

GBC338

NPN SILICON TRANSISTOR

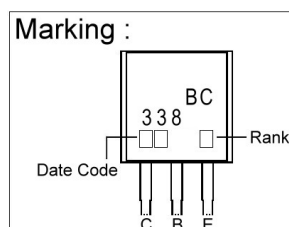
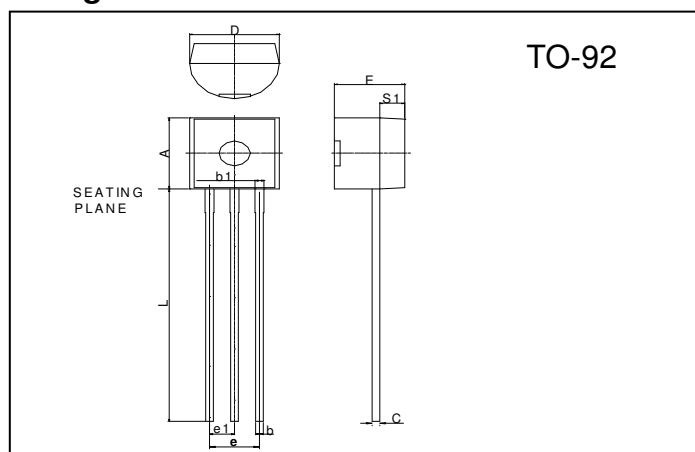
Description

The GBC338 is designed for drive and output-stages of audio amplifiers.

Features

- High DC Current Gain: 100~630 @ $V_{CE}=1V$, $I_C=100mA$
- Complementary to GBC328

Package Dimensions



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.45	4.7	D	4.44	4.7
S1	1.02	-	E	3.30	3.81
b	0.36	0.51	L	12.70	-
b1	0.36	0.76	e1	1.150	1.390
C	0.36	0.51	e	2.42	2.66

Absolute Maximum Ratings ($T_A=25^{\circ}C$)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	25	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current (continuous)	I_C	800	mA
Total Device Dissipation @ $T_A = 25^{\circ}C$	P_D	625	mW
Derate above $25^{\circ}C$		5.0	mW/ $^{\circ}C$
Total Device Dissipation @ $T_C = 25^{\circ}C$	P_D	1.5	W
Derate above $25^{\circ}C$		12	mW/ $^{\circ}C$
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 ~ +150	$^{\circ}C$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	$^{\circ}C/W$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^{\circ}C/W$

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
V_{CBO}	30	-	-	V	$I_C=100\mu A, I_E=0$
V_{CEO}	25	-	-	V	$I_C=10mA, I_B=0$
V_{CES}	30	-	-	V	$I_C=100\mu A, I_E=0$
V_{EBO}	5	-	-	V	$I_E=10\mu A, I_C=0$
I_{CBO}	-	-	100	nA	$V_{CB}=20V, I_E=0$
I_{CES}	-	-	100	nA	$V_{CE}=25V, V_{BE}=0$
I_{EBO}	-	-	100	nA	$V_{EB}=4V, I_C=0$
* $V_{CE(sat)}$	-	-	0.7	V	$I_C=500mA, I_B=50mA$
* $V_{BE(on)}$	-	-	1.2	V	$V_{CE}=1V, I_C=300mA$
* h_{FE1}	100	-	630		$V_{CE}=1V, I_C=100mA$
* h_{FE2}	60	-	-		$V_{CE}=1V, I_C=300mA$
fT	-	210	-	MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$
Cob	-	15	-	pF	$V_{CB}=10V, I_E=0, f=1MHz$

*Pulse Test: Pulse Width $\leq 380\mu s$, Duty Cycle $\leq 2\%$

Classification Of h_{FE1}

Rank	A	B	C
Range	100 ~ 250	160 ~ 400	250 ~ 630

Characteristics Curve

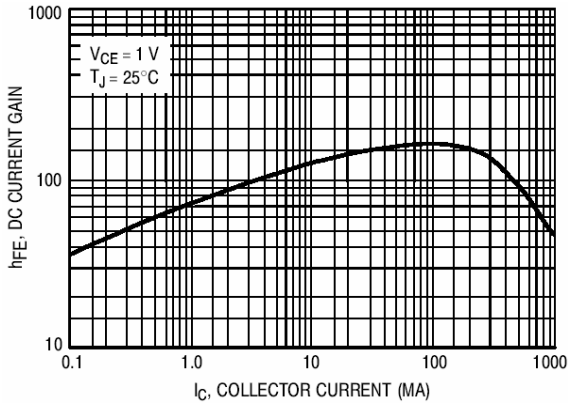


Fig 1. DC Current Gain

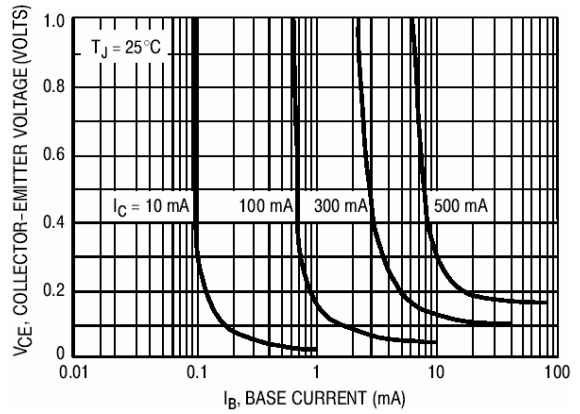


Fig 2. Saturation Region

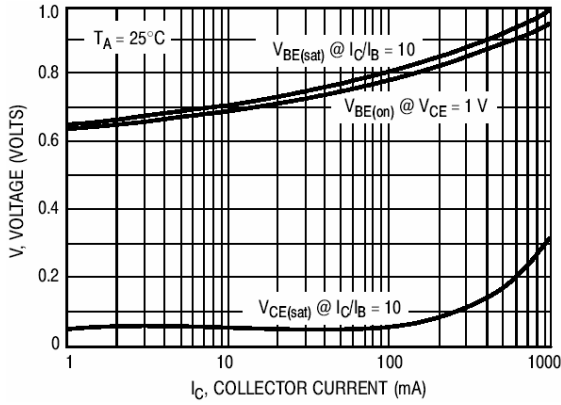


Fig 3. "On" Voltages

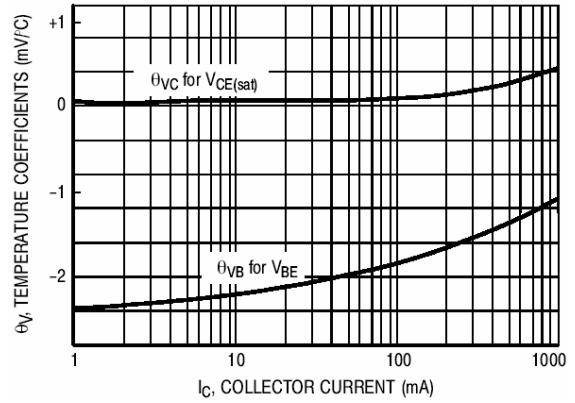


Fig 4. Temperature Coefficients

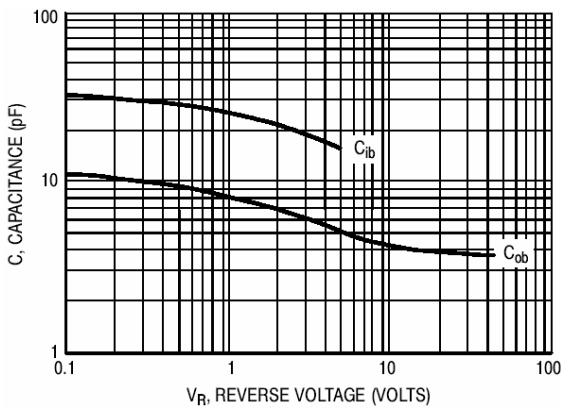


Fig 5. Capacitances

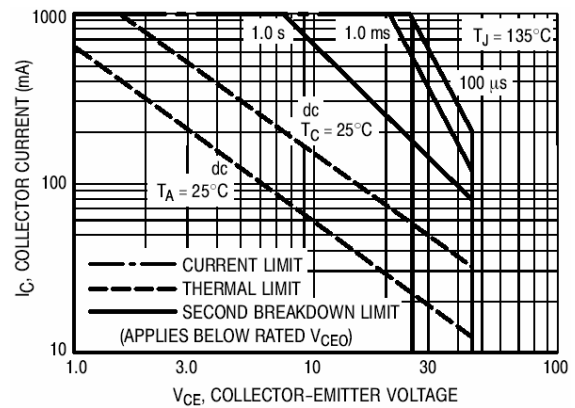


Fig 6. Safe Operating Area

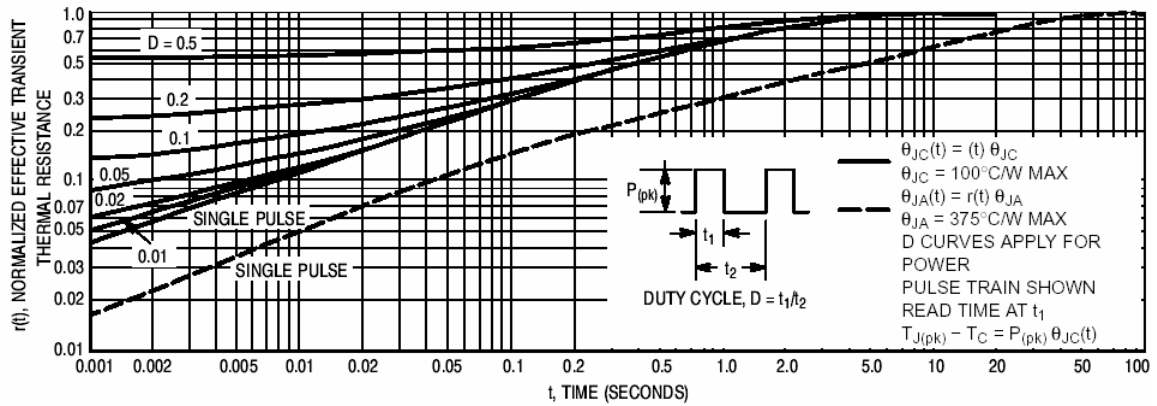


Fig 7. Thermal Response

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