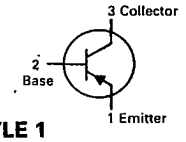
T-27-13
T-33-17

2N4026 thru 2N4029

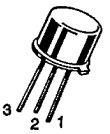
CASE 22-03, STYLE 1
TO-18 (TO-206AA)

2N4030 thru 2N4033

CASE 79-04, STYLE 1
TO-39 (TO-205AD)
AVAILABLE IN
JAN, JTX, JTXV



GENERAL PURPOSE
TRANSISTORS



PNP SILICON

Refer to 2N4404 for graphs.

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MAXIMUM RATINGS

Rating	Symbol	2N4026/28 2N4030/32	2N4027/29 2N4031/33	Unit
Collector-Emitter Voltage(1)	V_{CEO}	60	80	Vdc
Collector-Base Voltage	V_{CBO}	60	80	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	5.0	Vdc
		2N4026-2N4029	2N4030-2N4033	
Collector Current — Continuous	I_C	1.0	1.0	Adc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	.5 2.85	1.25 7.15	W mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	2.0 11.4	7.0 40	W mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C
Lead or Terminal Temperature(2)	T_L	+300		°C

(1) Applicable 0 to 10 mA
(2) Measured at a distance not less than 1/16" from seated surface (or case) for 60 Sec.

THERMAL CHARACTERISTICS

Characteristic	Symbol	TO-18	TO-39	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	40	20	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	280	140	°C/W

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C = 10 mA)	2N4026,28,30,32 2N4027,29,31,33	$V_{(BR)CEO}$	 60 80	 — —	V
Collector-Base Breakdown Voltage (I_C = 10 μA)	2N4026,28,30,32 2N4027,29,31,33	$V_{(BR)CBO}$	 60 80	 — —	V
Emitter-Base Breakdown Voltage (I_E = 10 μA)		$V_{(BR)EBO}$	5.0	—	V
Collector Cutoff Current (V_{CB} = 50 V) (V_{CB} = 60 V) (V_{CB} = 50 V, T_A = 150°C) (V_{CB} = 60 V, T_A = 150°C)	 2N4026,28,30,32 2N4027,29,31,33 2N4026,28,30,32 2N4027,29,31,33	I_{CBO}	 — — — —	 50 50 50 50	nA μA
Emitter Cutoff Current (V_{EB} = 5.0 V)		I_{EBO}	—	10	μA
ON CHARACTERISTICS					
DC Current Gain (I_C = 100 mA, V_{CE} = 5.0 V, @ −55°C) (I_C = 100 μA, V_{CE} = 5.0 V) (I_C = 100 mA, V_{CE} = 5.0 V) (I_C = 500 mA, V_{CE} = 5.0 V) (I_C = 1.0 A, V_{CE} = 5.0 V)	2N4026,27,30,31 2N4028,29,32,33 2N4026,27,30,31 2N4028,29,32,33 2N4026,27,30,31 2N4028,29,32,33 2N4026,27,30,31 2N4028,29,32,33 2N4026,30 2N4027,31 2N4028,32 2N4029,33	h_{FE}	 15 40 30 75 40 100 25 70 15 10 40 25	 — — — — 120 300 — — — — — —	—

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

Characteristic		Symbol	Min	Max	Unit
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			V
(I_C = 150 mA, I_B = 15 mA)			—	0.15	
(I_C = 500 mA, I_B = 50 mA)			—	0.50	
(I_C = 1.0 A, I_B = 100 mA)	2N4026,28,30,32		—	1.0	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	—	0.9	V
(I_C = 150 mA, I_B = 15 mA)					
Base-Emitter On Voltage		$V_{BE(on)}$			V
(I_C = 1.0 A, V_{CE} = 1.0 V)	2N4026,28,30,32		—	1.2	
(I_C = 500 mA, V_{CE} = 0.5 V)			—	1.1	
SMALL-SIGNAL CHARACTERISTICS					
Output Capacitance (V_{CE} = 10 V, f = 1.0 MHz)		C_{obo}	—	20	pF
Input Capacitance (V_{EB} = 0.5 V, f = 1.0 MHz)		C_{ibo}	—	110	pF
Small Signal Current Gain (I_C = 50 mA, V_{CE} = 10 V, f = 100 MHz)		h_{fe}	1.0	4.0	—
SWITCHING CHARACTERISTICS					
Storage Time (I_C = 500 mA, I_{B1} = I_{B2} = 50 mA)		t_s	—	350	ns
Turn-On Time (I_C = 500 mA, I_{B1} = 50 mA)		t_{on}	—	100	ns
Fall Time (I_C = 500 mA, I_{B1} = I_{B2} = 50 mA)		t_f	—	50	ns

(3) Pulse Width = 300 μs, Duty Cycle 1.0%.