



TO-92 Plastic-Encapsulate Transistors

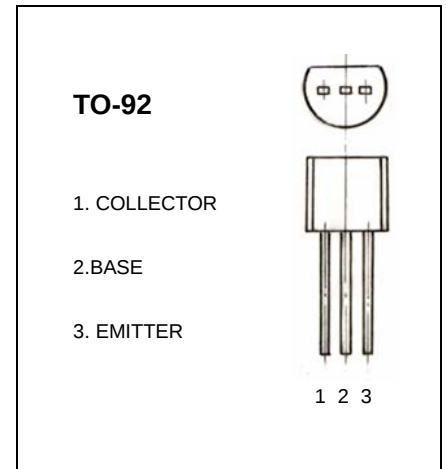
BC337/BC338 TRANSISTOR (NPN)

FEATURES

Power dissipation

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage BC337	50	V
	BC338	30	
V_{CEO}	Collector-Emitter Voltage BC337	45	V
	BC338	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 ($T_{amb}=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage BC337 BC338	V_{CBO}	$I_C = 100\mu\text{A}$, $I_E = 0$	50 30			V V
Collector-emitter breakdown voltage BC337 BC338	V_{CEO}	$I_C = 10\text{mA}$, $I_B = 0$	45 25			V V
Emitter-base breakdown voltage	V_{EBO}	$I_E = 10\mu\text{A}$, $I_C = 0$	5			V
Collector cut-off current BC337 BC338	I_{CBO}	$V_{CB} = 45\text{V}$, $I_E = 0$ $V_{CB} = 25\text{V}$, $I_E = 0$			0.1 0.1	μA
Collector cut-off current BC337 BC338	I_{CEO}	$V_{CE} = 40\text{V}$, $I_B = 0$ $V_{CE} = 20\text{V}$, $I_B = 0$			0.2 0.2	μA
Emitter cut-off current BC337/BC338	I_{EBO}	$V_{EB} = 4\text{V}$, $I_C = 0$			0.1	μA
BC337-16/BC338-16 BC337-25/BC338-25 BC337-40/BC338-40	$h_{FE(1)}$	$V_{CE} = 1\text{V}$, $I_C = 100\text{mA}$	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	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1\text{MHz}$		15		pF

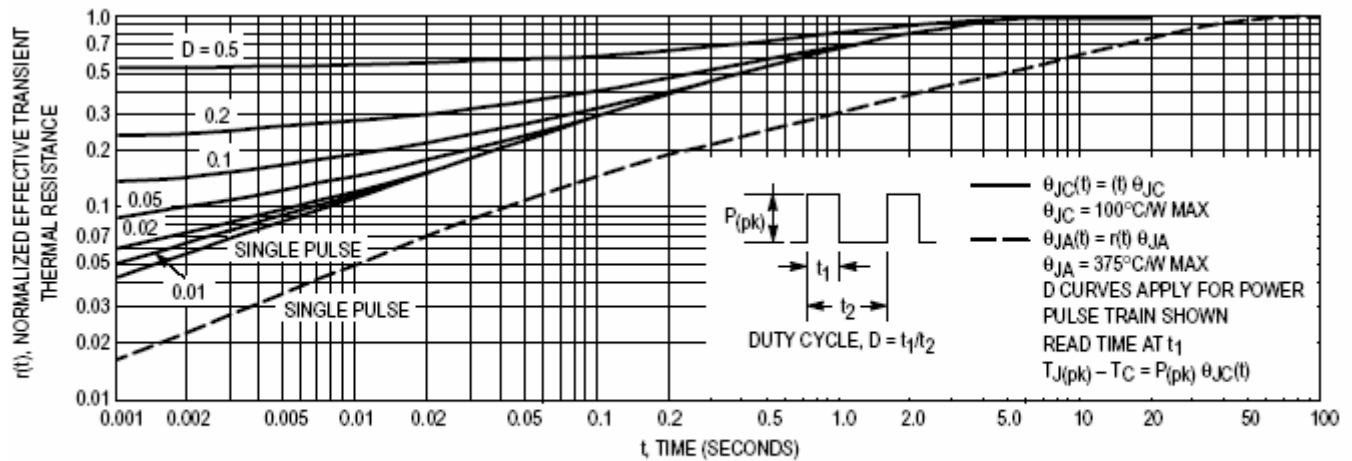


Figure 1. Thermal Response

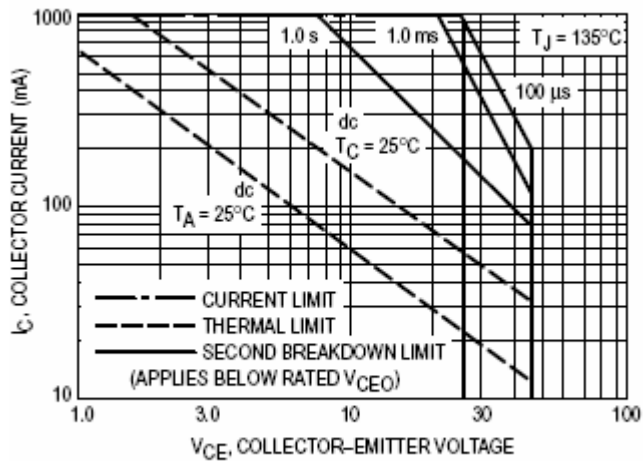


Figure 2. Active Region — Safe Operating Area

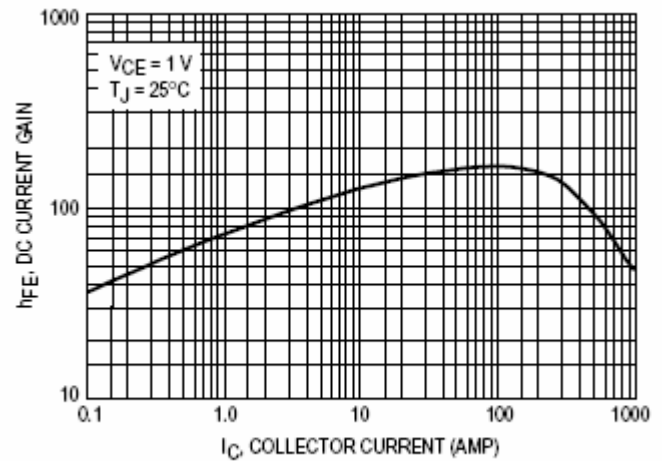


Figure 3. DC Current Gain

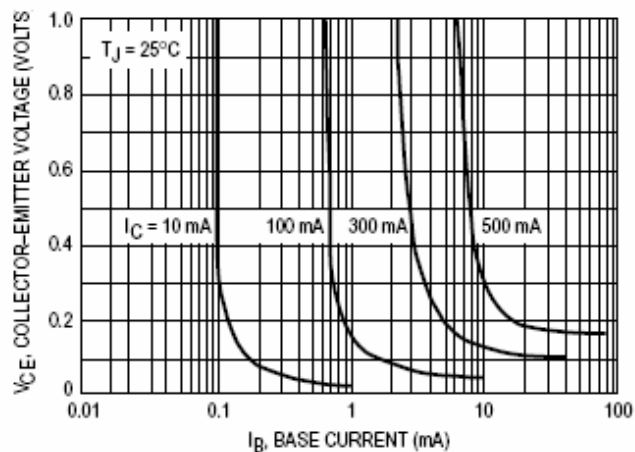


Figure 4. Saturation Region

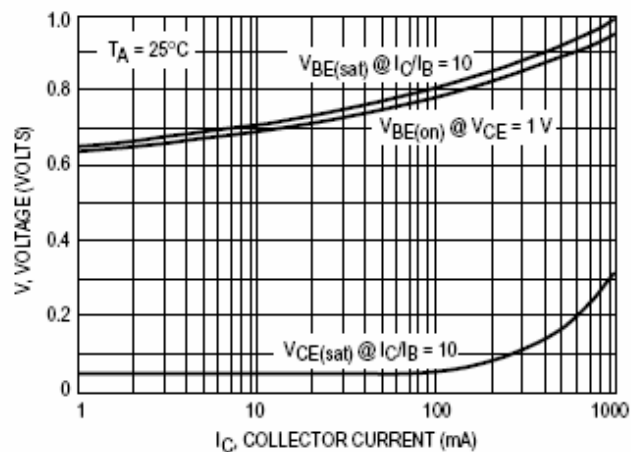


Figure 5. "On" Voltages

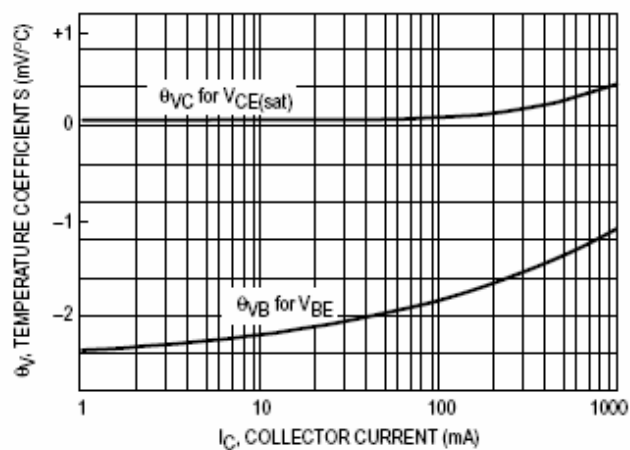


Figure 6. Temperature Coefficients

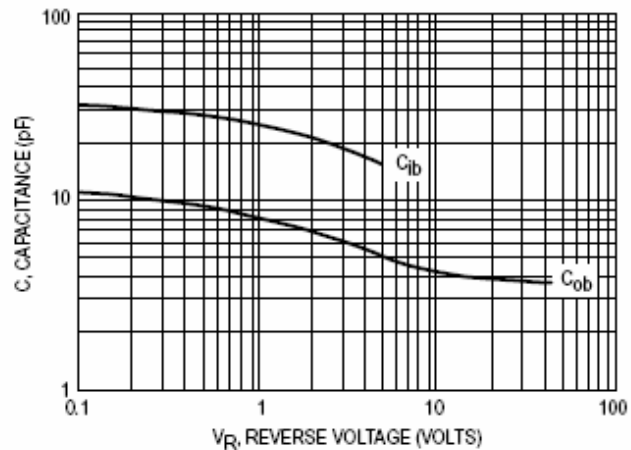


Figure 7. Capacitances