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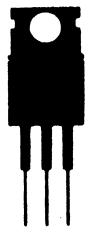
2N6121 • 2N6122 • 2N6123

40 WATT NPN SILICON POWER

- P_D . . . 40 W
- $V_{CE(sat)}$ . . . 0.6 V (MAX) @ I_C = 1.5 A
- h_{FE} . . . 25-100 @ I_C = 1.5 A (2N6121, 2N6122), 20-80 @ I_C = 1.5 A (2N6123)
- PNP COMPLEMENTS . . . 2N6124, 2N6125, 2N6126



TO220

ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures				
Storage Temperature				−65°C to +150°C
Operating Junction Temperature				150°C
Lead Temperature (10 seconds)				235°C
Maximum Power Dissipation				
Total Power Dissipation at 25°C Case Temperature (Note 3)				40 W
Linear Derating Factor				320 mW/°C
Maximum Voltages and Currents		**2N6121**	**2N6122**	**2N6123**
V_{CEO}	Collector to Emitter Voltage	45 V	60 V	80 V
V_{CBO}	Collector to Base Voltage	45 V	60 V	80 V
V_{EBO}	Emitter to Base Voltage	5.0 V	5.0 V	5.0 V
I_C	Collector Current (Continuous)	4.0 A	4.0 A	4.0 A
I_B	Base Current	1.0 A	1.0 A	1.0 A

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

SYMBOL	CHARACTERISTIC		MIN.	MAX.	UNITS	TEST CONDITIONS
$V_{CEO(sus)}$	Collector Sustaining Voltage (Note 2)	2N6121	45		V	I_C = 100 mA, I_B = 0
		2N6122	60		V	I_C = 100 mA, I_B = 0
		2N6123	80		V	I_C = 100 mA, I_B = 0
h_{FE}	DC Pulse Current Gain	2N6121	25	100		I_C = 1.5 A, V_{CE} = 2.0 V
		2N6122	25	100		I_C = 1.5 A, V_{CE} = 2.0 V
		2N6123	20	80		I_C = 1.5 A, V_{CE} = 2.0 V
		2N6121	10			I_C = 4.0 A, V_{CE} = 2.0 V
		2N6122	10			I_C = 4.0 A, V_{CE} = 2.0 V
		2N6123	7.0			I_C = 4.0 A, V_{CE} = 2.0 V
$V_{CE(sat)}$	Collector Saturation Voltage (Note 2)			0.6	V	I_C = 1.5 A, I_B = 0.15 A
				1.4	V	I_C = 4.0 A, I_B = 1.0 A
$V_{BE(ON)}$	Base to Emitter "On" Voltage (Note 2)			1.2	V	I_C = 1.5 A, V_{CE} = 2.0 V
I_{CEO}	Collector Cutoff Current			1.0	mA	V_{CE} = V_{CEO}, I_B = 0
I_{CEX}	Collector Cutoff Current			0.1	mA	V_{CE} = V_{CEO}, V_{EB} = 1.5 V
I_{CEX}	Collector Cutoff Current			2.0	mA	V_{CE} = V_{CEO}, V_{EB} = 1.5 V, T_C = 125°C
I_{CBO}	Collector Cutoff Current			0.1	mA	V_{CB} = V_{CEO}, I_E = 0
I_{EBO}	Emitter Cutoff Current			1.0	mA	V_{EB} = 5.0 V, I_C = 0
$\|h_{fe}\|$	Magnitude of Common Emitter Small Signal Current Gain		2.5			I_C = 1.0 A, V_{CE} = 4.0 V, f = 1.0 MHz
h_{fe}	Small Signal Current Gain		25			I_C = 0.1 A, V_{CE} = 2.0 V, f = 1.0 kHz

Quality Semi-Conductors