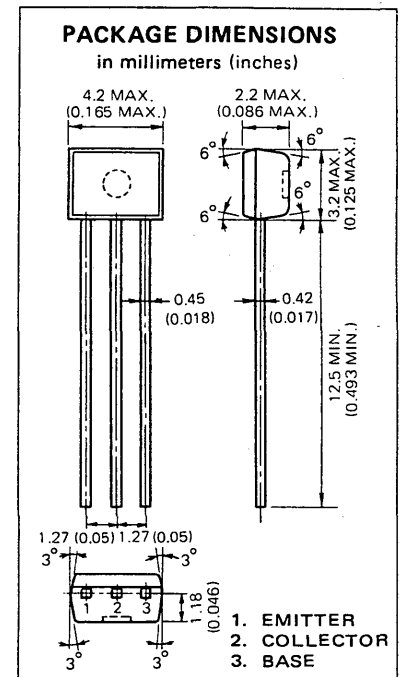


DESCRIPTION The 2SD1020 is designed for use in output stage of portable RADIO and cassette type tape recorder, general purpose applications.

- FEATURES**
- High total power dissipation.
 $P_T = 350$ mW
 - High h_{FE} and low $V_{CE(sat)}$
 h_{FE} ($I_C = 100$ mA) : 200 TYP.
 $V_{CE(sat)}$ (700 mA) : 0.20 V TYP.
 - Complementary to the NEC 2SB810 PNP transistor.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures	
Storage Temperature -55 to + 150 °C
Junction Temperature +150 °C Maximum
Maximum Power Dissipation ($T_a = 25$ °C)	
Total Power Dissipation 350 mW
Maximum Voltages and Currents ($T_a = 25$ °C)	
V_{CBO} Collector to Base Voltage 30 V
V_{CEO} Collector to Emitter Voltage 25 V
V_{EBO} Emitter to Base Voltage 5.0 V
I_C Collector Current 700 mA
I_B Base Current 150 mA



ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}^*	DC Current Gain	110	200	400	—	$V_{CE}=1.0$ V, $I_C=100$ mA
h_{FE2}^*	DC Current Gain	50	140		—	$V_{CE}=1.0$ V, $I_C=700$ mA
C_{ob}	Collector to Base Capacitance		13	25	pF	$V_{CB}=6.0$ V, $I_E=0$, $f=1.0$ MHz
f_T	Gain Bandwidth Product	50	170		MHz	$V_{CE}=6.0$ V, $I_E=10$ mA
V_{BE}^*	Base to Emitter Voltage	600	640	700	mV	$V_{CE}=6.0$ V, $I_C=10$ mA
$V_{CE(sat)}^*$	Collector Saturation Voltage		0.2	0.4	V	$I_C=700$ mA, $I_B=70$ mA
$V_{BE(sat)}^*$	Base Saturation Voltage		0.95	1.2	V	$I_C=700$ mA, $I_B=70$ mA
I_{CBO}	Collector Cutoff Current			100	nA	$V_{CB}=30$ V, $I_E=0$
I_{EBO}	Emitter Cutoff Current			100	nA	$V_{EB}=5.0$ V, $I_C=0$

*Pulsed PW ≤ 350 μ s, duty cycle ≤ 2.0 %

Classification of h_{FE1}

Rank	M	J	H	F	E
Range	110 - 180	135 - 220	170 - 270	200 - 320	250 - 400

h_{FE1} Test Conditions : $V_{CE} = 1.0$ V, $I_C = 100$ mA

TYPICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted)

