SGS-THOMSON MICROELECTRONICS

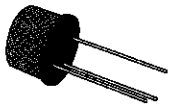
2N2484

LOW-LEVEL, LOW-NOISE AMPLIFIERS

DESCRIPTION

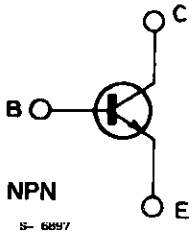
The 2N2484 is a silicon planar epitaxial NPN transistor in Jedec TO-18 metal case. It is designed for use in high-performance, low-noise amplifier circuits from audio to high-frequency.

Products approved to CECC50002-129 available on request.



TO-18

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage (I_E = 0)	60	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	60	V
V_{EBO}	Emitter-base Voltage (I_C = 0)	6	V
I_C	Collector Current	50	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25$ °C at $T_{case} \leq 25$ °C at $T_{case} \leq 100$ °C	0.36 1.2 0.68	W W W
T_{stg}, T_j	Storage and Junction Temperature	– 65 to 200	°C

THERMAL DATA

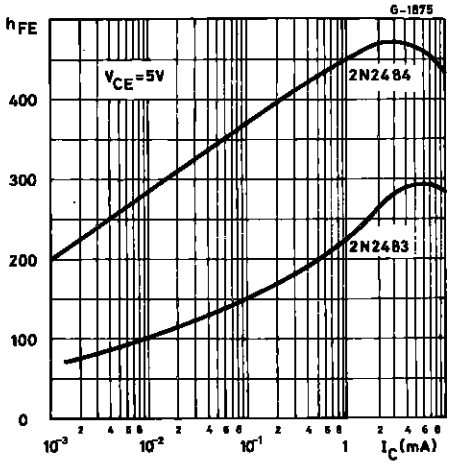
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	146	°C/W
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max	486	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C unless otherwise specified)

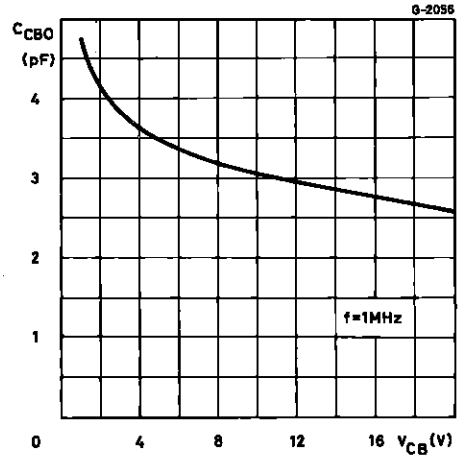
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = 45 V V_{CB} = 45 V T_{amb} = 150 °C			10 10	nA µA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 5 V			10	nA
$V_{(BR)CBO}$	Colllector-base Breakdown Voltage (I_E = 0)	I_C = 10 µA	60			V
$V_{(BR)CEO}$*	Collector-emitter Breakdown Voltage (I_B = 0)	I_C = 10 mA	60			V
$V_{(BR)\ EBO}$	Emittter-base Breakdown Voltage (I_C = 0)	I_E = 10 µA	6			V
$V_{CE\ (sat)}$	Collector-emitter Saturation Voltage	I_C = 1 mA I_B = 0.1 mA		0.2	0.35	V
V_{BE}	Base-emitter Voltage	I_C = 100 µA V_{CE} = 5 V	0.5	0.57	0.7	V
h_{FE}*	DC Current Gain	I_C = 1 µA V_{CE} = 5 V I_C = 10 µA V_{CE} = 5 V I_C = 100 µA V_{CE} = 5 V I_C = 500 µA V_{CE} = 5 V I_C = 1 mA V_{CE} = 5 V I_C = 10 mA V_{CE} = 5 V I_C = 10 µA V_{CE} = 5 V T_{amb} = – 55 °C	30 100 175 200 250 20	200 290 375 430 450 430	 500 800	
h_{fe}	Small Signal Current Gain	I_C = 1 mA V_{CE} = 5 V f = 1 kHz	150	400	900	
f_T	Transition Frequency	I_C = 50 µA V_{CE} = 5 V f = 5 MHz I_C = 500 µA V_{CE} = 5 V f = 30 MHz	 15 60	 20 78		 MHz MHz
C_{EBO}	Emitter-base Capacitance	I_C = 0 f = 1 MHz V_{EB} = 0.5 V		3.5	6	pF
C_{CBO}	Collector-base Capacitance	I_E = 0 f = 1 MHz V_{CB} = 5 V		3.5	6	pF
NF	Noise Figure	I_C = 10 µA V_{CE} = 5 V R_9 = 10 kΩ f = 100 Hz f = 1 kHz f = 10 kHz f = 10 to 10000 Hz		 4 1.8 0.6 1.8	 10 3 2 3	 dB dB dB dB
h_{ie}**	Input Impedance	I_C = 1 mA V_{CE} = 5 V	3.5	15	24	kΩ
h_{re}**	Reverse Voltage Ratio	I_C = 1 mA V_{CE} = 5 V		4.25	8	10^{-4}
h_{oe}**	Output Admittance	I_C = 1 mA V_{CE} = 5 V		15	40	µS

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

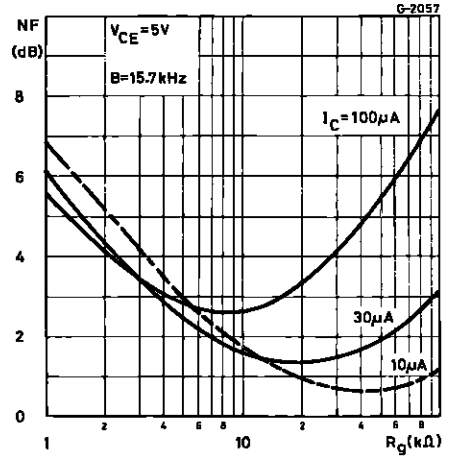
DC Current Gain.



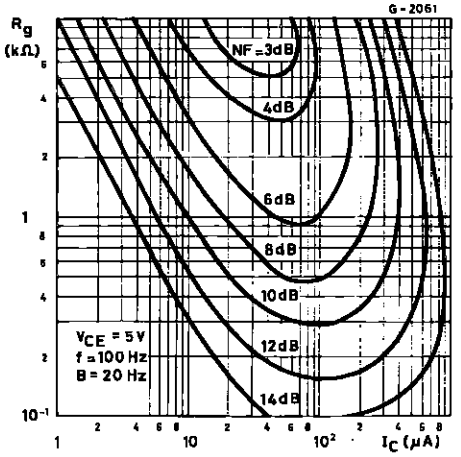
Collector-base Capacitance.



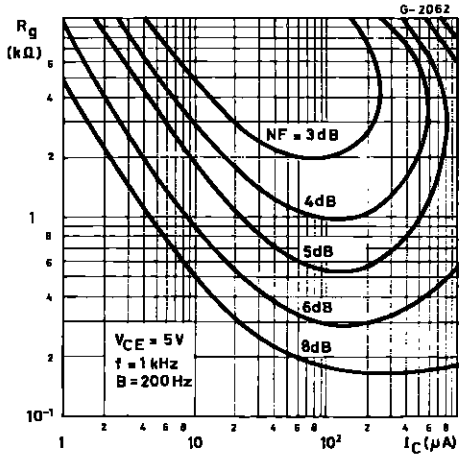
Noise Figure vs. Source Resistance.



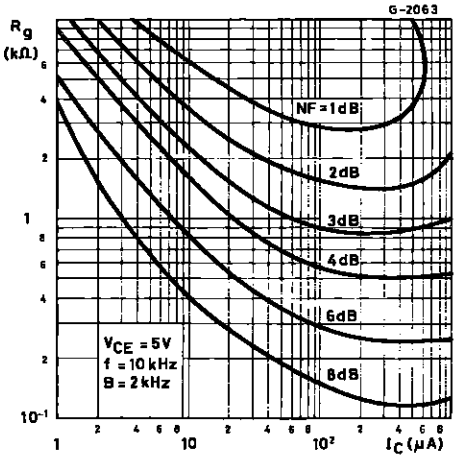
Contours of Constant Noise Figure
f = 100 Hz.



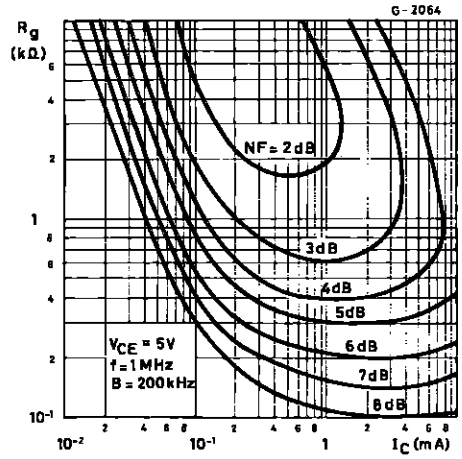
Contours of Constant Noise Figure
f = 1 kHz.



Contours of Constant Noise Figure
f = 10 kHz.

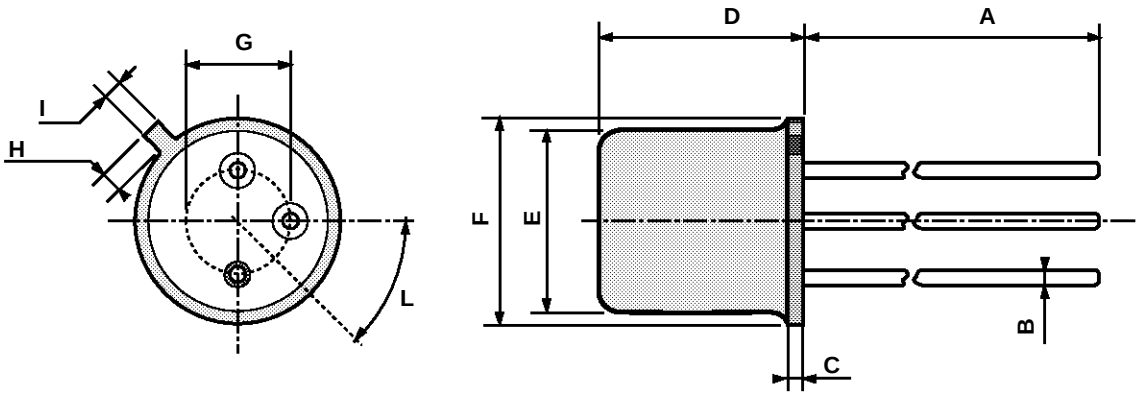


Contours of Constant Noise Figure
f = 1 MHz.



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^o			45^o		



0016043