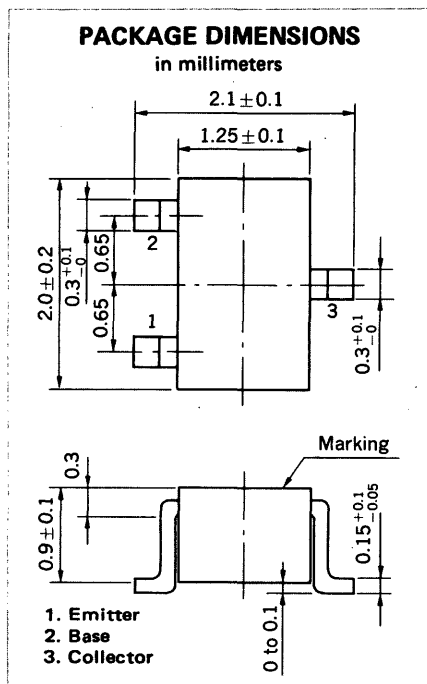


SILICON TRANSISTOR  
**2SC4180**

**AUDIO FREQUENCY HIGH GAIN AMPLIFIER**  
**NPN SILICON EPITAXIAL TRANSISTOR**



**FEATURES**

- Complementary to 2SA1612
- High DC Current Gain:  $h_{FE} = 600$  TYP. ( $V_{CE} = 6.0$  V,  $I_C = 1.0$  mA)

**ABSOLUTE MAXIMUM RATINGS**

Maximum Voltages and Current ( $T_a = 25^\circ\text{C}$ )

Collector to Base Voltage	$V_{CBO}$	120	V
Collector to Emitter Voltage	$V_{CEO}$	120	V
Emitter to Base Voltage	$V_{EBO}$	5.0	V
Collector Current (DC)	$I_C$	50	mA

Maximum Power Dissipation

Total Power Dissipation at $25^\circ\text{C}$ Ambient Temperature	$P_T$	150	mW
----------------------------------------------------------------------	-------	-----	----

Maximum Temperatures

Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )**

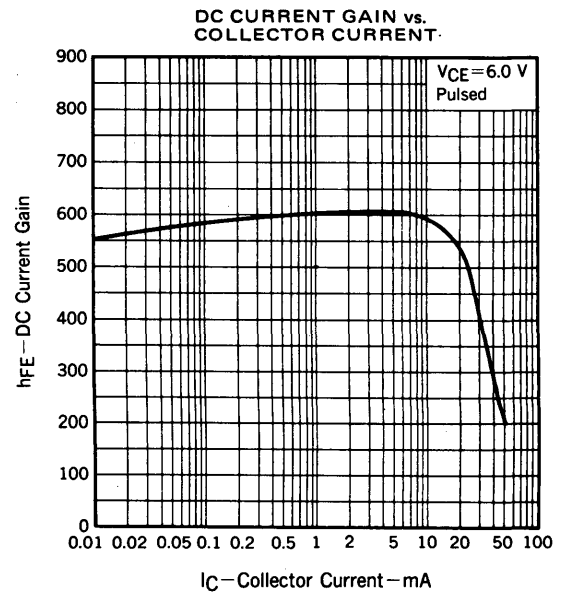
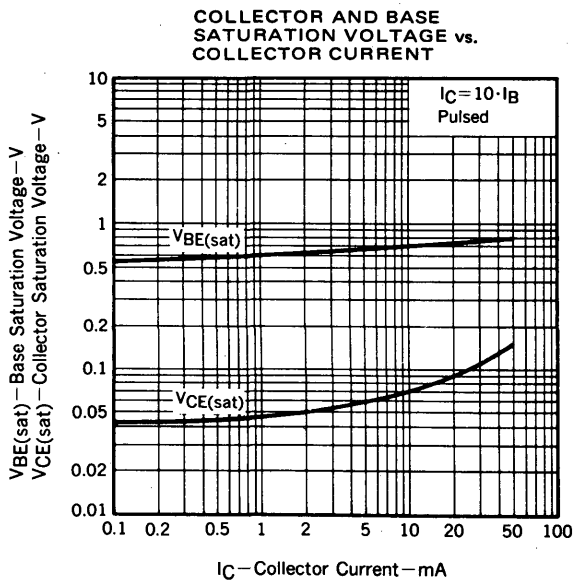
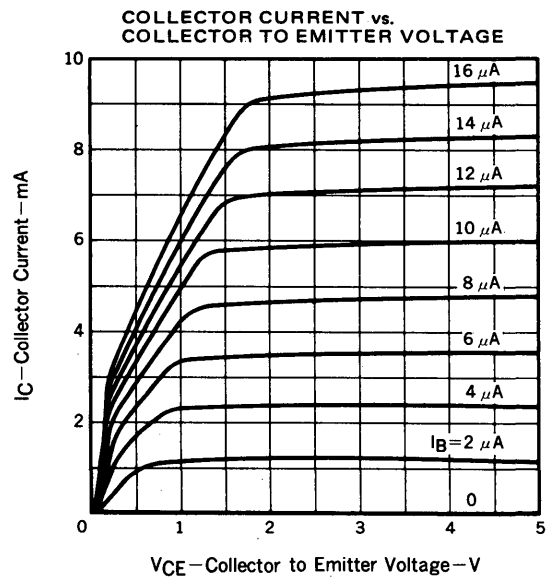
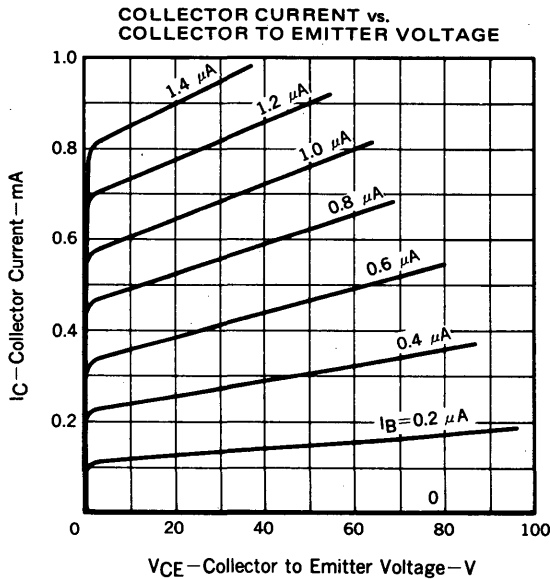
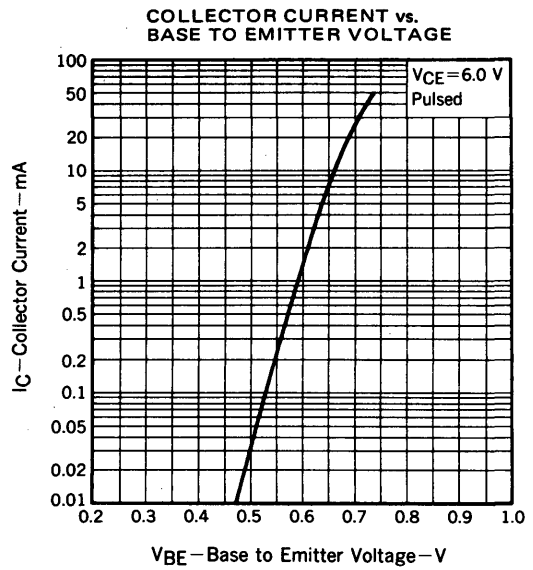
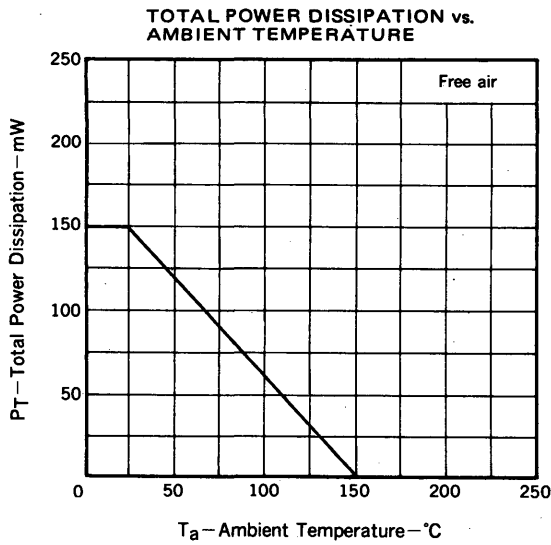
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			0.05	$\mu\text{A}$	$V_{CB} = 120$ V, $I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			0.05	$\mu\text{A}$	$V_{EB} = 5.0$ V, $I_C = 0$
DC Current Gain	$h_{FE1}$	100	580			$V_{CE} = 6.0$ V, $I_C = 0.1$ mA
DC Current Gain	$h_{FE2}$	135	600	900		$V_{CE} = 6.0$ V, $I_C = 1.0$ mA*
Collector Saturation Voltage	$V_{CE(sat)}$		0.07	0.30	V	$I_C = 10$ mA, $I_B = 1.0$ mA
Base to Emitter Voltage	$V_{BE}$	0.55	0.59	0.65	V	$V_{CE} = 6.0$ V, $I_C = 1.0$ mA
Gain Bandwidth Product	$f_T$	50	110		MHz	$V_{CE} = 6.0$ V, $I_E = -1.0$ mA
Output Capacitance	$C_{ob}$		1.6	2.5	pF	$V_{CB} = 30$ V, $I_E = 0$ , $f = 1.0$ MHz

\* Pulsed:  $PW \leq 350 \mu\text{s}$ , Duty Cycle  $\leq 2\%$

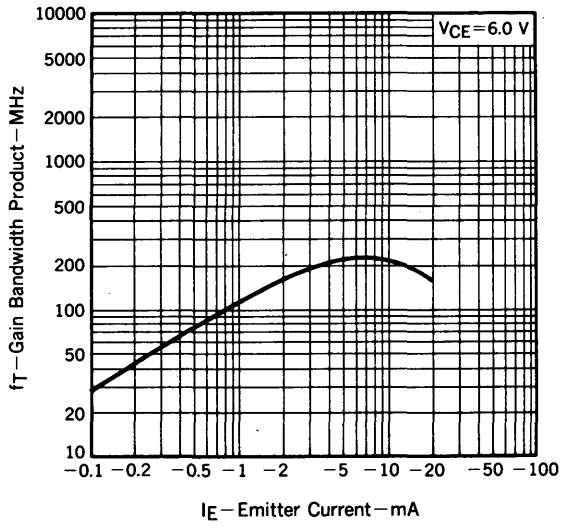
**$h_{FE}$  Classification**

Marking	D15	D16	D17	D18
$h_{FE2}$	135 to 270	200 to 400	300 to 600	450 to 900

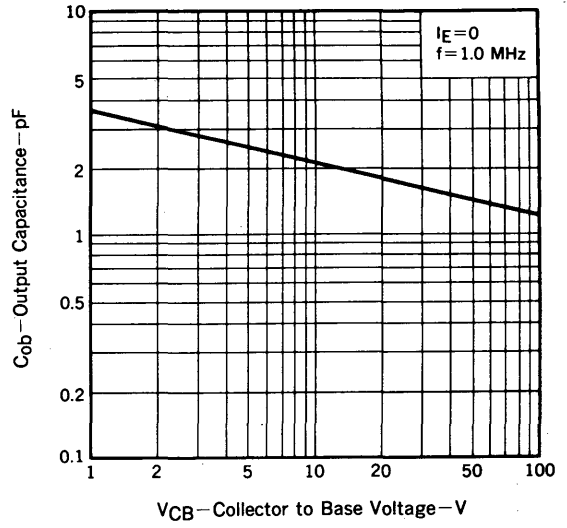
TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



**[MEMO]**

No part of this document may be copied or reproduced in any form or by any means without the prior written consent of NEC Corporation. NEC Corporation assumes no responsibility for any errors which may appear in this document.

NEC Corporation does not assume any liability for infringement of patents, copyrights or other intellectual property rights of third parties by or arising from use of a device described herein or any other liability arising from use of such device. No license, either express, implied or otherwise, is granted under any patents, copyrights or other intellectual property rights of NEC Corporation or of others.



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

[LittleDiode.com](http://LittleDiode.com)

Looking forward to providing you with the best possible service.