

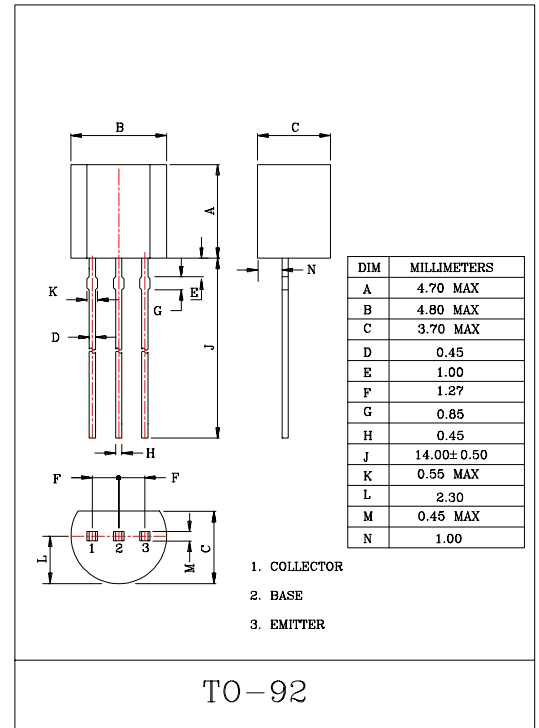
GENERAL PURPOSE APPLICATION.  
LOW NOISE AMPLIFIER APPLICATION.

#### FEATURES

- High Voltage : BC237  $V_{CE0}=45V$ .
- Low Noise : BC239  $NF=0.2dB(Typ.)$ ,  $3dB(Max.)$   
( $V_{CE}=6V$ ,  $I_C=0.1mA$ ,  $f=1kHz$ ).
- For Complementary With PNP type BC307/308/309.

#### MAXIMUM RATINGS ( $T_a=25^{\circ}C$ )

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	BC237	$V_{CBO}$	50	V
	BC238		30	
	BC239		30	
Collector-Emitter Voltage	BC237	$V_{CEO}$	45	V
	BC238		20	
	BC239		20	
Emitter-Base Voltage	BC237	$V_{EBO}$	6	V
	BC238		5	
	BC239		5	
Collector Current	BC237	$I_C$	100	mA
	BC238		100	
	BC239		50	
Emitter Current	BC237	$I_E$	-100	mA
	BC238		-100	
	BC239		-50	
Collector Power Dissipation		$P_C$	625	mW
Junction Temperature		$T_j$	150	$^{\circ}C$
Storage Temperature Range		$T_{stg}$	-55~150	$^{\circ}C$



# BC237/8/9

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB}=50V, I_E=0$	-	-	15	nA
DC Current Gain (Note)	BC237	$h_{FE}$	$V_{CE}=5V, I_C=2mA$	120	-	460	
	BC238			120	-	800	
	BC239			180	-	800	
Collector-Emitter Saturation Voltage	BC237	$V_{CE(sat)}$	$I_C=100mA, I_B=5mA$	-	-	0.6	V
	BC238			-	-	0.6	
	BC239		$I_C=10mA, I_B=0.5mA$	-	-	0.2	
Base-Emitter Saturation Voltage	BC237	$V_{BE(sat)}$	$I_C=100mA, I_B=5mA$	-	-	1.05	V
	BC238			-	-	1.05	
	BC239		$I_C=10mA, I_B=0.5mA$	-	-	0.83	
Base-Emitter Voltage		$V_{BE(ON)}$	$V_{CE}=5V, I_C=2mA$	0.55	-	0.7	V
Transition Frequency		$f_T$	$V_{CE}=5V, I_C=10mA,$ $f=100MHz$	150	250	-	MHz
Collector Output Capacitance		$C_{ob}$	$V_{CB}=10V, f=1MHz$	-	-	4.5	pF
Noise Figure	BC237	NF	$V_{CE}=6V, I_C=0.1mA$ $R_g=10k\Omega, f=1kHz$	-	1.0	10	dB
	BC238			-	1.0	10	
	BC239			-	0.2	3.0	

NOTE : According to the Value of  $h_{FE}$  the BC237, BC238, BC239 are classified as follows.

CLASSIFICATION		A	B	C
$h_{FE}$	BC237	120~220	180~460	-
	BC238	120~220	180~460	380~800
	BC239	-	180~460	380~800