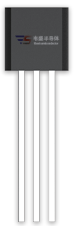
BC237 / BC238 / BC239 TRANSISTOR (NPN)

FEATURES

Amplifier dissipation NPN Silicon



TO-92

1.EMITTER
2.COLLECTOR
3.BASE

ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
BC237	TO-92	Bulk	1000pcs/Bag
BC237-TA	TO-92	Tape	2000pcs/Box
BC238	TO-92	Bulk	1000pcs/Bag
BC238-TA	TO-92	Tape	2000pcs/Box
BC239	TO-92	Bulk	1000pcs/Bag
BC239-TA	TO-92	Tape	2000pcs/Box

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{CEO}	Collector-Emitter Voltage	BC237	45	V
		BC238/239	25	
V_{EBO}	Emitter-Base Voltage	BC237	6	V
		BC238/239	5	
I_C	Collector Current -Continuous		0.1	A
P_C	Collector Power Dissipation		350	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		357	℃/W
$R_{\theta JC}$	Thermal Resistance, Junction to Case		125	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range		-55~150	℃

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA, I_E=0	BC237	50			V
			BC238/239	30			
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=2mA, I_B=0	BC237	45			V
			BC238/239	25			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	BC237	6			V
			BC238/239	5			
Collector cut-off current	I_{CBO}	V_{CE}=50V, V_{BE}=0	BC237			15	nA
		V_{CB}=30V,I_E=0	BC238/239				
DC current gain	$h_{FE(1)}$	V_{CE}=5V, I_C=10μA	BC237A		90		
			BC237B/238B		150		
			BC237C/238C/239C		270		
	$h_{FE(2)}$	V_{CE}=5V, I_C=2mA	BC237	120		800	
			BC239	120		800	
			BC237A	120		220	
			BC237B/238B	200		460	
			BC237C/238C/239C	380		800	
	$h_{FE(3)}$	V_{CE}=5V, I_C=100mA	BC237A		120		
			BC237B/238B		180		
			BC237C/238C/239C		300		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=0.5mA	BC237/238/239			0.2	V
		I_C=100mA, I_B=5mA	BC237/239			0.6	
			BC238			0.8	
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA,I_B=0.5mA				0.83	V
		I_C=100mA,I_B=5mA				1.05	
Base-emitter voltage	V_{BE}	V_{CE}=5V, I_C=0.1mA			0.5		V
		V_{CE}=5V, I_C=2mA		0.55		0.7	
		V_{CE}=5V, I_C=100mA			0.83		
Transition frequency	f_T	V_{CE}=3V,I_C=0.5mA,f=100MHz	BC237		100		MHz
			BC238		120		
			BC239		140		
		V_{CE}=5V,I_C=10mA,f=100MHz	BC237	150	200		
			BC238	150	240		
			BC239	150	280		
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz				4.5	pF
Emitter-base capacitance	C_{ib}	V_{EB}=0.5V, I_C=0, f=1MHz			8		Pf
Noise figure	NF	V_{CE}=5V, I_c=0.2mA,					dB
		f=1kHZ, Rs=2KΩ	BC239		2	4	
		V_{CE}=5V, I_c=0.2mA,					
		f=1kHZ, Rs=2KΩ, Δf=200Hz	BC237		2	10	
			BC238		2	10	
			BC239		2	4	