



Description:

A Widely used "Industry Standard" silicon NPN transistor in a TO-18 type case designed for applications such as medium-speed switching and amplifiers from audio to VHF frequencies.



Features:

Low collector saturation Voltage : 1V (Max.)
 High current gain-bandwidth product: $f_r = 300\text{MHz}$ (Min.) at $I_c = 20\text{mA}$

Absolute Maximum Ratings:

Collector-Base Voltage, V_{CBO}	: 60V
Collector-Emitter Voltage, V_{CEO}	: 60V
Emitter-Base Voltage, V_{EBO}	: 6V
Continuous Collector Current, I_C	: 50mA
Base Current I_B	: 15A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	: 360mW
Derate above 25°C	: $>2.06/^\circ\text{C}$
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	: 1.2W
Derate above 25°C	: $6.85\text{mW}/^\circ\text{C}$
Operating Junction Temperature Range, T_J	: -65°C to $+200^\circ\text{C}$
Storage Temperature Range, T_{stg}	: -65°C to $+200^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
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OFF Characteristics

Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	60	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60	-	
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C = 10\mu\text{A}, I_C = 0$	6	-	
Collector Cut-off Current	I_{CEX}	$V_{CB} = 45\text{V}, I_E = 0$	-	-	-
	I_{CBO}		-	0.01	μA
		$V_{CB} = 45\text{V}, I_E = 0, T_A = +150^\circ\text{C}$	-	10	
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	-	10	nA
Base Cut-Off Current	I_{BL}		-	-	-

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
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ON Characteristics

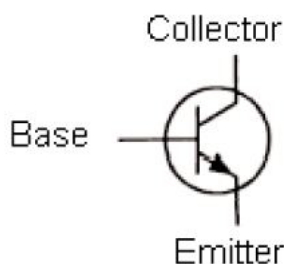
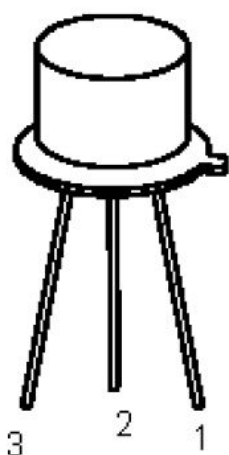
DC Current Gain	h_{FE}	$V_{CE} = 2V, I_C = 25A$	15	60	-
		$V_{CE} = 5V, I_C = 50A$	5	-	-
		$V_{CE} = 5V, I_C = 10mA, (Note\ 1)$	-	800	-
		$V_{CE} = 5V, I_C = 10mA, T_A = -55^\circ C$	20	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1mA, I_B = 0.1mA, (Note\ 1)$	-	0.35	V
	$V_{BE(sat)}$		-	-	-

Small-Signal Characteristics

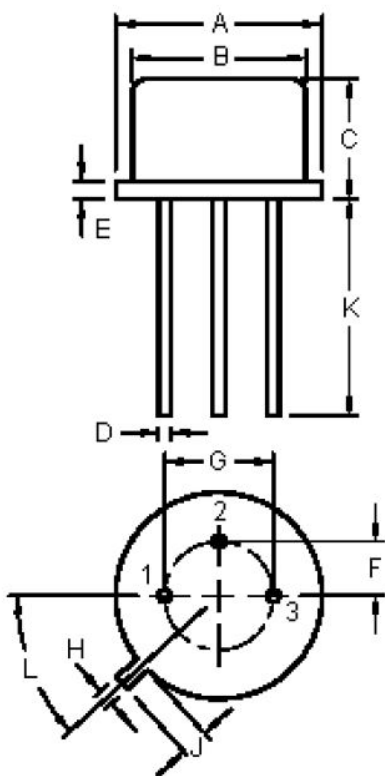
Current Gain-Bandwidth Product	f_T	$V_{CE} = 5V, I_C = 5mA, f = 20MHz, (Note\ 2)$	60	-	MHz
Output Capacitance	C_{obo}	$V_{CB} = 5V, I_E = 0, f = 1MHz$	-	6	pF
Input Capacitance	C_{ibo}	$V_{BE} = 500mV, I_C = 0, f = 1MHz$	-	6	pF
Input Impedance	h_{ie}	$V_{CE} = 5V, I_C = 1mA, f = 1kHz$	3.5	24	kOhm
Voltage Feedback Ratio	h_{re}		-	-	-
Small-Signal Current Gain	h_{fe}	$V_{CE} = 5V, I_C = 1mA, f = 1kHz$	150	900	-
Output Admittance	h_{oe}	$V_{CE} = 5V, I_C = 1mA, f = 1kHz$	-	40	$\mu mhos$
Collector-Base Time Constant	rbC_c		-	-	-
Noise Figure	NF	$V_{CE} = 5V, I_C = 10\mu A, f = 1kHz, R_s = 10k\Omega$	-	3	dB

Note 1. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Note 2. f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.



- Pin
1. Emitter
 2. Base
 3. Collector



Dim.	Min.	Max.
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	0.53
E	-	0.76
F	-	1.27
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.70	-
L	45°	45°

Dimensions : Millimetres

Part Number Table

Description	Part Number
Bipolar Transistor, NPN, 60V, TO-18	2N2484

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