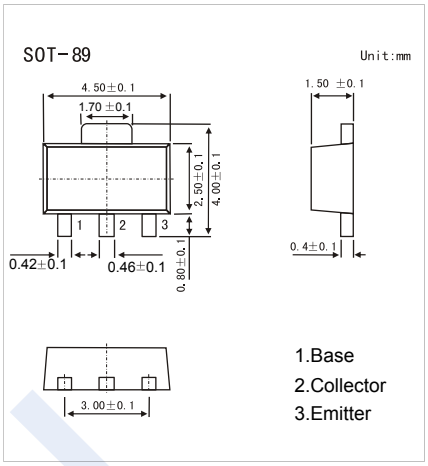
NPN Transistors

2SD1001-HF



■ Features

- High collector saturation voltage.
  $V_{CE(sat)}$ > 80V
- Complimentary to 2SB800-HF
- Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	80	V
Collector - Emitter Voltage	V_{CEO}	80	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	300	mA
Collector Current - Pulse (Note.1)	I_{CP}	500	
Collector Power Dissipation	P_C	2	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: Pw ≤ 100ms,duty cycle ≤ 50%

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	80			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, R_{BE}= ∞	80			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μA, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 80 V , I_E= 0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0			0.1	
Collector-emitter saturation voltage (Note.1)	$V_{CE(sat)}$	I_C=300 mA, I_B=30mA		0.15	0.6	V
Base - emitter saturation voltage (Note.1)	$V_{BE(sat)}$	I_C=300 mA, I_B=30mA		0.86	1.2	
Base - emitter voltage (Note.1)	V_{BE}	V_{CE}= 6V, I_C= 10mA	600	645	700	mV
DC current gain (Note.1)	h_{FE}	V_{CE}= 1V, I_C= 50mA	90	200	400	
		V_{CE}= 2V, I_C= 300mA	30	80		
Collector output capacitance	C_{ob}	V_{CB}= 6V, I_E=0,f=1MHz		7		pF
Transition frequency	f_T	V_{CE}= 6V, I_E= -10mA		140		MHz

Note.1: Pulse test : Pulse width ≤350μs,Duty Cycle≤2%.

■ Classification of $h_{fe(1)}$

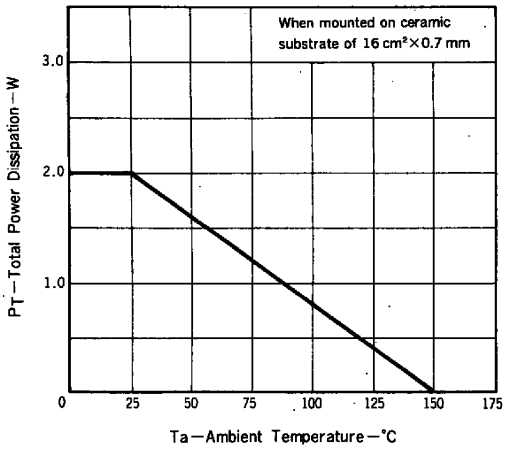
Type	2SD1001-M-HF	2SD1001-L-HF	2SD1001-K-HF
Range	90-180	135-270	200-400
Marking	EM F	EL F	EK F

NPN Transistors

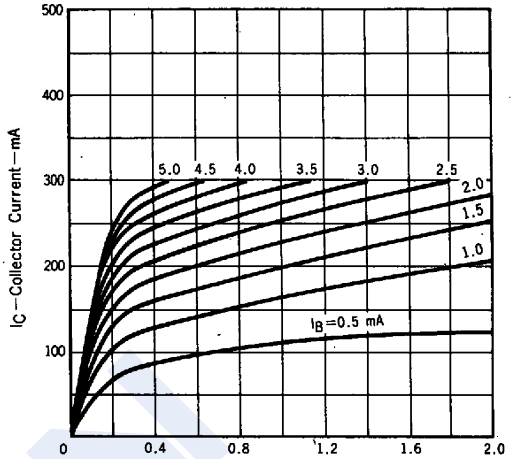
2SD1001-HF

■ Typical Characterisitics

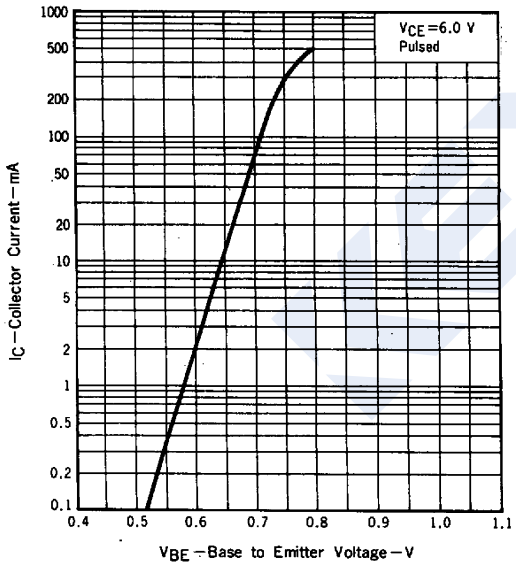
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



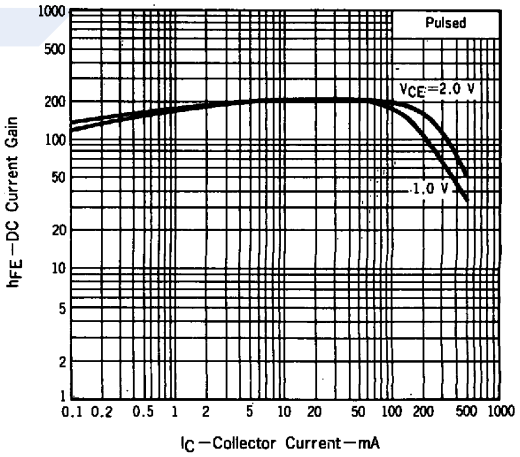
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



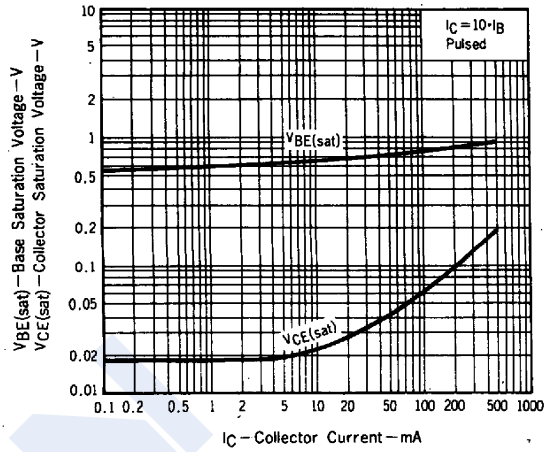
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



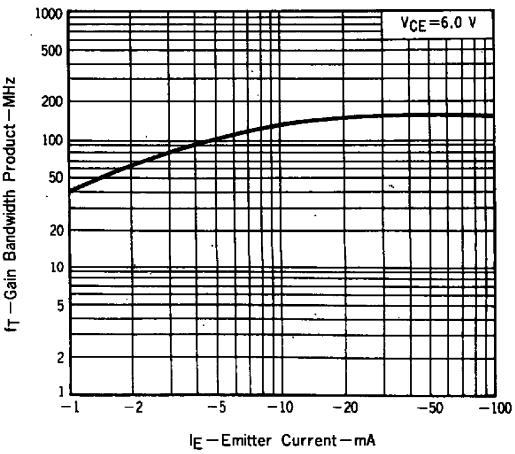
DC CURRENT GAIN vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



NPN Transistors

2SD1001-HF

■ Typical Characterisitics

