

SEMICONDUCTOR

TECHNICAL DATA

Complementary Silicon Power Transistors

- Designed for use as High Frequency Drivers in Audio Amplifiers
- High Gain, Identified with h_{FE} Classification Letter
- Excellent Frequency Response — $f_T = 100$ MHz

MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$)

Rating	Symbol	Max	Unit
Collector-Base Voltage	V_{CB0}	200	V
Collector-Emitter Voltage	V_{CEO}	200	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.5	A
Base Current	I_B	0.15	A
Collector Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	20	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	6.25	$^\circ\text{C}/\text{W}$

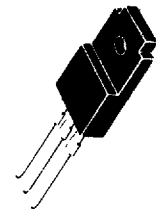
ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 160$ V, $I_E = 0$	—	—	1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5.0$ V, $I_C = 0$	—	—	1.0	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10$ mA, $I_B = 0$	200	—	—	V
DC Current Gain	h_{FE}	$V_{CE} = 5.0$ V, $I_C = 100$ mA	70	—	240	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500$ mA, $I_B = 50$ mA	—	—	1.5	V
Base-Emitter Voltage	V_{BE}	$V_{CE} = 5.0$ V, $I_C = 500$ mA	—	—	1.0	V
Current-Gain Bandwidth Product	f_T	$V_{CE} = 10$ V, $I_C = 100$ mA	—	100	—	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10$ V, $I_C = 0$, $f = 1.0$ MHz	—	25	—	pF

NOTE: h_{FE} Classifications; O: 70 to 140 Y: 120 to 240. Units may not be ordered by h_{FE} classification.

NPN
2SC3298B
PNP
2SA1306B

SILICON
POWER TRANSISTORS
1.5 AMPERES
200 VOLTS
20 WATTS



CASE 221H-01



MOTOROLA

NPN TYPICAL CHARACTERISTICS — 2SC3298B

T-33-01

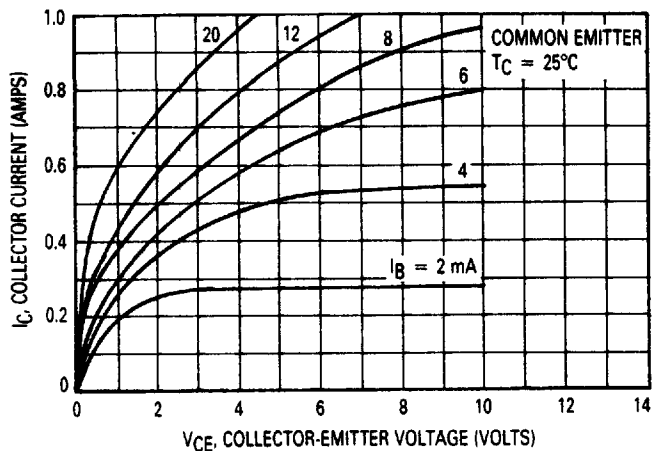


Figure 1. On-Region Characteristics

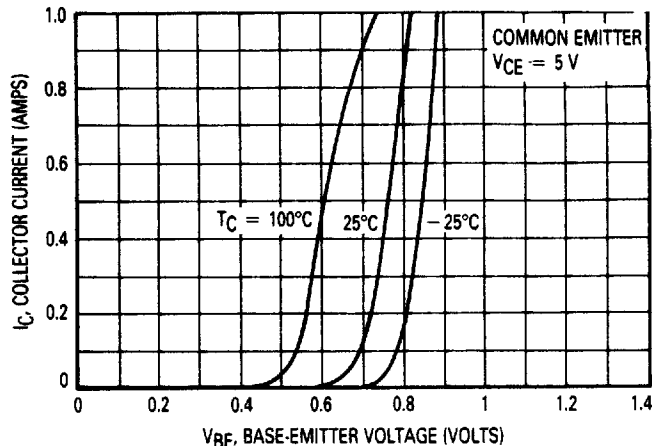


Figure 2. Base-Emitter Voltage

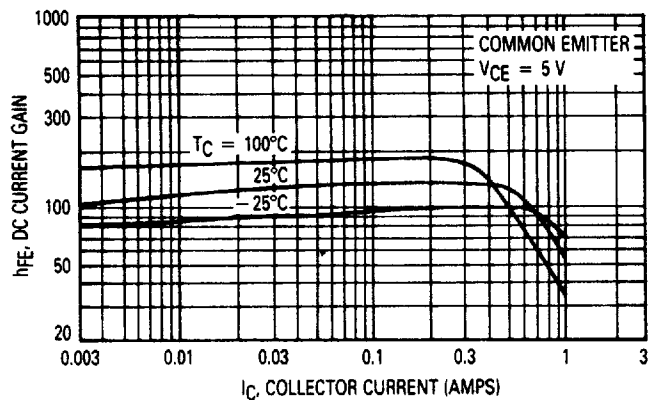


Figure 3. DC Current Gain

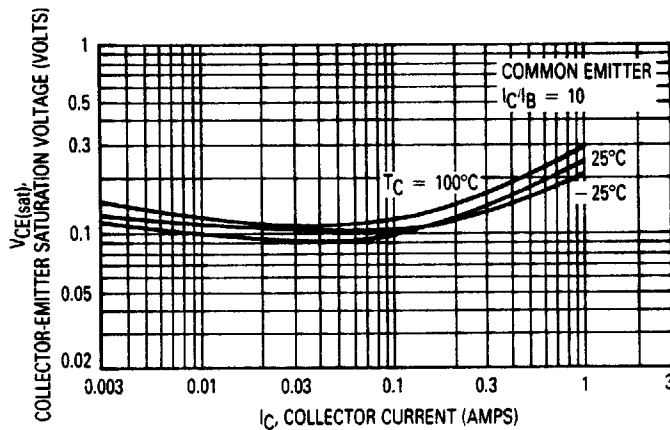


Figure 4. "On" Voltage versus Collector Current

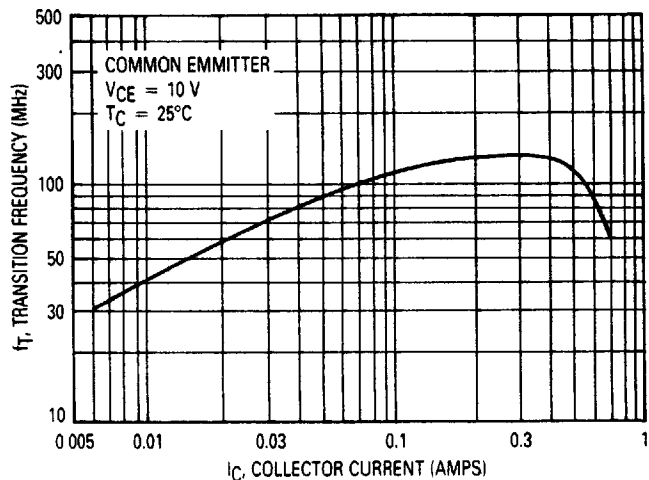


Figure 5. Current-Gain Bandwidth Product

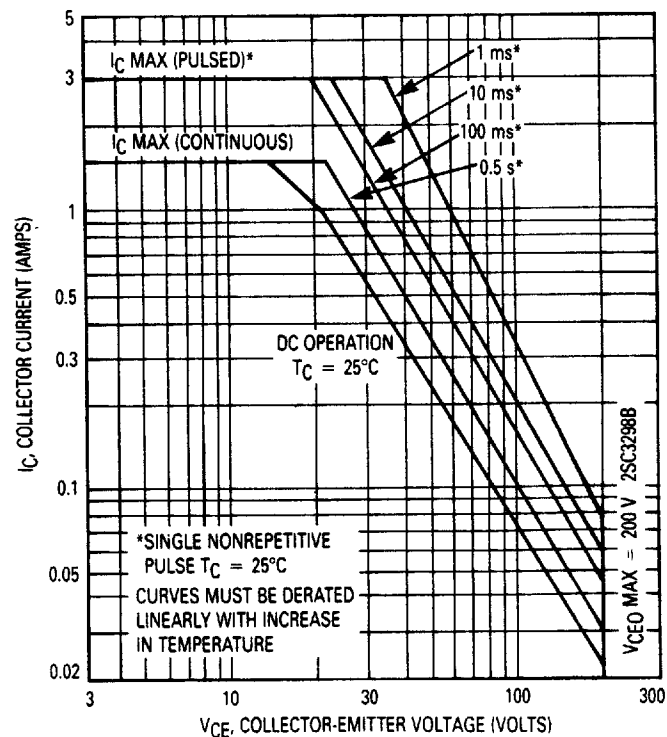


Figure 6. Maximum Forward Bias Safe Operating Area

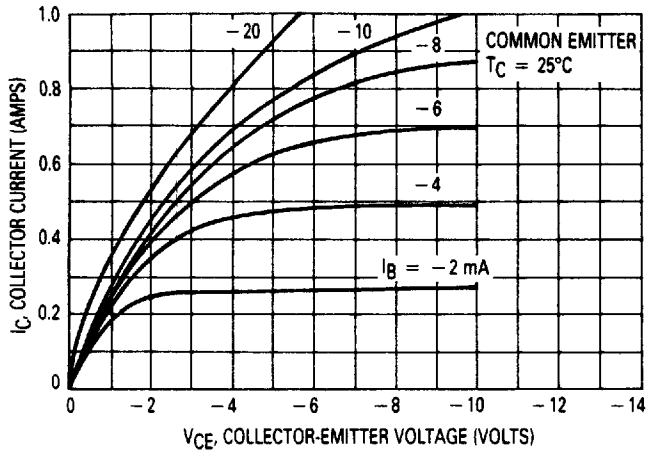


Figure 7. On-Region Characteristics

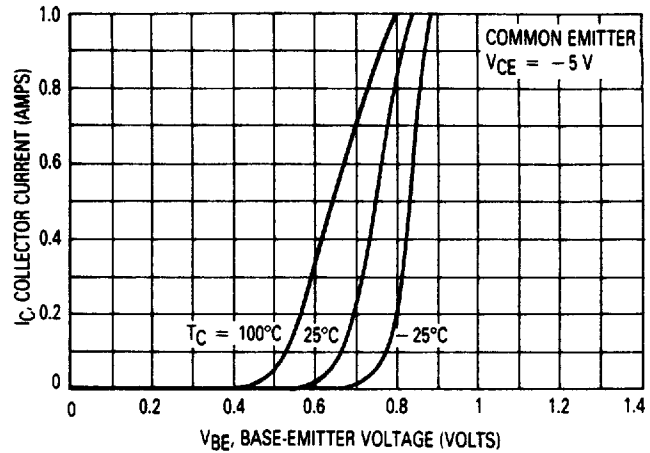


Figure 8. Base-Emitter Voltage

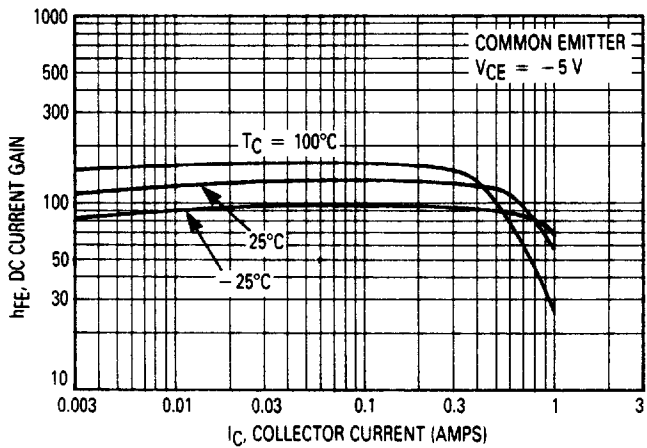


Figure 9. DC Current Gain

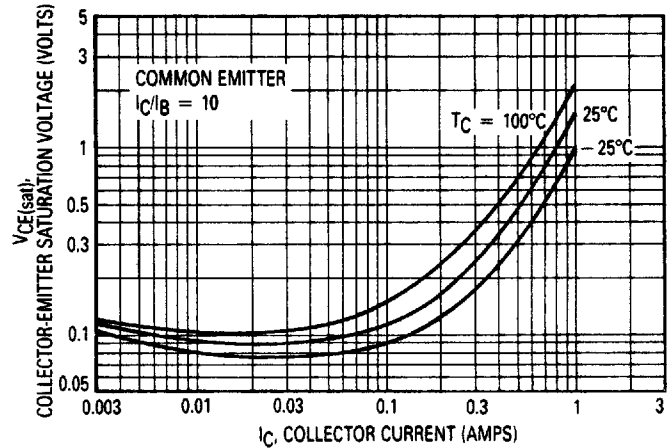


Figure 10. "On" Voltage versus Collector Current

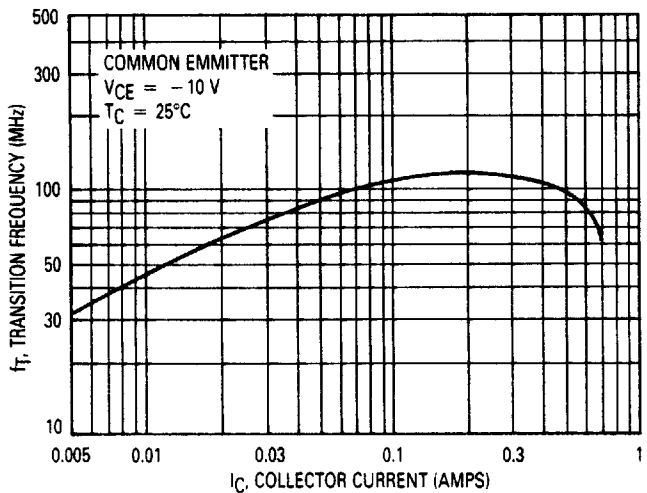


Figure 11. Current-Gain Bandwidth Product

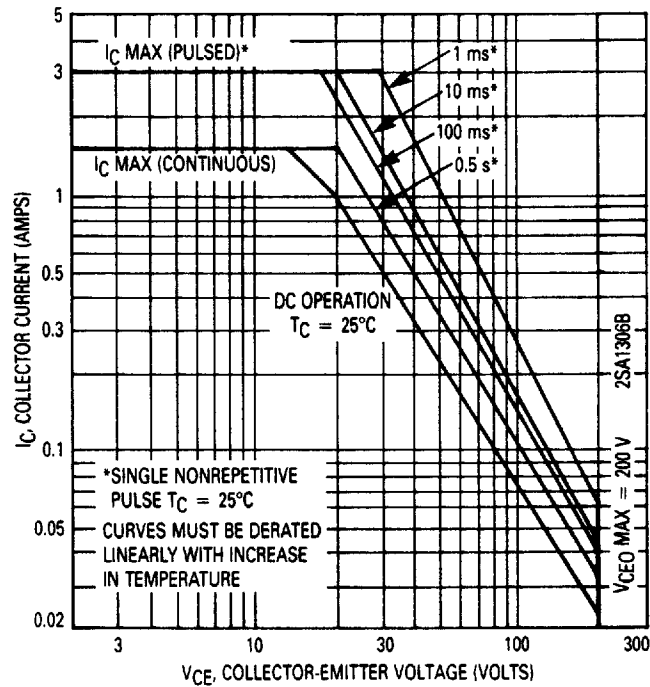
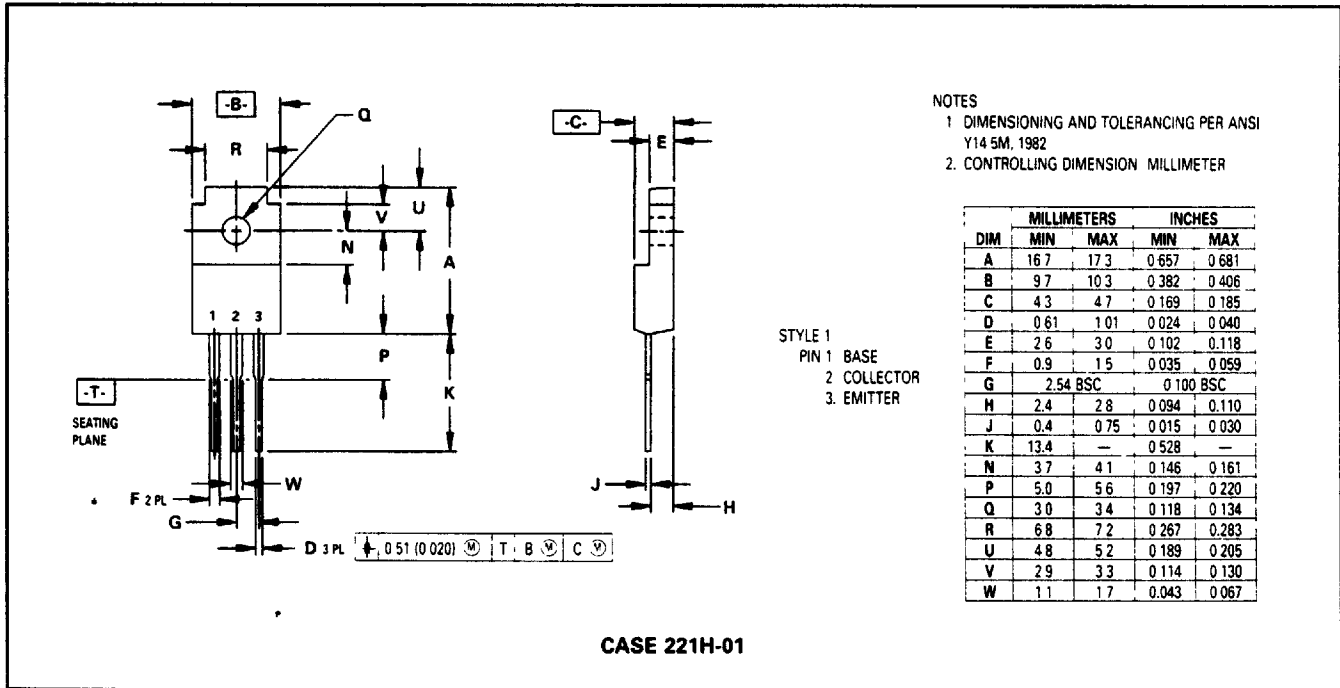


Figure 12. Maximum Forward Bias Safe Operating Area

OUTLINE DIMENSIONS



Motorola reserves the right to make changes without further notice to any products herein to improve reliability, function or design. Motorola does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Literature Distribution Centers:

USA: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036.

EUROPE: Motorola Ltd.; European Literature Center; 88 Tanners Drive, Blakelands, Milton Keynes, MK14 5BP, England.

JAPAN: Nippon Motorola Ltd.; 4-32-1, Nishi-Gotanda, Shinagawa-ku, Tokyo 141 Japan.

ASIA-PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Center, No. 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong.



MOTOROLA