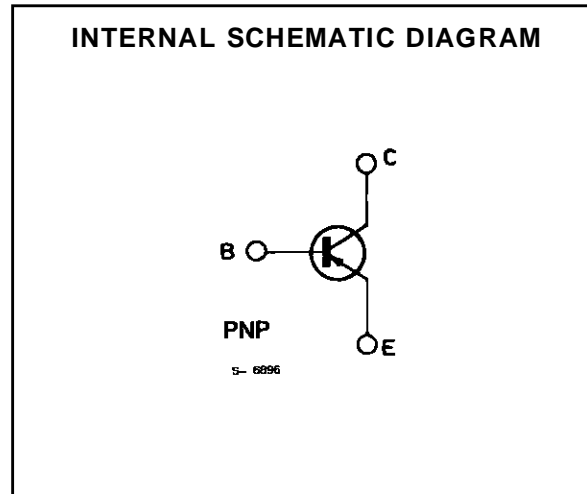
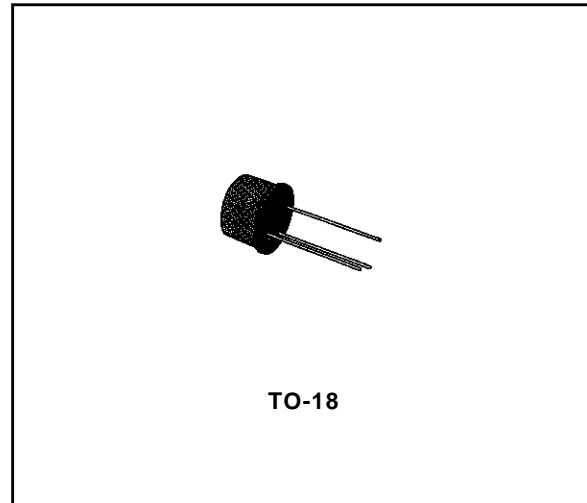


GENERAL PURPOSE AMPLIFIERS AND SWITCHES

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.



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 $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	0.36	W
		1	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	$I_C = -1\ mA$ $I_B = -0.1\ mA$ $I_C = -10\ mA$ $I_B = -1\ mA$ $I_C = -50\ mA$ $I_B = -5\ mA$	-0.7		-0.75 -0.9 -1.1	V V V
h_{FE}^*	DC Current Gain	$I_C = -10\ \mu A$ $V_{CE} = -1\ V$ $I_C = -100\ \mu A$ $V_{CE} = -1\ V$ $I_C = -1\ mA$ $V_{CE} = -1\ V$ $I_C = -10\ mA$ $V_{CE} = -1\ V$ $I_C = -50\ mA$ $V_{CE} = -1\ V$ $I_C = -10\ mA$ $V_{CE} = -1\ V$ $T_{amb} = -55^{\circ}C$	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

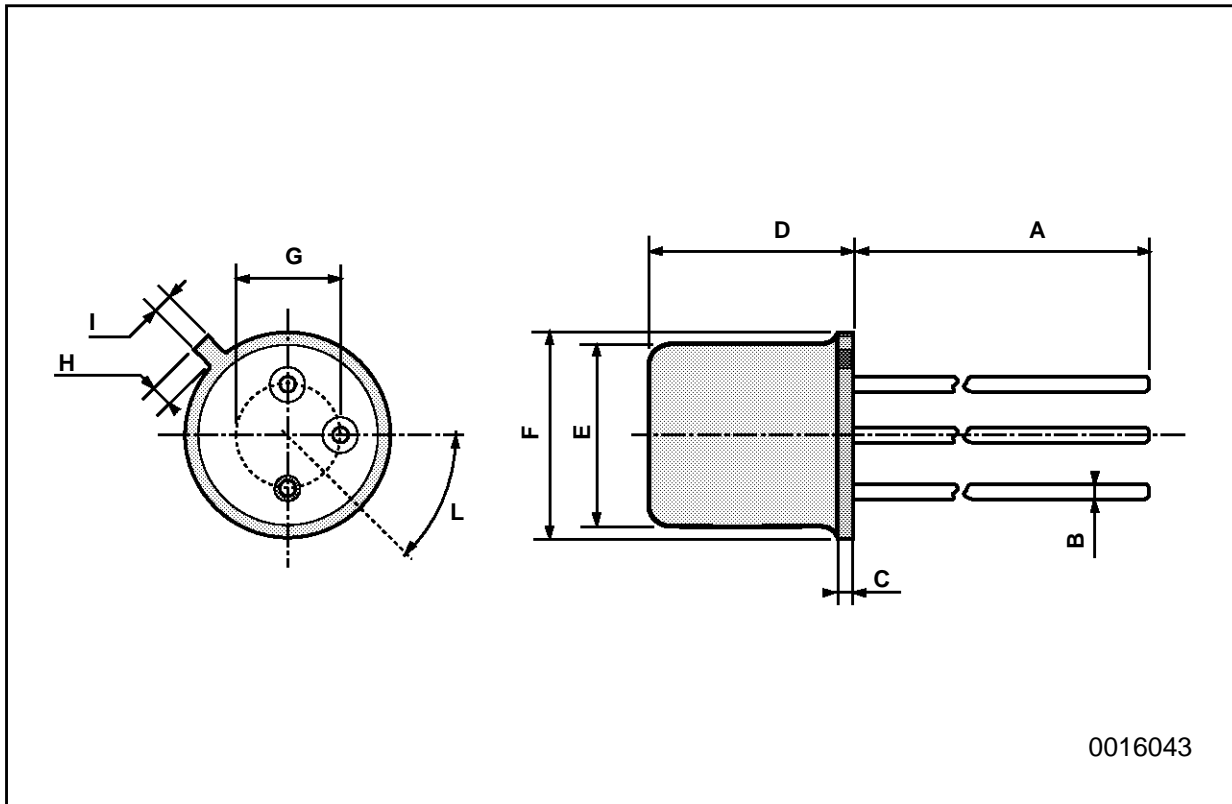
* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

ELECTRICAL CHARACTERISTICS (continued)

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
$r_{bb} \cdot C_{b'c}$	Feedback Time Constant	$I_C = -10 \text{ mA}$ $V_{CE} = -20 \text{ V}$ $f = 80 \text{ MHz}$			40	ps

TO-18 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45°			45°		



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