

SEMICONDUCTOR TECHNICAL DATA

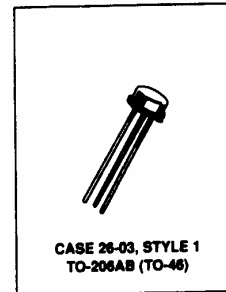
2N2605

PNP Silicon Small-Signal Transistor

... designed for general-purpose amplifier applications.

CRYSTALONCS
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MAXIMUM RATINGS			
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	60	Vdc
Collector-Base Voltage	V_{CBO}	70	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current — Continuous	I_C	30	mAdc
Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_T	400 2.28	mW mW/ $^\circ\text{C}$
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-65 to 200	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)				
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage ⁽¹⁾ ($I_C = 10\text{ mAdc}, I_B = 0$)	$V_{(BR)CEO}$	60	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 10\text{ }\mu\text{Adc}, I_E = 0$)	$V_{(BR)CBO}$	70	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10\text{ }\mu\text{Adc}, I_C = 0$)	$V_{(BR)EBO}$	6.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 50\text{ Vdc}, I_E = 0$) ($V_{CB} = 50\text{ Vdc}, I_E = 0, T_A = 150^\circ\text{C}$)	I_{CBO}	— —	0.01 5.0	μAdc
Collector Cutoff Current ($V_{CE} = 50\text{ Vdc}, I_E = 0$)	I_{CES}	—	0.01	μAdc
Emitter Cutoff Current ($V_{EB} = 5.0\text{ Vdc}, I_C = 0$)	I_{EBO}	—	0.002	μAdc

⁽¹⁾ Pulsed. Pulse Width 250 to 350 μs . Duty Cycle 1:1 to 2:3.

(continued)

2N2605JAN SERIES

ELECTRICAL CHARACTERISTICS — continued (T _A = 25°C unless otherwise noted.)				
Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain ⁽¹⁾ (I _C = 10 μAdc, V _{CE} = 5.0 Vdc) (I _C = 500 μAdc, V _{CE} = 5.0 Vdc) (I _C = 10 mAdc, V _{CE} = 5.0 Vdc) (I _C = 10 μAdc, V _{CE} = 5.0 Vdc, T _A = -65°C)	h _{FE}	100 150 100 30	300 450 400 —	—
Collector-Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 0.5 mAdc)	V _{CE(sat)}	—	0.3	Vdc
Base-Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 0.5 mAdc)	V _{BE(sat)}	0.7	0.9	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Collector-Base Capacitance (V _{CB} = 5.0 Vdc, I _E = 0, f = 0.1 to 1.0 MHz)	C _{ob0}	—	6.0	pF
Small-Signal Current Gain (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc, f = 1.0 kHz)	h _{fe}	150	450	—
Small-Signal Current Transfer Ratio, Magnitude (I _C = 0.5 mAdc, V _{CE} = 5.0 Vdc, f = 30 MHz)	h _{fe}	1.0	8.0	—
Input Impedance (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc, f = 1.0 kHz)	h _{ie}	2.0	20	kohms
Voltage Feedback Ratio (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc, f = 1.0 kHz)	h _{re}	—	10	X 10 ⁻⁴
Output Admittance (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc, f = 1.0 kHz)	h _{oe}	—	60	μmhos
Noise Figure (R _G = 10 kohm) (I _C = 10 μAdc, V _{CE} = 5.0 Vdc, f = 100 Hz) (f = 1.0 kHz) (f = 10 kHz)	NF	— — —	5.0 3.0 3.0	dB

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ASSURANCE TESTING (Pre/Post Burn-In)				
Burn-In Conditions: T _A = 30 ± 5°C, V _{CB} = 25 ± 5 Vdc				
P _T = 400 mW				
Characteristics Tested	Symbol	Initial and End Point Limits		Unit
		Min	Max	
Collector Cutoff Current (V _{CB} = 50 Vdc)	I _{CBO}	—	10	nAdc
DC Current Gain ⁽¹⁾ (I _C = 10 μAdc, V _{CE} = 5.0 Vdc)	h _{FE}	100	300	—
Delta from Pre-Burn-In Measured Values		Min	Max	
Delta Collector Cutoff Current	ΔI _{CBO}	—	±100 or ±1.0 whichever is greater	% of Initial Value nAdc
Delta DC Current Gain ⁽¹⁾	Δh _{FE}	—	±15	% of Initial Value

(1) Pulsed Pulse Width: 250 to 350 μs, Duty Cycle: 1% to 2%