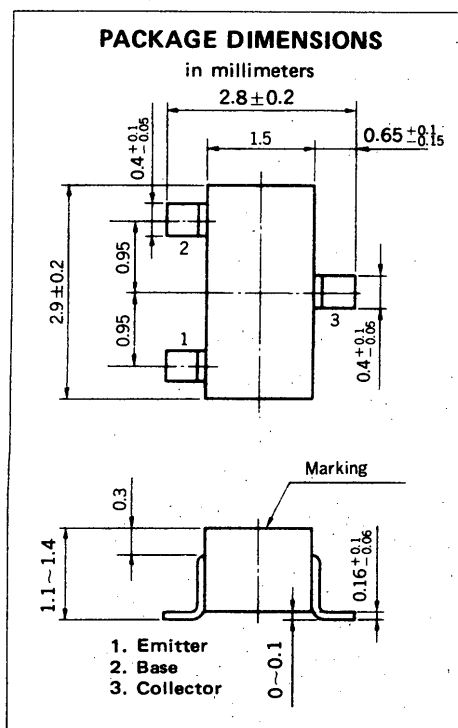


AUDIO FREQUENCY POWER AMPLIFIER  
NPN SILICON EPITAXIAL TRANSISTOR  
MINI MOLD



DESCRIPTION

The 2SD596 is designed for use in small type equipments especially recommended for hybrid integrated circuit and other applications.

FEATURES

- Micro package.
- High DC current gain.  $h_{FE} : 200$  TYP. ( $V_{CE} = 1.0$  V,  $I_C = 100$  mA)
- Complimentary to NEC 2SB624 PNP Transistor.

ABSOLUTE MAXIMUM RATINGS

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

Collector to Base Voltage	$V_{CBO}$	30	V
Collector to Emitter Voltage	$V_{CEO}$	25	V
Emitter to Base Voltage	$V_{EBO}$	5.0	V
Collector Current (DC)	$I_C$	700	mA

Maximum Power Dissipation

Total Power Dissipation at $25^\circ\text{C}$ Ambient Temperature	$P_T$	200	mW
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Maximum Temperatures

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

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

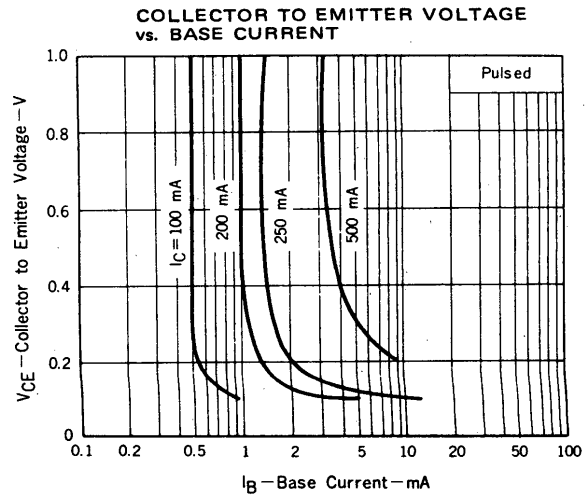
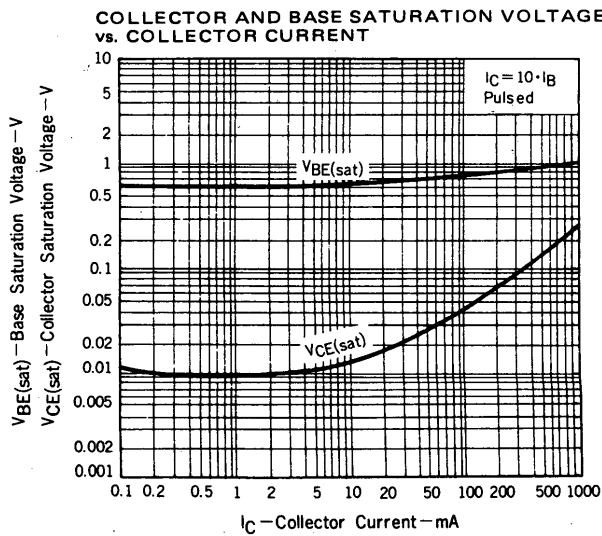
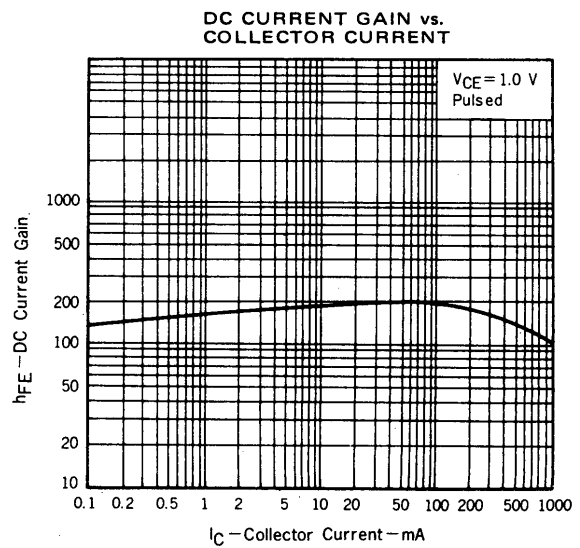
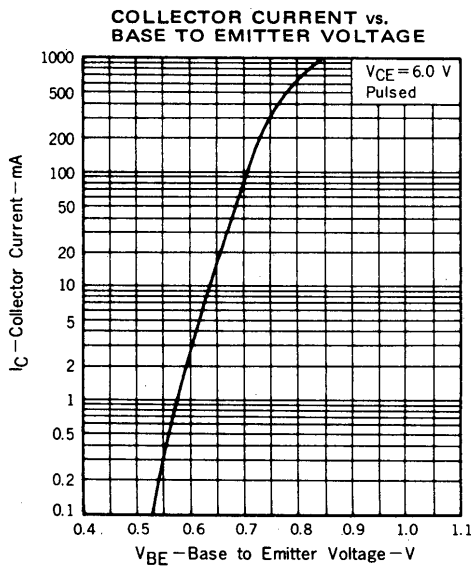
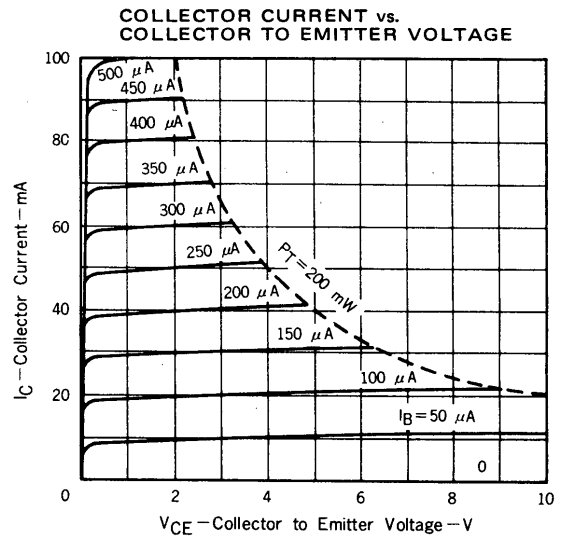
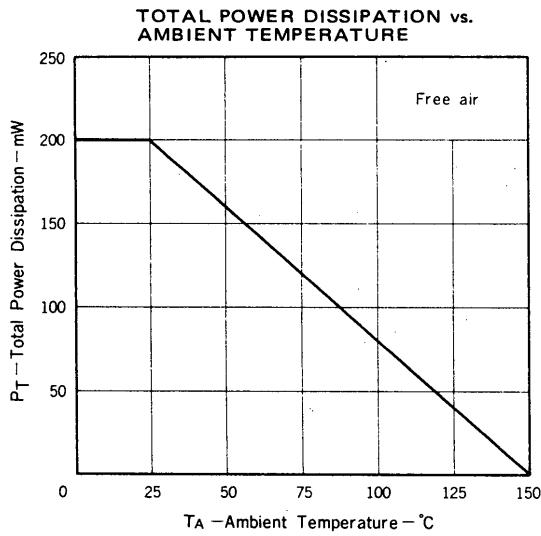
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			100	nA	$V_{CB} = 30$ V, $I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			100	nA	$V_{EB} = 5.0$ V, $I_C = 0$
DC Current Gain	$h_{FE1}$	110	200	400		$V_{CE} = 1.0$ V, $I_C = 100$ mA *
DC Current Gain	$h_{FE2}$	50				$V_{CE} = 1.0$ V, $I_C = 700$ mA *
Base to Emitter Voltage	$V_{BE}$	600	640	700	mV	$V_{CE} = 6.0$ V, $I_C = 10$ mA *
Collector Saturation Voltage	$V_{CE(sat)}$		0.22	0.6	V	$I_C = 700$ mA, $I_B = 70$ mA *
Output Capacitance	$C_{ob}$		12		pF	$V_{CB} = 6.0$ V, $I_E = 0$ , $f = 10$ MHz
Gain Bandwidth Product	$f_T$		170		MHz	$V_{CE} = 6.0$ V, $I_E = -10$ mA

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

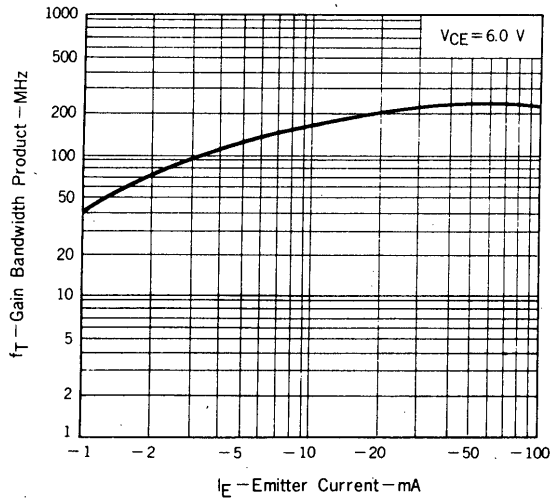
$h_{FE1}$  Classification

Marking	DV1	DV2	DV3	DV4	DV5
$h_{FE}$	110 to 180	135 to 220	170 to 270	200 to 320	250 to 400

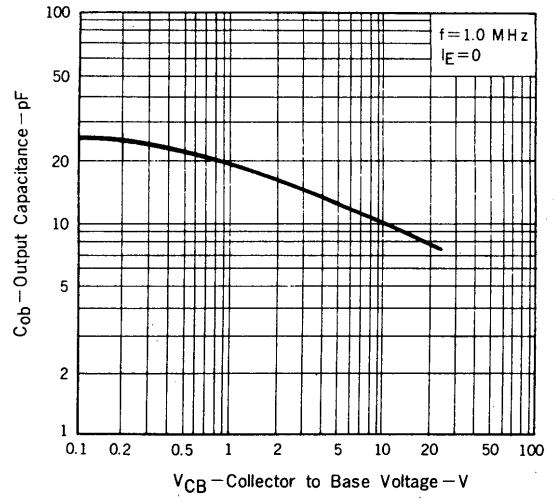
TYPICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



[MEMO]

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**Special:** Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

**Specific:** Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

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Anti-radioactive design is not implemented in this product.