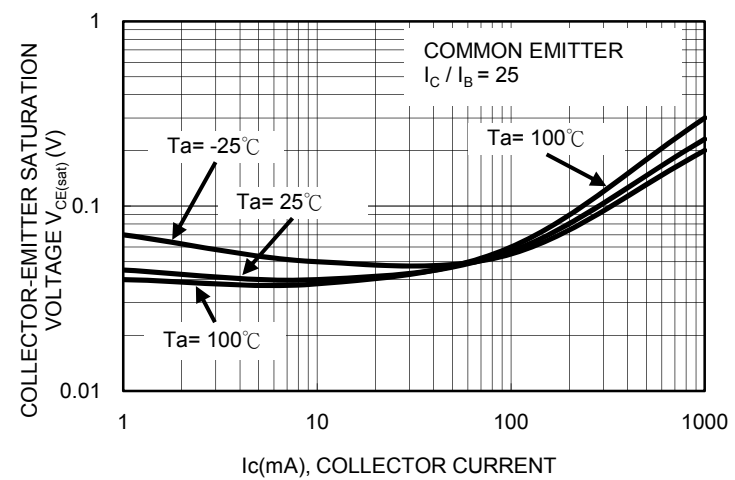


FIG. 6 $V_{CE(sat)} - I_C$



Small Signal Product

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)

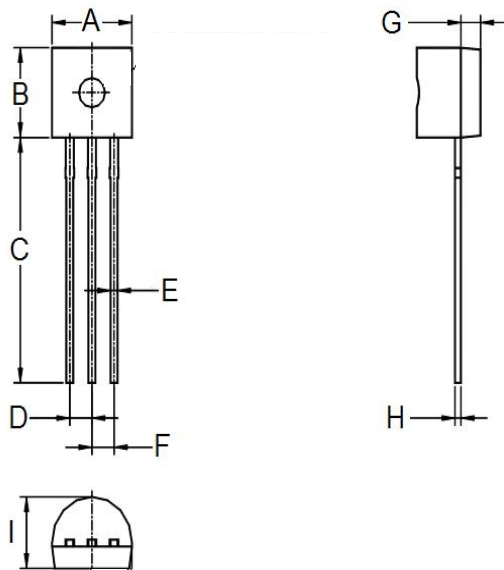
Note1: Indicator of manufacturing site for manufacture special control, if empty means no special control requirement.

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

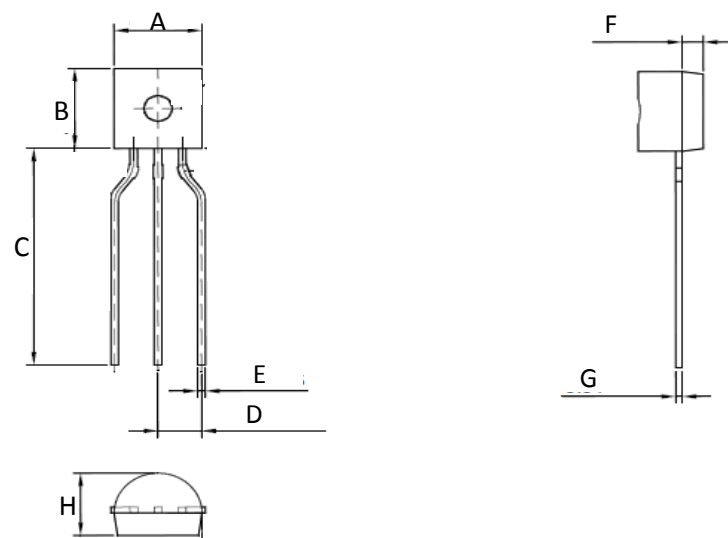
Small Signal Product

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

Small Signal Product**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.