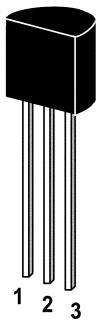
FUKUCOM COMPANY LTD.
福 靈 有 限 公 司
FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.
TEL: 852-2790 0314 FAX: 852-2790 0206

ST 2N4402 / 2N4403

PNP Epitaxial Silicon Transistor
General purpose transistor

Collector Emitter Voltage: V_{CEO} = 40 V
Collector Dissipation: P_C (max) = 625 mW

On special request, these transistors can be manufactured in different pin configurations.



1. Emitter 2. Base 3. Collector

TO-92 Plastic Package
Weight approx. 0.19g

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	40	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	600	mA
Power Dissipation	P_{tot}	625	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	-55 to +150	°C

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Dated : 02/12/2005

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Characteristics at T_{amb}=25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at $-V_{CE}$=1V, $-I_C$=0.1mA	ST 2N4403	h_{FE}	30	-	-
at $-V_{CE}$=1V, $-I_C$=1mA	ST 2N4402	h_{FE}	30	-	-
	ST 2N4403	h_{FE}	60	-	-
at $-V_{CE}$=1V, $-I_C$=10mA	ST 2N4402	h_{FE}	50	-	-
	ST 2N4403	h_{FE}	100	-	-
at $-V_{CE}$=1V, $-I_C$=150mA	ST 2N4402	h_{FE}	50	150	-
	ST 2N4403	h_{FE}	100	300	-
at $-V_{CE}$=2V, $-I_C$=500mA	ST 2N4403	h_{FE}	20	-	-
	ST 2N4403	h_{FE}	20	-	-
Collector Cutoff Current at $-V_{CB}$=35V		$-I_{CBO}$	-	100	nA
Emitter Cutoff Current at $-V_{EB}$=5V		$-I_{EBO}$	-	100	nA
Collector Emitter Breakdown Voltage at $-I_C$=1mA		$-V_{(BR)CEO}$	40	-	V
Collector Base Breakdown Voltage at $-I_C$=100µA		$-V_{(BR)CBO}$	40	-	V
Emitter Base Breakdown Voltage at $-I_E$=100µA		$-V_{(BR)EBO}$	5	-	V
Collector Saturation Voltage at $-I_C$=150mA, $-I_B$=15mA		$-V_{CEsat}$	-	0.4	V
Base Saturation Voltage at $-I_C$=150mA, $-I_B$=15mA		$-V_{BEsat}$	0.75	0.95	V
Gain Bandwidth Product at $-V_{CE}$=10V, $-I_C$=20mA, f=100MHz					
	ST 2N4402	f_T	150	-	MHz
	ST 2N4403	f_T	200	-	MHz
Collector Base Capacitance at $-V_{CB}$=10V, f=140MHz		C_{CBO}	-	8.5	pF
Turn On Time at $-V_{CC}$=30V, $-V_{BE}$=2V, $-I_C$=150mA, $-I_{B1}$=15mA		t_{on}	-	35	ns
Turn Off Time at $-V_{CC}$=30V, $-I_C$=150mA, $-I_{B1}$=$-I_{B2}$=15mA		t_{off}	-	255	ns

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ST 2N4402 / 2N4403

TRANSIENT CHARACTERISTICS

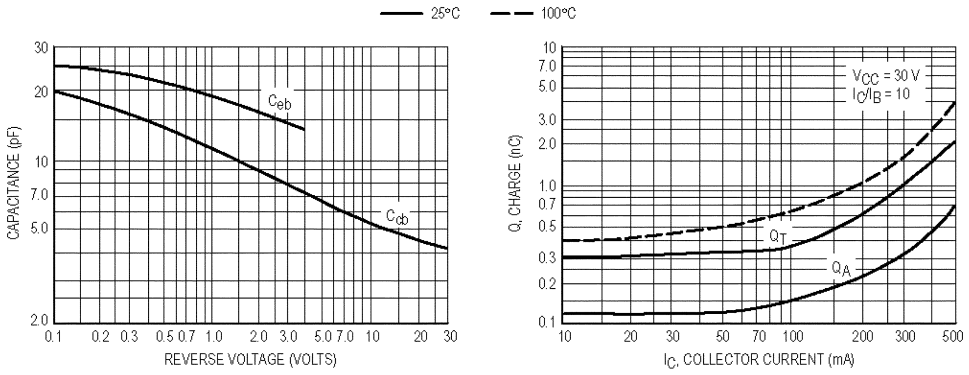

Figure 3. Capacitances

Figure 4. Charge Data

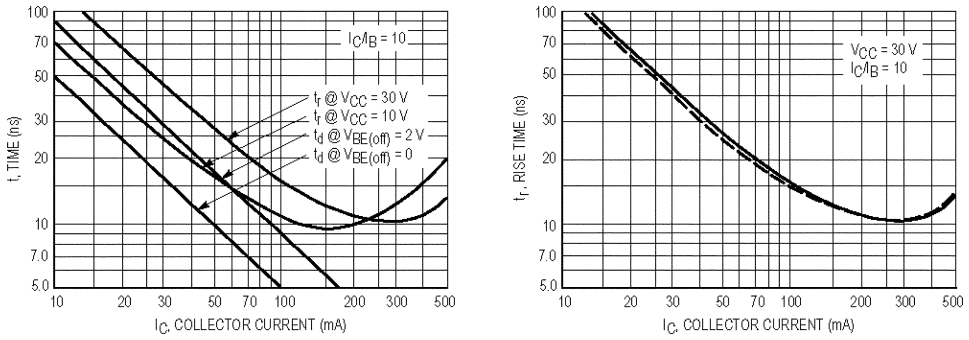

Figure 5. Turn–On Time

Figure 6. Rise Time

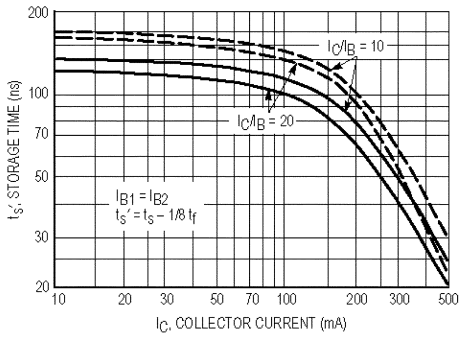

Figure 7. Storage Time

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SMALL–SIGNAL CHARACTERISTICS

NOISE FIGURE

V_{CE} = –10 Vdc, T_A = 25°C
Bandwidth = 1.0 Hz

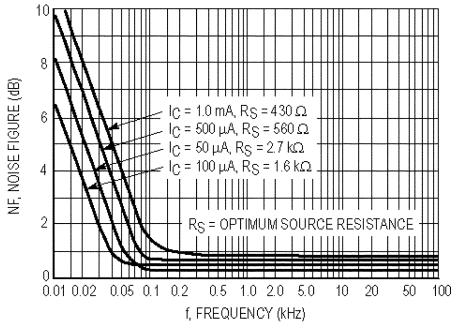

Figure 8. Frequency Effects

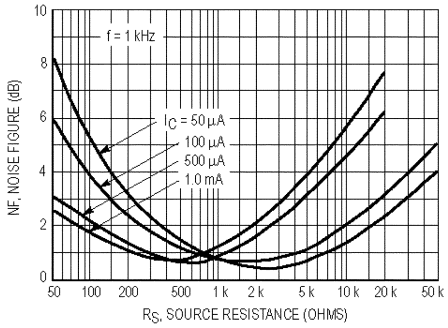

Figure 9. Source Resistance Effects

h PARAMETERS

V_{CE} = –10 Vdc, f = 1.0 kHz, T_A = 25°C

This group of graphs illustrates the relationship between h_{fe} and other "h" parameters for this series of transistors. To obtain these curves, a high–gain and a low–gain unit were selected from both the 2N4402 and 2N4403 lines, and the same units were used to develop the correspondingly–numbered curves on each graph.

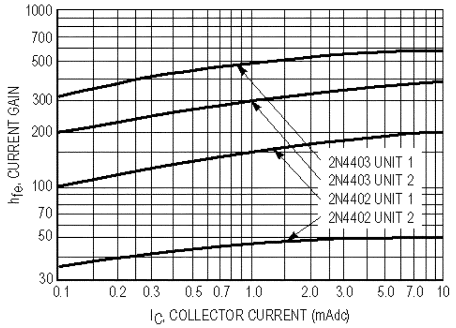

Figure 10. Current Gain

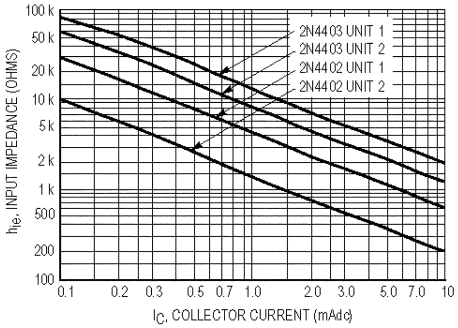

Figure 11. Input Impedance

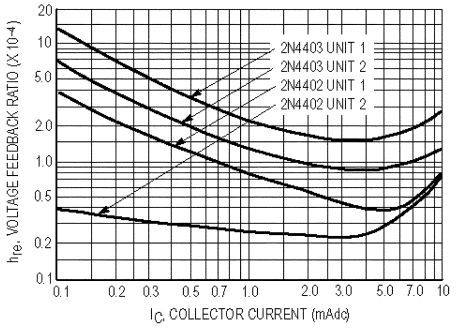

Figure 12. Voltage Feedback Ratio

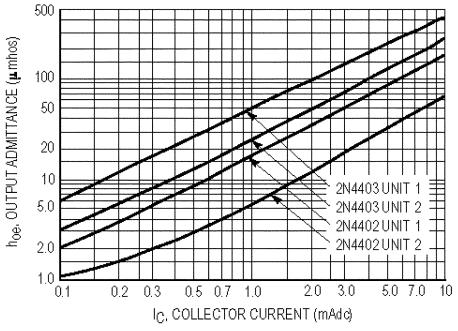

Figure 13. Output Admittance

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STATIC CHARACTERISTICS

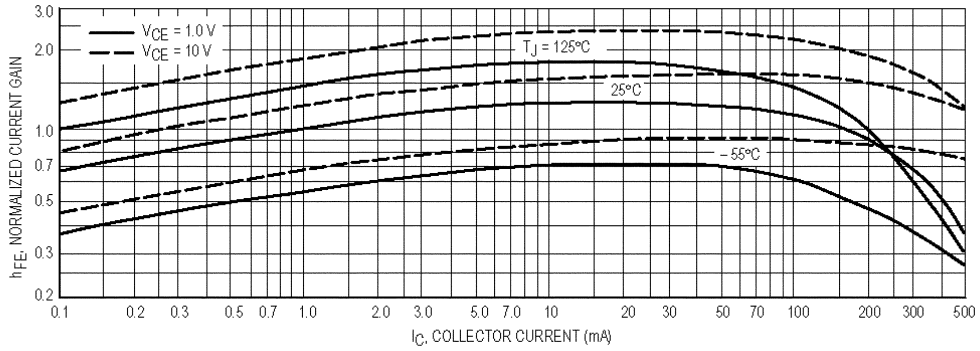

Figure 14. DC Current Gain

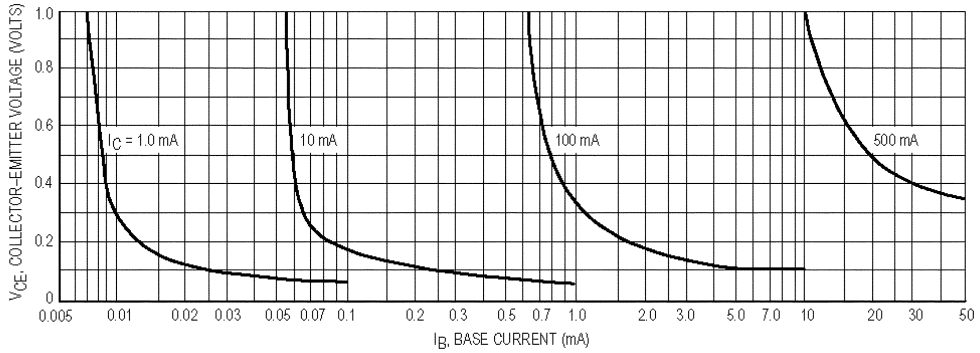

Figure 15. Collector Saturation Region

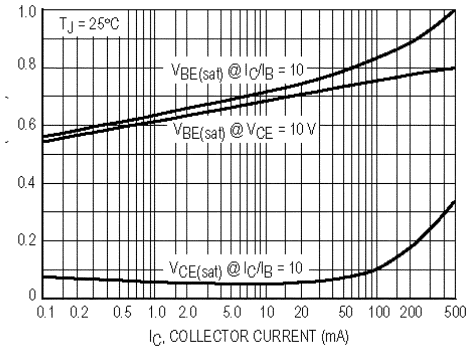

Figure 16. "On" Voltages

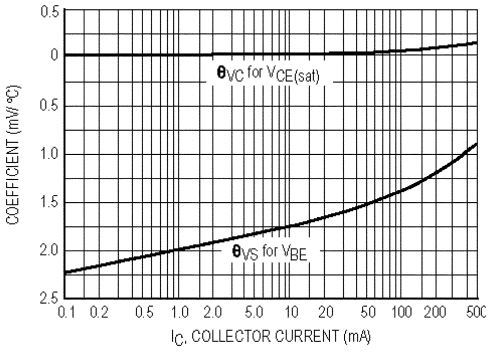

Figure 17. Temperature Coefficients

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