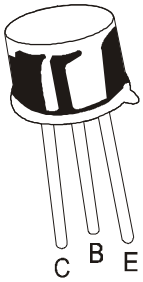
Continental Device India Limited

An ISO/TS 16949 and ISO 9001 Certified Company

NPN SILICON PLANAR TRANSISTORS

2N4237, 2N4238
2N4239



TO-39
Metal Can Package

General Purpose Transistor

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	2N4237	2N4238	2N4239	UNIT
Collector Emitter Voltage	V_{CEO}	40	60	80	V
Collector Base Voltage	V_{CBO}	50	80	100	V
Emitter Base Voltage	V_{EBO}	6.0			V
Base Current	I_B	500			mA
Collector Current Continuous	I_C	1.0			A
Power Dissipation @ T_a=25ºC	P_D	1.0			W
Derate Above 25ºC		5.3			mW/ ºC
Power Dissipation @ T_c=25ºC	P_D	6.0			W
Derate Above 25ºC		34			mW/ ºC
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200			ºC

THERMAL CHARACTERISTICS

Junction to Case	$R_{th\ (j-c)}$	29	ºC/W

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	2N4237	2N4238	2N4239	UNIT
Collector Emitter Voltage	V_{CEO}	I_C=1mA, I_B=0	40	60	80	V
Collector Cut Off Current	I_{CEX}	V_{CE}=50V, V_{EB}=1.5V	0.1			mA
		V_{CE}=80V, V_{EB}=1.5V		0.1		mA
		V_{CE}=100V, V_{EB}=1.5V			0.1	mA
		T_C=150ºC				
		V_{CE}=30V, V_{EB}=1.5V	1.0			mA
		V_{CE}=50V, V_{EB}=1.5V		1.0		mA
		V_{CE}=70V, V_{EB}=1.5V			1.0	mA

			MIN	TYP	MAX	
Collector Cut Off Current	I_{CBO}	V_{CB}=Rated V_{CBO}, I_E=0			0.1	mA
Collector Cut Off Current	I_{CEO}	V_{CE}=Rated V_{CEO}, I_B=0			0.07	mA
Emitter Cut Off Current	I_{EBO}	V_{EB}=6V, I_C=0			0.5	mA
DC Current Gain	*h_{FE}	I_C=50mA, V_{CE}=1V	30			
		I_C=250mA, V_{CE}=1V	30		150	
		I_C=500mA, V_{CE}=1V	30			
		I_C=1A, V_{CE}=1V	15			

***Pulse Test: Pulse Width ≤ 300ms, Duty Cycle ≤ 2%**

NPN SILICON PLANAR TRANSISTORS

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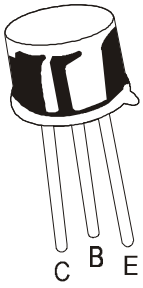


TO-39
Metal Can Package

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

SMALL SIGNAL CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Saturation Voltage	$*V_{CE\ (sat)}$	I_C=500mA, I_B=50mA I_C=1A, I_B=0.1A			0.3 0.6	V V
Base Emitter Saturation Voltage	$*V_{BE\ (sat)}$	I_C=1A, I_B=0.1A			1.5	V
Base Emitter On Voltage	$*V_{BE\ (on)}$	I_C=250mA, V_{CE}=1V			1.0	V

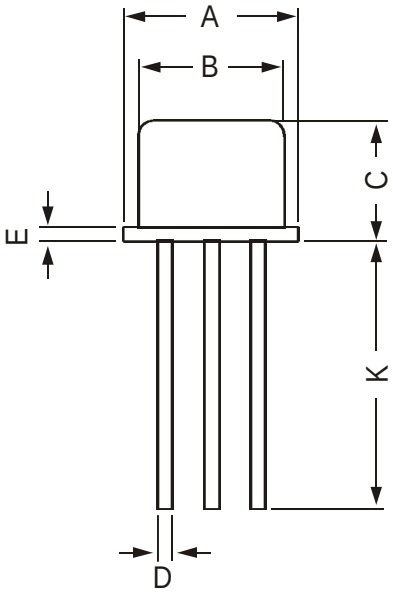
SMALL SIGNAL CHARACTERISTICS

Output Capacitance	C_{obo}	V_{CB}=10V, I_E=0, f=0.1MHz			100	pF
Small Signal Current Gain	h_{fe}	I_C=100mA, V_{CE}=10V, f=1KHz	30			
Current Gain High Frequency	$\|h_{fe}\|$	I_C=100mA, V_{CE}=10V, f=1MHz	1.0			

***Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 2%**

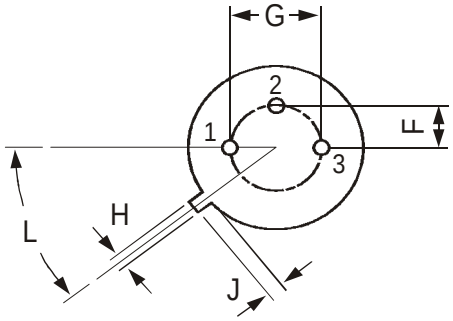
2N4237_4239Rev121004E

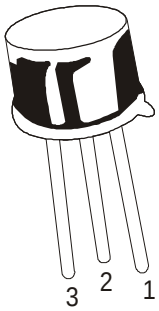
TO-39 Metal Can Package



All dimensions are in mm

DIM	MIN	MAX
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	—	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	—
L	42 DEG	48 DEG





PIN CONFIGURATION
1. EMITTER
2. BASE
3. COLLECTOR

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-39	500 pcs/polybag	540 gm/500 pcs	3" x 7.5" x 7.5"	20K	17" x 15" x 13.5"	32K	40 kgs

Disclaimer

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