2N6430
2N6431

CASE 22, STYLE 1
TO-18 (TO-206AA)

GENERAL PURPOSE TRANSISTOR

NPN SILICON

4

MAXIMUM RATINGS

Rating	Symbol	2N6430	2N6431	Unit
Collector-Emitter Voltage	V_{CEO}	200	300	Vdc
Collector-Base Voltage	V_{CBO}	200	300	Vdc
Emitter-Base Voltage	V_{EBO}	6.0		Vdc
Collector Current — Continuous	I_C	50		mA
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	500 2.86		mW mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.8 10.3		Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage(1) (I_C = 1.0 mAdc, I_B = 0)	2N6430 2N6431	$V_{(BR)CEO}$	 200 300	 — —	Vdc
Collector-Base Breakdown Voltage (I_C = 0.1 mAdc, I_E = 0)	2N6430 2N6431	$V_{(BR)CBO}$	 200 300	 — —	Vdc
Emitter-Base Breakdown Voltage (I_E = 0.1 mAdc, I_C = 0)		$V_{(BR)EBO}$	6.0	—	Vdc
Collector Cutoff Current (V_{CB} = 160 Vdc) (V_{CB} = 200 Vdc)	 2N6430 2N6431	I_{CBO}	 — —	 0.1 0.1	μAdc
Emitter Cutoff Current (V_{EB} = 4.0 Vdc, I_C = 0)		I_{EBO}	—	0.1	μAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 1.0 mAdc, V_{CE} = 10 Vdc) (I_C = 10 mAdc, V_{CE} = 10 Vdc) (I_C = 30 mAdc, V_{CE} = 10 Vdc)		h_{FE}	 25 40 50	 — — 200	—
Collector-Emitter Saturation Voltage (I_C = 20 mAdc, I_B = 2.0 mAdc)		$V_{CE(sat)}$	—	0.5	Vdc
Base-Emitter Saturation Voltage (I_C = 20 mAdc, I_B = 2.0 mAdc)		$V_{BE(sat)}$	—	0.9	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product (I_C = 10 mAdc, V_{CE} = 20 Vdc, f = 100 MHz)		f_T	50	500	MHz
Collector-Base Capacitance (V_{CB} = 20 Vdc, I_E = 0, f = 1.0 MHz)		C_{cb}	—	4.0	pF

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.