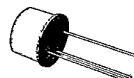
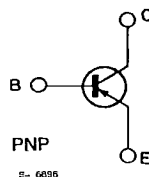


DESCRIPTION

The 2N4035 is a silicon planar epitaxial PNP transistors in Jedec TO-18 metal case, primarily intended for small signal, low noise industrial applications.



TO-18

INTERNAL SCHEMATIC DIAGRAM**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	- 40	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	- 40	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	- 5	V
I_C	Collector Current	- 100	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$ at $T_{case} \leq 25^\circ\text{C}$	0.36 1	W W
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

THERMAL DATA

$R_{th j-case}$	Thermal Resistance Junction-case	Max	175	$^{\circ}C/W$
$R_{th j-amb}$	Thermal Resistance Junction-ambient	Max	486	$^{\circ}C/W$

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current ($V_{BE} = 0$)	$V_{CE} = -30 V$ $V_{CE} = -30 V$ $T_{amb} = 125^{\circ}C$			-15 -15	nA μA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = -10 \mu A$	-40			V
$V_{(BR)CES}$	Collector-emitter Breakdown Voltage ($V_{BE} = 0$)	$I_C = -10 \mu A$	-40			V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = -10 mA$	-40			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_E = -10 \mu A$	-5			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = -1 mA$ $I_B = -0.1 mA$ $I_C = -10 mA$ $I_B = -1 mA$ $I_C = -50 mA$ $I_B = -5 mA$			-0.13 -0.14 -0.3	V V V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = -1 mA$ $I_B = -0.1 mA$ $I_C = -10 mA$ $I_B = -1 mA$ $I_C = -50 mA$ $I_B = -5 mA$ $T_{amb} = -55^{\circ}C$	-0.7		-0.75 -0.9 -1.1	V V V
h_{FE}^*	DC Current Gain	$I_C = -10 \mu A$ $V_{CE} = -1 V$ $I_C = -100 \mu A$ $V_{CE} = -1 V$ $I_C = -1 mA$ $V_{CE} = -1 V$ $I_C = -10 mA$ $V_{CE} = -1 V$ $I_C = -50 mA$ $V_{CE} = -1 V$ $I_C = -10 mA$ $V_{CE} = -1 V$	70 140 150 150 30 70		300	
h_{fe}	Small Signal Current Gain	$I_C = -1 mA$ $V_{CE} = -10 V$ $f = 1 kHz$	150		450	
f_T	Transition Frequency	$I_C = -10 mA$ $V_{CE} = -20 V$ $f = 100 MHz$	450			MHz
C_{EBO}	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = -0.5 V$ $f = 1 MHz$			5.5	pF
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -10 V$ $f = 1 MHz$			3.5	pF
NF	Noise Figure	$I_C = -1 mA$ $V_{CE} = -5 V$ $f = 100 MHz$ $R_g = 100 \Omega$			6	dB
t_{on}	Turn-on Time	$I_C = -50 mA$ $V_{CC} = -30 V$ $I_{B1} = -5 mA$			40	ns
t_{off}	Turn-off Time	$I_C = -50 mA$ $V_{CC} = -30 V$ $I_{B1} = -I_{B2} = -5 mA$			150	ns
h_{ie}	Input Impedance	$I_C = -1 mA$ $V_{CE} = -10 V$ $f = 1 kHz$	4		12	k Ω

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

30E D ■ 7929237 0031213 3 ■

ELECTRICAL CHARACTERISTICS (continued)

T-37-13

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
h_{re}	Reverse Voltage Ratio	$I_C = -1 \text{ mA}$ $V_{CE} = -10 \text{ V}$ $f = 1 \text{ kHz}$			4×10^{-4}	
h_{oe}	Output Admittance	$I_C = -1 \text{ mA}$ $V_{CE} = -10 \text{ V}$ $f = 1 \text{ kHz}$	8		40	μS
$r_{bb'}C_{b'c}$	Feedback Time Constant	$I_C = -10 \text{ mA}$ $V_{CE} = -20 \text{ V}$ $f = 80 \text{ MHz}$			40	ps