

2N2639 through 2N2644

DUAL NPN LOW LEVEL LOW NOISE DIFFERENTIAL AMPLIFIERS

DIFFUSED SILICON PLANAR* TRANSISTORS

- V_{CEO} ... 45 V (MIN)
- NF ... 4.0 dB (MAX) WIDE BAND
- GUARANTEED BETA RATIO
- GUARANTEED V_{BE} MATCHING AND TRACKING

ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures

Storage Temperature	-65°C to +200°C
Lead Temperature (10 seconds)	300°C

Maximum Power Dissipation:

	One Side	Both Sides
Total Dissipation at or below 25°C Ambient Temperature	0.3 W	0.6 W
Linear Derating Factor at or below 25°C Case Temperature	2.0 mW/°C	4.0 mW/°C
Linear Derating Factor	0.6 W	1.2 W
	4.0 mW/°C	8.0 mW/°C

Maximum Voltages and Current

V _{EBO} Emitter to Base Voltage	5.0 V
V _{CBO} Collector to Base Voltage	45 V
V _{CEO} Collector to Emitter Voltage	45 V
I _C Collector Current	30 mA

See TO5-9 Package Outline



MATCHING CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	2N2639/42		2N2640/43		UNITS	TEST CONDITIONS
		MIN.	MAX.	MIN.	MAX.		
h_{FE1}	DC Current Gain Ratio (Note 3)	0.9	1.0	0.8	1.0		V _{CE} = 5.0 V, I _C = 10 μA
h_{FE2}							
$ V_{BE1} - V_{BE2} $	Base to Emitter Voltage Differential		5.0		10	mV	V _{CE} = 5.0 V, I _C = 10 μA
$ \Delta(V_{BE1} - V_{BE2}) $	Base to Emitter Voltage Differential Temperature Coefficient		10		20	μV/°C	V _{CE} = 5.0 V, I _C = 10 μA @ T _A = -55°C to +25°C and T _A = +25°C to +125°C

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

SYMBOL	CHARACTERISTIC	2N2639/40/41		2N2642/43/44		UNITS	TEST CONDITIONS
		MIN.	MAX.	MIN.	MAX.		
I _{CBO}	Collector Cutoff Current		10		10	nA	V _{CB} = 45 V, I _E = 0
I _{CEO}	Collector Cutoff Current		10		10	μA	V _{CB} = 45 V, I _E = 0, T _A = 150°C
I _{EBO}	Emitter Cutoff Current		10		10	nA	V _{CE} = 5.0 V, I _B = 0
BV _{CEO}	Collector to Emitter Breakdown Voltage (Note 2)	45		45		V	V _{EB} = 5.0 V, I _C = 0
h _{FE}	DC Current Gain	50	300	100	300		V _{CE} = 5.0 V, I _C = 10 μA
		55		110			V _{CE} = 5.0 V, I _C = 100 μA
		65		130			V _{CE} = 5.0 V, I _C = 1.0 mA
		10		20			V _{CE} = 5.0 V, I _C = 10 μA, T _A = -55°C
V _{BE}	Base to Emitter Voltage (Note 2)	0.6	1.0	0.6	1.0	V	I _C = 10 mA, I _B = 0.5 mA

