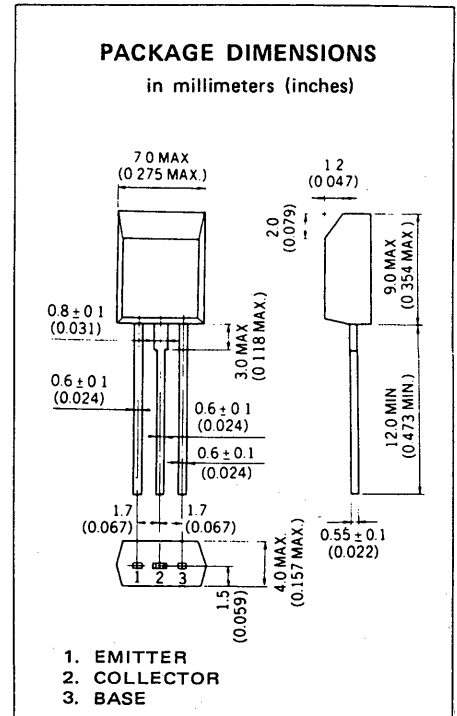


**DESCRIPTION** The 2SD471 is designed for use in driver and output stages of audio frequency amplifiers.

- FEATURES**
- High Total Power Dissipation:  
1.0 W at 25 °C Ambient Temperature.
  - Complementary to the NEC 2SB564 PNP Transistor.

**ABSOLUTE MAXIMUM RATINGS**

Maximum Temperatures	
Storage Temperature	..... -55 to +150 °C
Junction Temperature	..... +150 °C Maximum
Maximum Power Dissipation (Ta = 25 °C)	
Total Power Dissipation	..... 1.0 W
Thermal Resistance (Junction to Ambient)	..... 125 °C/W
Maximum Voltages and Currents (Ta = 25 °C)	
V <sub>CBO</sub>	Collector to Base Voltage ..... 30 V
V <sub>CEO</sub>	Collector to Emitter Voltage ..... 25 V
V <sub>EBO</sub>	Emitter to Base Voltage ..... 5.0 V
I <sub>C</sub>	Collector Current ..... 1.0 A
I <sub>B</sub>	Base Current ..... 0.1 A



**ELECTRICAL CHARACTERISTICS (Ta = 25 °C)**

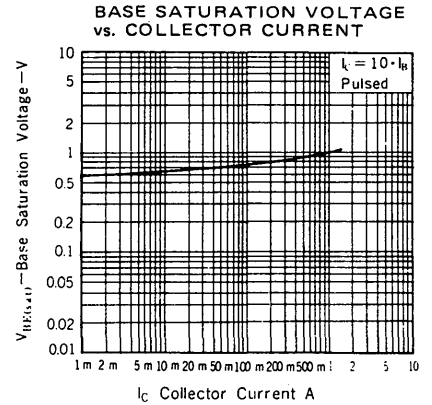
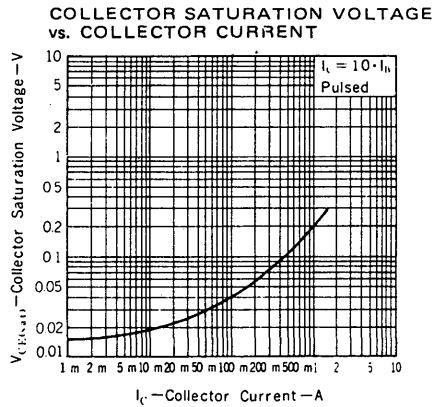
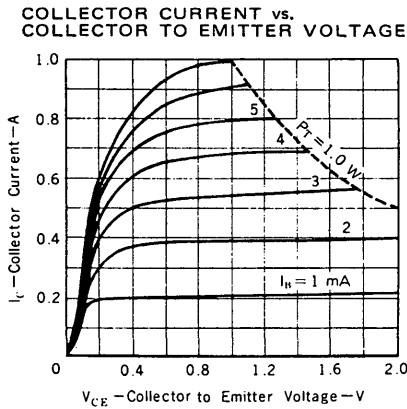
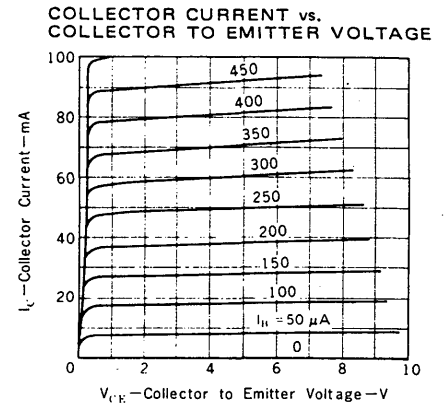
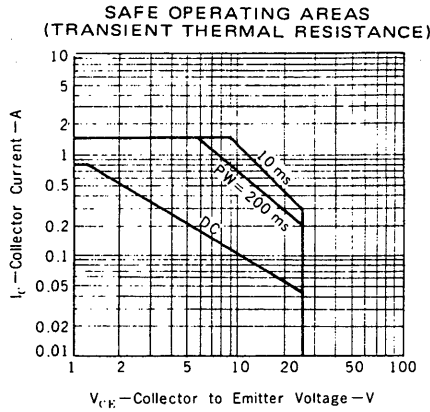
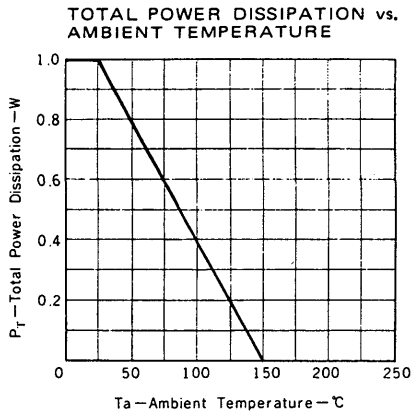
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h <sub>FE1</sub>	DC Current Gain	90	200	400		V <sub>CE</sub> = 1.0 V, I <sub>C</sub> = 0.1 A
h <sub>FE2</sub>	DC Current Gain	50	140			V <sub>CE</sub> = 1.0 V, I <sub>C</sub> = 1.0 A
f <sub>T</sub>	Gain Bandwidth Product		100		MHz	V <sub>CE</sub> = 6.0 V, I <sub>E</sub> = 10 mA
C <sub>ob</sub>	Collector to Base Capacitance		22		pF	V <sub>CB</sub> = 6.0 V, I <sub>E</sub> = 0, f = 1.0 MHz
I <sub>CBO</sub>	Collector Cutoff Current			100	nA	V <sub>CB</sub> = 30 V, I <sub>E</sub> = 0
I <sub>EBO</sub>	Emitter Cutoff Current			100	nA	V <sub>EB</sub> = 5.0 V, I <sub>C</sub> = 0
V <sub>BE</sub>	Base to Emitter Voltage	600	630	700	mV	V <sub>CE</sub> = 6.0 V, I <sub>C</sub> = 10 mA
V <sub>CE(sat)</sub>	Collector Saturation Voltage		0.21	0.35	V	I <sub>C</sub> = 1.0 A, I <sub>B</sub> = 0.1 A
V <sub>BE(sat)</sub>	Base Saturation Voltage		1.0	1.2	V	I <sub>C</sub> = 1.0 A, I <sub>B</sub> = 0.1 A

**Classification of h<sub>FE1</sub>**

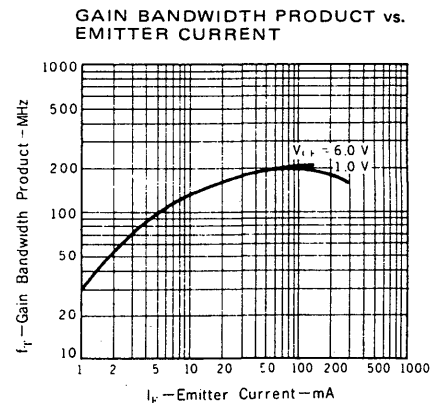
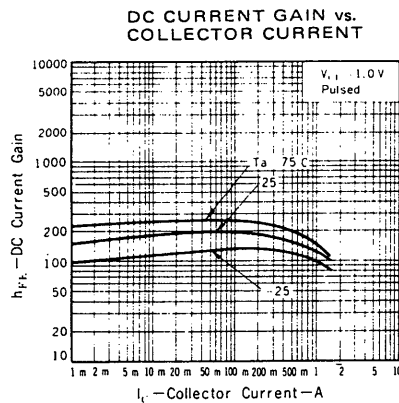
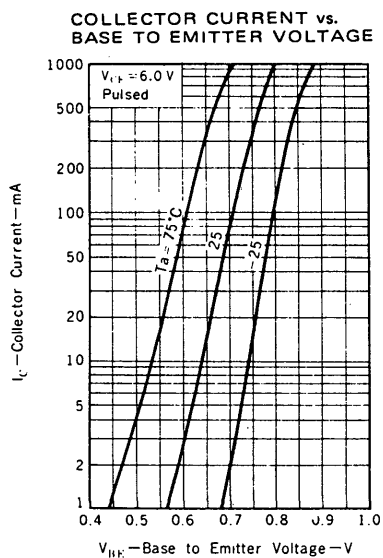
Rank	M	L	K
Range	90 - 180	135 - 270	200 - 400

h<sub>FE1</sub> Test Conditions: V<sub>CE</sub> = 1.0V, I<sub>C</sub> = 0.1A

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



4-4



COLLECTOR TO BASE CAPACITANCE vs.  
COLLECTOR TO BASE VOLTAGE

