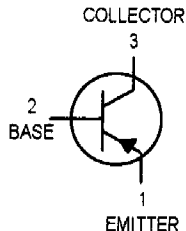


General Purpose Transistors

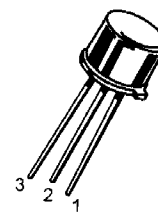
PNP Silicon



2N4036
2N4037

MAXIMUM RATINGS

Rating	Symbol	2N4036	2N4037	Unit
Collector-Emitter Voltage	V_{CEO}	-65	-40	Vdc
Collector-Base Voltage	V_{CBO}	-90	-60	Vdc
Emitter-Base Voltage	V_{EBO}	-7.0	-7.0	Vdc
Base Current	I_B	-0.5		Adc
Collector Current — Continuous	I_C	-1.0		Adc
Continuous Power Dissipation at or Below $T_C = 25^\circ\text{C}$ Linear Derating Factor	P_D	5.0 28.6	5.0 28.6	Watts mW/ $^\circ\text{C}$
Continuous Power Dissipation at or Below $T_A = 25^\circ\text{C}$ Linear Derating Factor	P_D	1.0 5.72	1.0 5.72	Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
Lead Temperature 1/16" from Case for 10 Seconds	T_L	230		$^\circ\text{C}$



TO-39 (TO-205AD)

THERMAL CHARACTERISTICS

Characteristic	Symbol	2N4036	2N4037	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	35	35	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage ⁽¹⁾ ($I_C = -100 \text{ mAdc}, I_B = 0$)	2N4036 2N4037	$V_{CEO(sus)}$	-65 -40	—	Vdc
Collector-Base Breakdown Voltage ($I_C = -0.1 \text{ mAdc}$)	2N4037	$V_{(BR)CBO}$	-60	—	Vdc
Collector Cutoff Current ($V_{CE} = -85 \text{ Vdc}, V_{EB} = -1.5 \text{ Vdc}$) ($V_{CE} = -30 \text{ Vdc}, V_{EB} = -1.5 \text{ Vdc}, T_C = 150^\circ\text{C}$)	2N4036 2N4037	I_{CEX}	—	-0.1 -100	mAdc
Collector Cutoff Current ($V_{CB} = -90 \text{ Vdc}, I_E = 0$) ($V_{CB} = -60 \text{ Vdc}, I_E = 0$)	2N4036 2N4037	I_{CBO}	—	-1.0 -0.25	μAdc
Emitter Cutoff Current ($V_{EB} = -7.0 \text{ Vdc}, I_C = 0$) ($V_{EB} = -5.0 \text{ Vdc}, I_C = 0$)	2N4036 2N4037	I_{EBO}	—	-10 -1.0	μAdc

1. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.



2N4036 2N4037

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain ($I_C = -0.1 \text{ mA dc}$, $V_{CE} = -10 \text{ V dc}$)	2N4036	20	—	—
($I_C = -1.0 \text{ mA dc}$, $V_{CE} = -10 \text{ V dc}$)	2N4037	15	—	—
($I_C = -150 \text{ mA dc}$, $V_{CE} = -10 \text{ V dc}$)(1)	2N4036	40	140	—
	2N4037	50	250	—
($I_C = -150 \text{ mA dc}$, $V_{CE} = -2.0 \text{ V dc}$)(1)	2N4036	20	200	—
($I_C = -500 \text{ mA dc}$, $V_{CE} = -10 \text{ V dc}$)(1)	2N4036	20	—	—
Collector–Emitter Saturation Voltage(1) ($I_C = -150 \text{ mA dc}$, $I_B = -15 \text{ mA dc}$)	2N4036	—	-0.65	Vdc
	2N4037	—	-1.4	Vdc
Base–Emitter Saturation Voltage(1) ($I_C = -150 \text{ mA dc}$, $I_B = -15 \text{ mA dc}$)	2N4036	—	-1.4	Vdc
Base–Emitter On Voltage(1) ($I_C = -150 \text{ mA dc}$, $V_{CE} = -10 \text{ V dc}$)	2N4037	—	-1.5	Vdc

SMALL-SIGNAL CHARACTERISTICS

Collector–Base Capacitance ($V_{CB} = -10 \text{ V dc}$, $f = 1.0 \text{ MHz}$)	2N4037	C_{cb}	—	30	pF
Current Gain — High Frequency ($I_C = -50 \text{ mA dc}$, $V_{CE} = -10 \text{ V dc}$, $f = 20 \text{ MHz}$)	2N4036	$ h_{fe} $	3.0	—	—
	2N4037		3.0	10	—

SWITCHING CHARACTERISTICS

Rise Time ($I_{B1} = -15 \text{ mA dc}$)	2N4036	t_r	—	70	ns
Storage Time ($I_{B2} = -15 \text{ mA dc}$)	2N4036	t_s	—	600	ns
Fall Time ($I_{B2} = -15 \text{ mA dc}$)	2N4036	t_f	—	100	ns
Turn–On Time ($I_{B1} = I_{B2}$)	2N4036	t_{on}	—	110	ns
Turn–Off Time ($I_{B1} = I_{B2}$)	2N4036	t_{off}	—	700	ns

1. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.