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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

See TO5-9 Package Outline

CBEEBC
123456

ABSOLUTE MAXIMUM RATINGS (Note 1)

	One Side	Both Sides
Maximum Temperatures		
Storage Temperature		−65°C to +200°C
Lead Temperature (10 seconds)		300°C
Maximum Power Dissipation		
Total Dissipation at or below 25°C Ambient Temperature	0.3 W	0.6 W
Linear Derating Factor	2.0 mW/°C	4.0 mW/°C
at or below 25°C Case Temperature	0.6 W	1.2 W
Linear Derating Factor	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

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

SYMBOL	CHARACTERISTIC	2N2639/42 MIN.	2N2639/42 MAX.	2N2640/43 MIN.	2N2640/43 MAX.	UNITS	TEST CONDITIONS
$\frac{h_{FE1}}{h_{FE2}}$	DC Current Gain Ratio (Note 3)	0.9	1.0	0.8	1.0		V_{CE} = 5.0 V, I_C = 10 μA
$\lvert V_{BE1}-V_{BE2}\rvert$	Base to Emitter Voltage Differential		5.0		10	mV	V_{CE} = 5.0 V, I_C = 10 μA
$\lvert\Delta(V_{BE1}-V_{BE2})\rvert$	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 MIN.	2N2639/40/41 MAX.	2N2642/43/44 MIN.	2N2642/43/44 MAX.	UNITS	TEST CONDITIONS
I_{CBO}	Collector Cutoff Current		10		10	nA	V_{CB} = 45 V, I_E = 0
			10		10	μA	V_{CB} = 45 V, I_E = 0, T_A = 150°C
I_{CEO}	Collector Cutoff Current		10		10	nA	V_{CE} = 5.0 V, I_B = 0
I_{EBO}	Emitter Cutoff Current		10		10	nA	V_{EB} = 5.0 V, I_C = 0
BV_{CEO}	Collector to Emitter Breakdown Voltage (Note 2)	45		45		V	I_C = 10 mA, I_B = 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