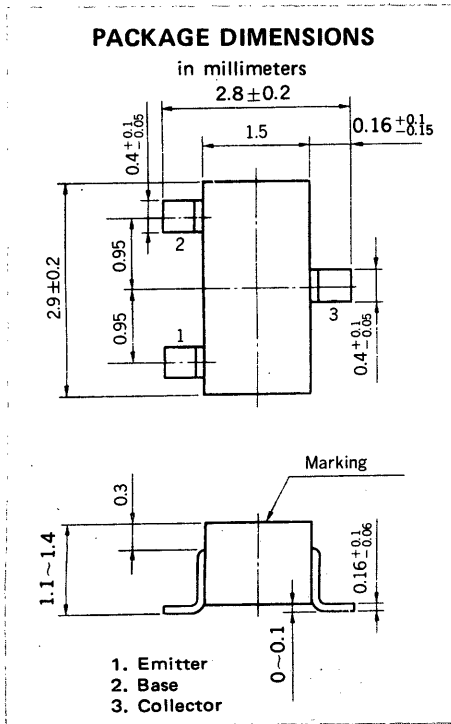


# SILICON TRANSISTORS

## 2SD780, 2SD780A

### AUDIO FREQUENCY POWER AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR MINI MOLD



#### DESCRIPTION

The 2SD780, 2SD780A are 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,  $I_C = 50$  mA)
- Complimentary to NEC 2SB736, 2SB736A PNP Transistor.

#### ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Current ( $T_a = 25^\circ\text{C}$ )	2SD780	2SD780A	
Collector to Base Voltage	$V_{CBO}$ 60	80	V
Collector to Emitter Voltage	$V_{CEO}$ 60	80	V
Emitter to Base Voltage	$V_{EBO}$	5.0	V
Collector Current (DC)	$I_C$	300	mA
Maximum Power Dissipation			
Total Power Dissipation			
at $25^\circ\text{C}$ Ambient Temperature	$P_T$	200	mW
Maximum Temperatures			
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Operating Junction Temperature	$T_j$	150	$^\circ\text{C}$

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

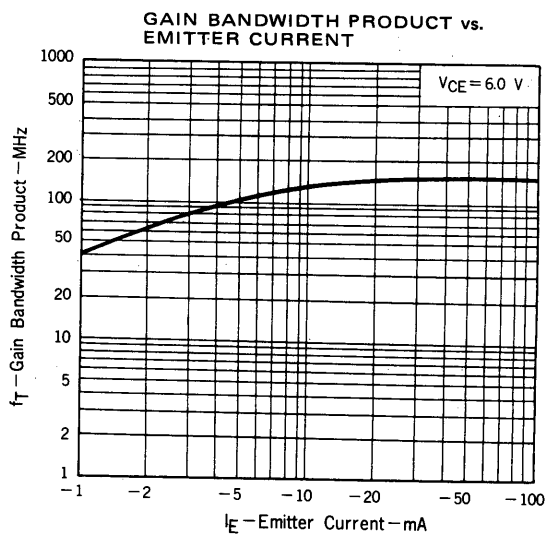
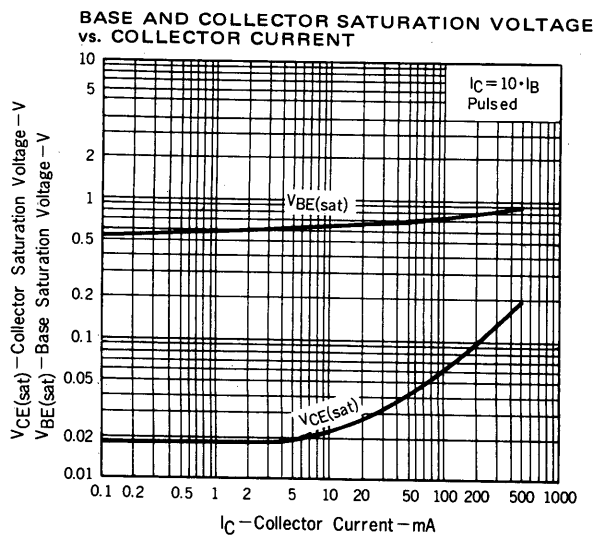
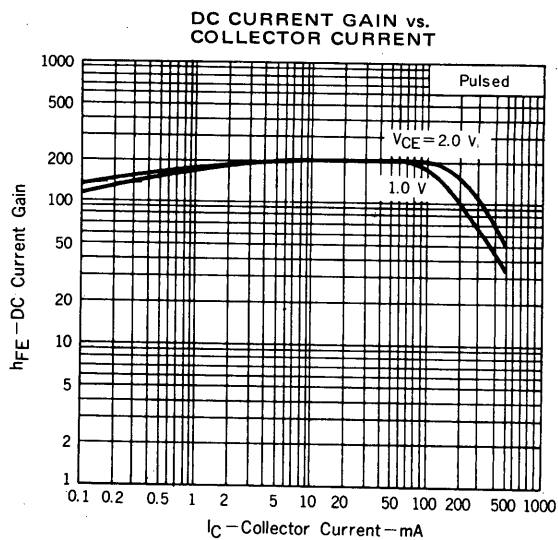
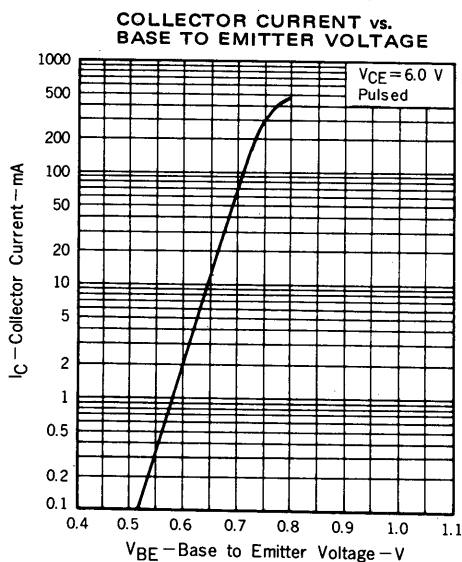
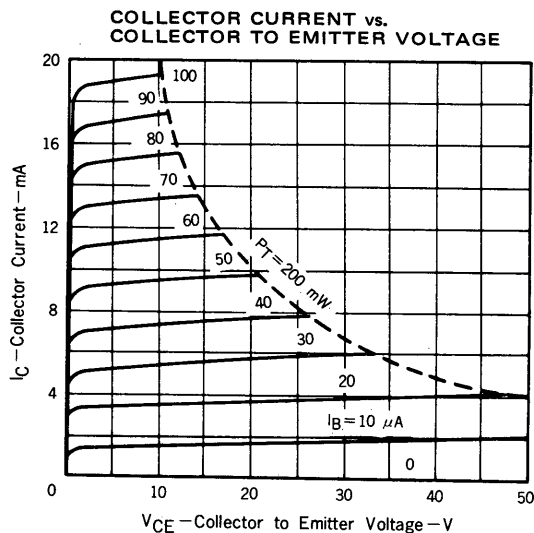
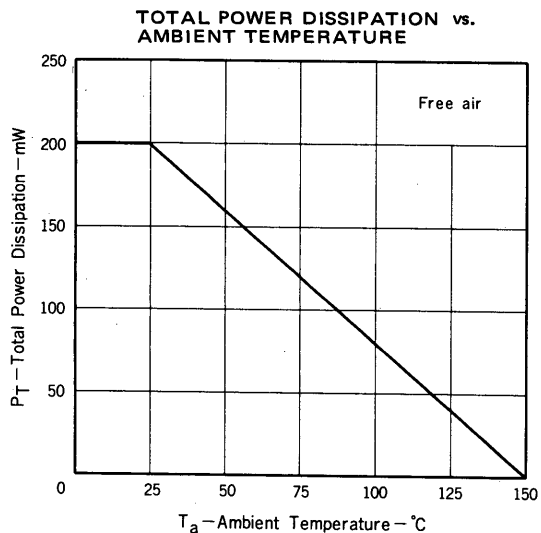
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			100	nA	$V_{CB} = 50$ V, $I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			100	nA	$V_{EB} = 5.0$ V, $I_C = 0$
DC Current Gain	$h_{FE1}$	110	200	400		$V_{CE} = 1.0$ V, $I_C = 50$ mA *
DC Current Gain	$h_{FE2}$	30				$V_{CE} = 2.0$ V, $I_C = 300$ mA *
Base to Emitter Voltage	$V_{BE}$	600	645	700	mV	$V_{CE} = 6.0$ V, $I_C = 10$ mA *
Collector Saturation Voltage	$V_{CE(sat)}$		0.15	0.6	V	$I_C = 300$ mA, $I_B = 30$ mA *
Output Capacitance	$C_{ob}$		7.0		pF	$V_{CB} = 6.0$ V, $I_E = 0$ , $f = 1.0$ MHz
Gain Bandwidth Product	$f_T$		140		MHz	$V_{CE} = 6.0$ V, $I_E = -10$ mA

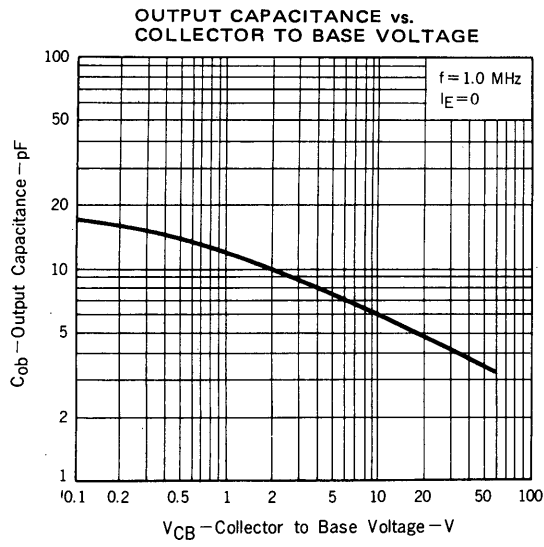
\* Pulsed PW  $\leq 350$   $\mu\text{s}$ , Duty Cycle  $\leq 2\%$

#### $h_{FE1}$ Classification

Marking.	2SD780	DW1	DW2	DW3	DW4	DW5
	2SD780A	D51	D52	D53	D54	D55
$h_{FE}$	110 to 180	135 to 220	170 to 270	200 to 320	250 to 400	

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





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