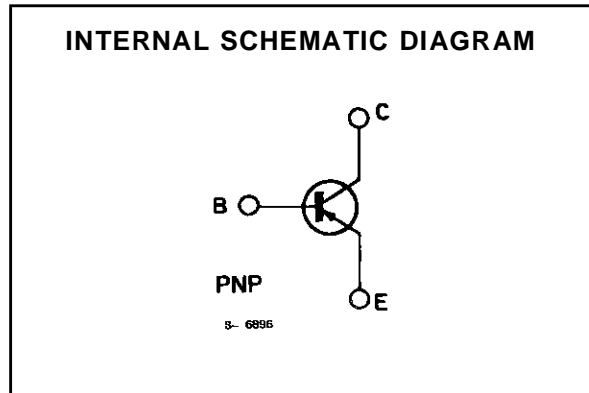
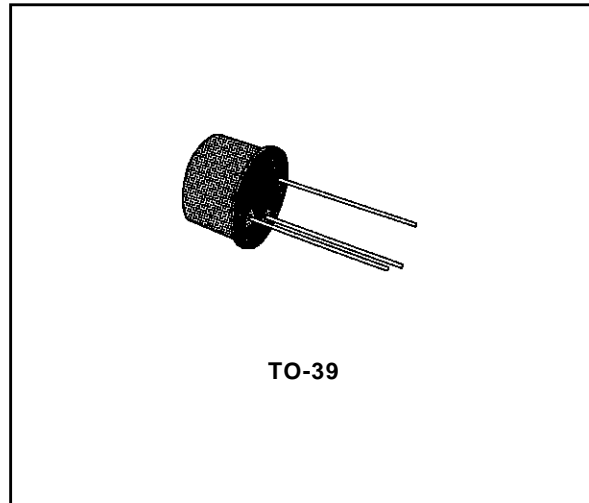


**MEDIUM-SPEED SWITCH**

**DESCRIPTION**

The 2N4036 is a silicon planar epitaxial PNP transistor in Jedec TO-39 metal case. It is intended particularly as medium speed saturated switch and general purpose amplifier.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	- 90	V
$V_{CEX}$	Collector-emitter Voltage ( $V_{BE} = 1.5$ V)	- 85	V
$V_{CER}$	Collector-emitter Voltage ( $R_{BE} \leq 200 \Omega$ )	- 85	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	- 65	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	- 6	V
$I_C$	Collector Current	- 1	A
$I_B$	Base Current	- 0.5	A
$P_{tot}$	Total Power Dissipation at $T_{amb} \leq 25$ °C at $T_{case} \leq 25$ °C	1	W
		7	W
$T_{stg}, T_j$	Storage and Junction Temperature	- 65 to 200	°C

## THERMAL DATA

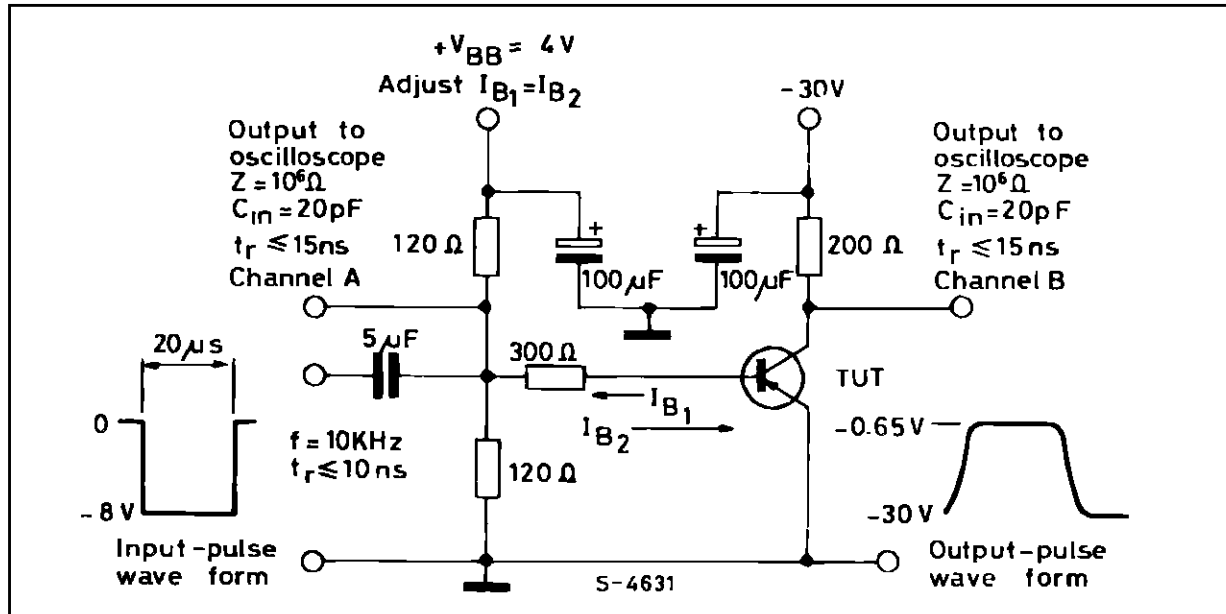
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	25	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	175	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\ ^{\circ}C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CB} = -60\ V$			- 20	nA
$I_{CEO}$	Collector Cutoff Current ( $I_B = 0$ )	$V_{CE} = -30\ V$			- 0.5	$\mu A$
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = -5\ V$			- 20	nA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ( $I_E = 0$ )	$I_C = -100\ \mu A$	- 90			V
$V_{(BR)CEX}^*$	Collector-emitter Breakdown Voltage ( $V_{BE} = 1.5\ V$ )	$I_C = -10\ mA$	- 85			V
$V_{(BR)CER}^*$	Collector-emitter Breakdown Voltage ( $R_{BE} = 200\ \Omega$ )	$I_C = -10\ mA$	- 85			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = -10\ mA$	- 65			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ( $I_C = 0$ )	$I_E = -100\ \mu A$	- 7			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = -150\ mA$ $I_B = -15\ mA$			- 0.65	V
$V_{BE}^*$	Base-emitter Voltage	$I_C = -150\ mA$ $V_{CE} = -10\ V$			- 1.1	V
$h_{FE}^*$	DC Current Gain	$I_C = -0.1\ mA$ $V_{CE} = -10\ V$ $I_C = -150\ mA$ $V_{CE} = -10\ V$ $I_C = -500\ mA$ $V_{CE} = -10\ V$	20 40 20		140	
$f_T$	Transition Frequency	$I_C = -50\ mA$ $V_{CE} = -10\ V$ $f = 20\ MHz$	60			MHz
$C_{EBO}$	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = -0.5\ V$ $f = 1\ MHz$			90	pF
$C_{CBO}$	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -10\ V$ $f = 1\ MHz$			30	pF
$t_{on}^{**}$	Turn-on Time	$I_C = -150\ mA$ $V_{CC} = -30V$ $I_{B1} = -15\ mA$			110	ns
$t_{off}^{**}$	Turn-off Time	$I_C = -150\ mA$ $V_{CC} = -30\ V$ $I_{B1} = -I_{B2} = -15\ mA$			700	ns

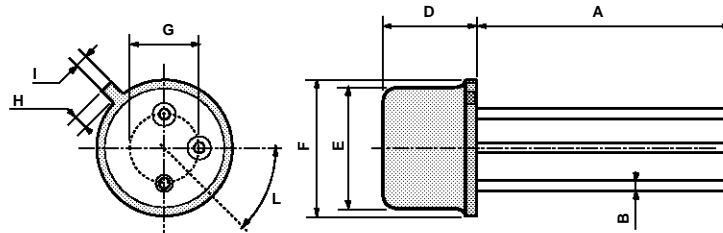
\* Pulsed : pulse duration = 300  $\mu s$ , duty cycle = 1 %.

\*\* See test circuit.

Test Circuit for  $t_{on}$ ,  $t_{off}$ .

## TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B

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