

2N4237 • 2N4238 • 2N4239

5 WATT NPN POWER

DIFFUSED SILICON PLANAR* EPITAXIAL TRANSISTORS

- $V_{CE(sat)} \dots 0.6 \text{ V @ } I_C = 1.0 \text{ A}$
- COMPLEMENTS ... 2N4234 THROUGH 2N4236

ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures

Storage Temperature

-55°C to +200°C

Operating Junction Temperature

-55°C to +200°C

Lead Temperature (2 seconds)

230°C

Maximum Power Dissipation

Total Dissipation at 25°C Case Temperature (Note 3)

5.0 W

at 25°C Ambient Temperature (Note 3)

0.8 W

Maximum Voltages and Current

V_{CBO} Collector to Base Voltage

2N4237

50 V

2N4238

80 V

2N4239

100 V

V_{EBO} Emitter to Base Voltage

6.0 V

6.0 V

6.0 V

V_{CEO} Collector to Emitter Voltage

40 V

60 V

80 V

I_C Collector Current (Note 2)

1.0 A

1.0 A

1.0 A

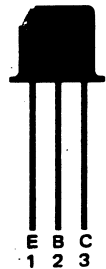
I_B Base Current (Note 2)

0.5 A

0.5 A

0.5 A

See TO5-1 Package Outline



ELECTRICAL CHARACTERISTICS (25°C Case Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN.	MAX.	UNITS	TEST CONDITIONS
I_{CEX}	Collector Cutoff Current		0.1	mA	$V_{CE} = 50 \text{ V}, V_{EB} = 1.5 \text{ V}$
			0.1	mA	$V_{CE} = 80 \text{ V}, V_{EB} = 1.5 \text{ V}$
			0.1	mA	$V_{CE} = 100 \text{ V}, V_{EB} = 1.5 \text{ V}$
I_{CEX}	Collector Cutoff Current		1.0	mA	$V_{CE} = 30 \text{ V}, V_{EB} = 1.5 \text{ V}, T_C = 150^\circ \text{C}$
			1.0	mA	$V_{CE} = 50 \text{ V}, V_{EB} = 1.5 \text{ V}, T_C = 150^\circ \text{C}$
			1.0	mA	$V_{CE} = 70 \text{ V}, V_{EB} = 1.5 \text{ V}, T_C = 150^\circ \text{C}$
I_{CBO}	Collector Cutoff Current		0.1	mA	$V_{CB} = 50 \text{ V}, I_E = 0$
			0.1	mA	$V_{CB} = 80 \text{ V}, I_E = 0$
			0.1	mA	$V_{CB} = 100 \text{ V}, I_E = 0$
I_{EBO}	Emitter Cutoff Current		0.5	mA	$V_{EB} = 6.0 \text{ V}, I_C = 0$
$V_{CEO(sus)}$	Collector to Emitter Sustaining Voltage (Note 4)	40		V	$I_C = 100 \text{ mA}, I_B = 0$
		60		V	$I_C = 100 \text{ mA}, I_B = 0$
		80		V	$I_C = 100 \text{ mA}, I_B = 0$
I_{CEO}	Collector Cutoff Current		1.0	mA	$V_{CE} = 30 \text{ V}, I_B = 0$
			1.0	mA	$V_{CE} = 40 \text{ V}, I_B = 0$
			1.0	mA	$V_{CE} = 60 \text{ V}, I_B = 0$
h_{FE}	DC Pulse Current Gain (Note 4)	30	150		$I_C = 250 \text{ mA}, V_{CE} = 1.0 \text{ V}$
		30			$I_C = 500 \text{ mA}, V_{CE} = 4.0 \text{ V}$
		15			$I_C = 1.0 \text{ A}, V_{CE} = 1.0 \text{ V}$
$V_{CE(sat)}$	Pulsed Collector Saturation Voltage (Note 4)		0.6	V	$I_C = 1.0 \text{ A}, I_B = 100 \text{ mA}$
			0.3	V	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$
$V_{BE(sat)}$	Pulsed Base Saturation Voltage (Note 4)		1.5	V	$I_C = 1.0 \text{ A}, I_B = 100 \text{ mA}$
$V_{BE(ON)}$	Pulsed Base to Emitter "On" Voltage (Note 4)		1.0	V	$I_C = 250 \text{ mA}, V_{CE} = 1.0 \text{ V}$
$ h_{fe} $	Magnitude of Common Emitter Small Signal Current Gain	1.0			$I_C = 100 \text{ mA}, V_{CE} = 10 \text{ V}, f = 1.0 \text{ MHz}$
h_{fe}	Small Signal Current Gain	30			$I_C = 100 \text{ mA}, V_{CE} = 10 \text{ V}, f = 1.0 \text{ kHz}$
C_{ob}	Common Base Output Capacitance		100	pF	$I_C = 0, V_{CB} = 10 \text{ V}, f = 0.1 \text{ MHz}$