



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

## TO-92 Plastic-Encapsulate Transistors

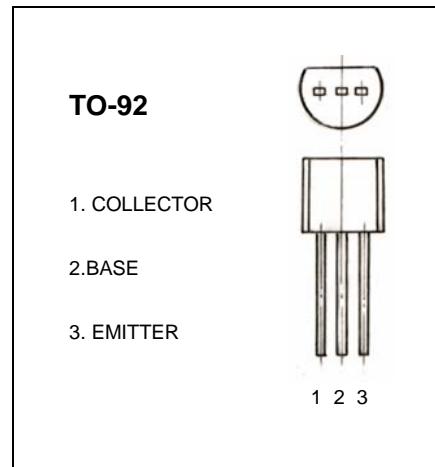
## BC337/BC338 TRANSISTOR (NPN)

## FEATURES

Power dissipation

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage <b>BC337</b>	50	V
	<b>BC338</b>	30	
$V_{CEO}$	Collector-Emitter Voltage <b>BC337</b>	45	V
	<b>BC338</b>	25	
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	800	mA
$P_D$	Total Device Dissipation	625	mW
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$



## ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage <b>BC337</b> <b>BC338</b>	$V_{CBO}$	$I_C= 100\mu\text{A}, I_E=0$	50 30			V
Collector-emitter breakdown voltage <b>BC337</b> <b>BC338</b>	$V_{CEO}$	$I_C= 10\text{mA}, I_B=0$	45 25			V
Emitter-base breakdown voltage	$V_{EBO}$	$I_E= 10\mu\text{A}, I_C=0$	5			V
Collector cut-off current <b>BC337</b> <b>BC338</b>	$I_{CBO}$	$V_{CB}= 45\text{V}, I_E=0$ $V_{CB}= 25\text{V}, I_E=0$			0.1 0.1	uA
Collector cut-off current <b>BC337</b> <b>BC338</b>	$I_{CEO}$	$V_{CE}= 40\text{V}, I_B=0$ $V_{CE}= 20\text{V}, I_B=0$			0.2 0.2	uA
Emitter cut-off current	$I_{EBO}$	$V_{EB}= 4 \text{ V}, I_C=0$			0.1	uA
<b>BC337/BC338</b> <b>BC337-16/BC338-16</b> <b>BC337-25/BC338-25</b> <b>BC337-40/BC338-40</b>	$h_{FE(1)}$	$V_{CE}=1\text{V}, I_C= 100\text{mA}$	100 100 160 250		630 250 400 630	
DC current gain	$h_{FE(2)}$	$V_{CE}=1\text{V}, I_C= 300\text{mA}$	60			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B= 50\text{mA}$			0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C= 500\text{mA}, I_B=50\text{mA}$			1.2	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=1\text{V}, I_C= 300\text{mA}$			1.2	V
Transition frequency	$f_T$	$V_{CE}= 5\text{V}, I_C= 10\text{mA}$ $f = 100\text{MHz}$	210			MHz
Collector Output Capacitance	Cob	$V_{CB}=10\text{V}, I_E=0$ $f=1\text{MHz}$		15		pF

# Typical Characteristics

BC337,338

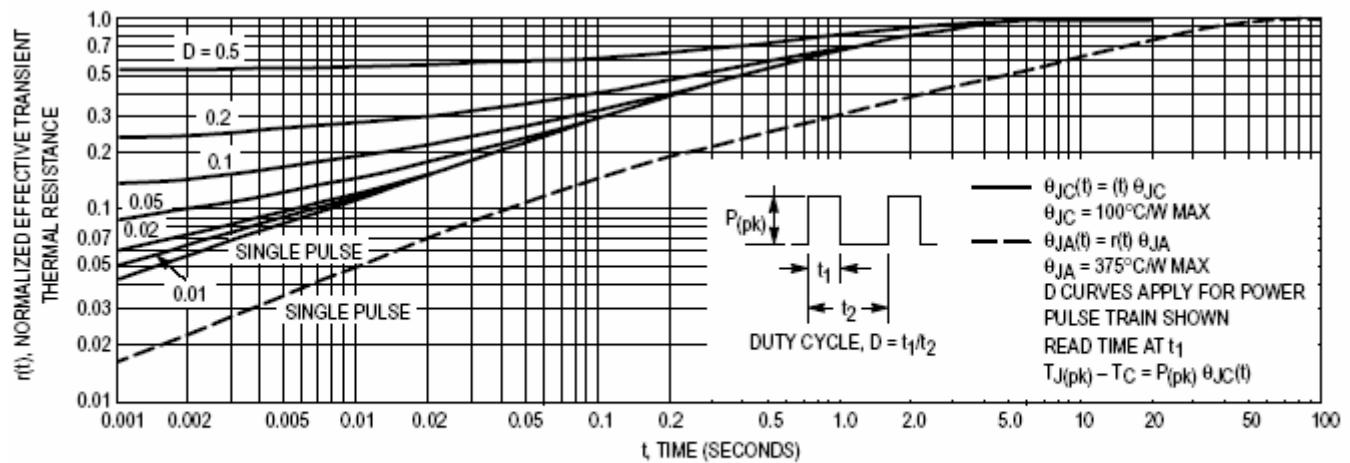


Figure 1. Thermal Response

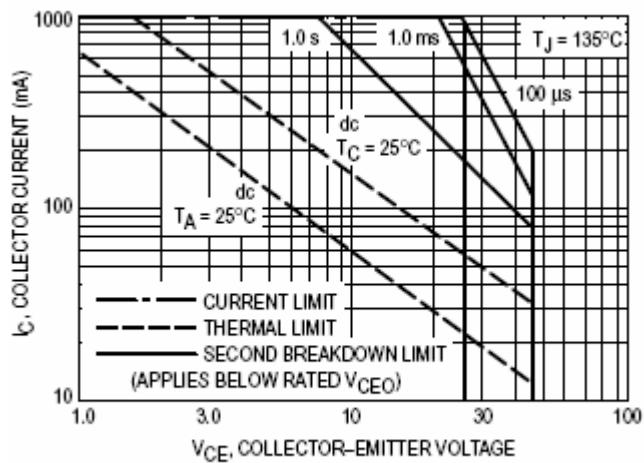


Figure 2. Active Region — Safe Operating Area

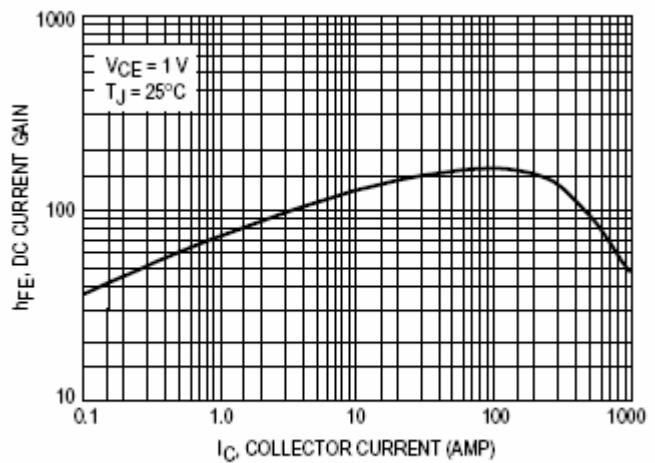


Figure 3. DC Current Gain

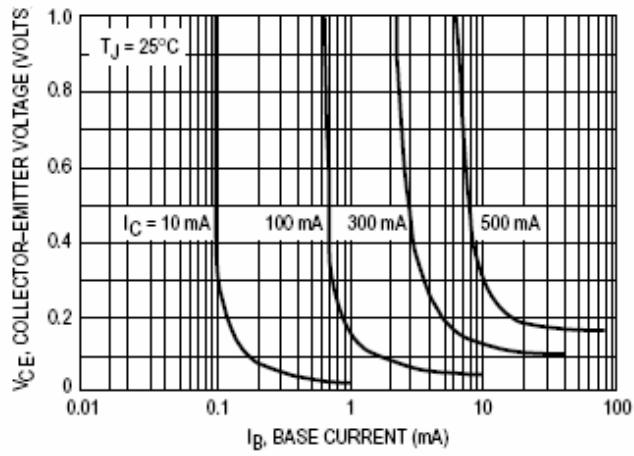


Figure 4. Saturation Region

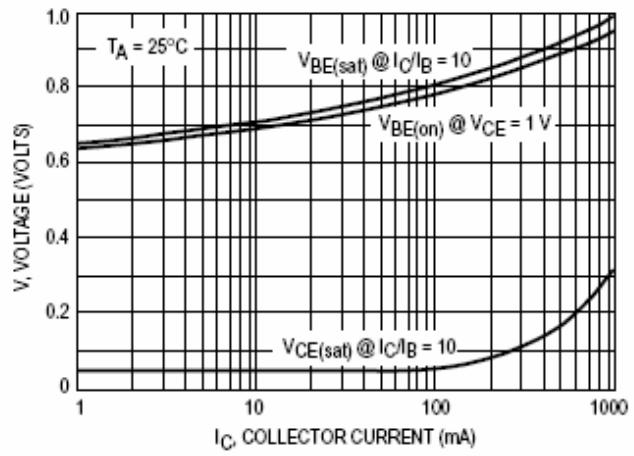


Figure 5. "On" Voltages

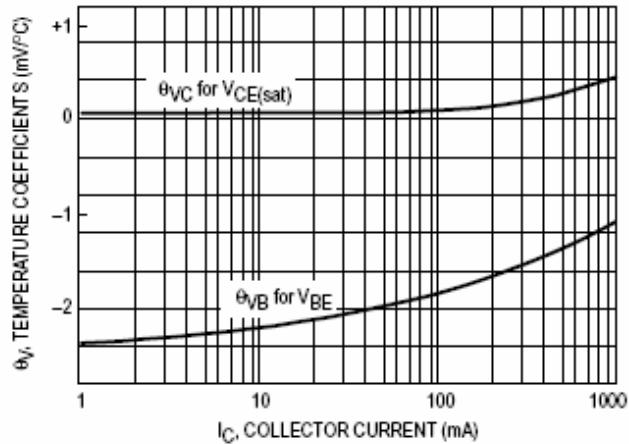


Figure 6. Temperature Coefficients

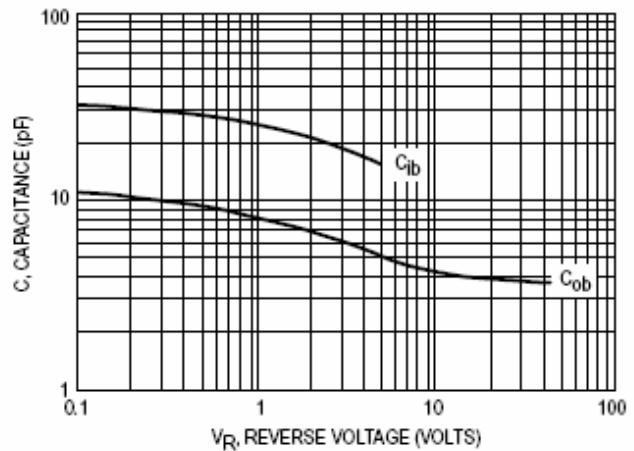


Figure 7. Capacitances