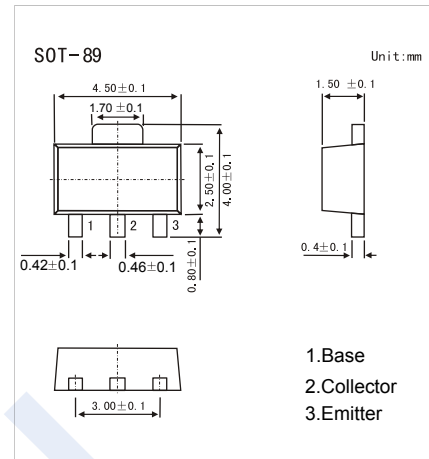


NPN Transistors

2SD1000-HF

■ Features

- Low collector saturation voltage.
 $V_{CE(sat)} < 0.4V$ ($I_C=500mA, I_B=50mA$)
- Complimentary to 2SB799-HF
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	60	V
Collector - Emitter Voltage	V_{CEO}	50	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	700	mA
Collector Current - Pulse (Note.1)	I_{CP}	1	A
Collector Power Dissipation	P_C	2	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: $P_w \leq 100ms$, duty cycle $\leq 50\%$

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = 100 \mu A, I_E = 0$	60			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = 1 mA, R_{BE} = \infty$	50			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu A, I_C = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 60 V, I_E = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			0.1	
Collector-emitter saturation voltage (Note.1)	$V_{CE(sat)}$	$I_C = 500 mA, I_B = 50mA$		0.12	0.4	V
Base - emitter saturation voltage (Note.1)	$V_{BE(sat)}$	$I_C = 500 mA, I_B = 50mA$		0.9	1.2	
Base - emitter voltage (Note.1)	V_{BE}	$V_{CE} = 6V, I_C = 10mA$	600	635	700	mV
DC current gain (Note.1)	h_{FE}	$V_{CE} = 1V, I_C = 100mA$	90	200	400	
		$V_{CE} = 1V, I_C = 500mA$	50	150		
Collector output capacitance	C_{ob}	$V_{CB} = 6V, I_E = 0, f = 1MHz$		13		pF
Transition frequency	f_T	$V_{CE} = 6V, I_E = -10mA$		110		MHz

Note.1: Pulse test : Pulse width $\leq 350\mu s$, Duty Cycle $\leq 2\%$.

■ Classification of $h_{FE}(1)$

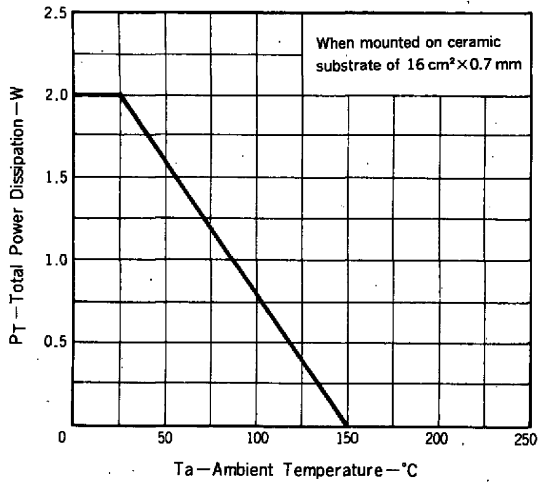
Type	2SD1000- M-HF	2SD1000- L-HF	2SD1000- K-HF
Range	90-180	135-270	200-400
Marking	LM _F	LL _F	LK _F

NPN Transistors

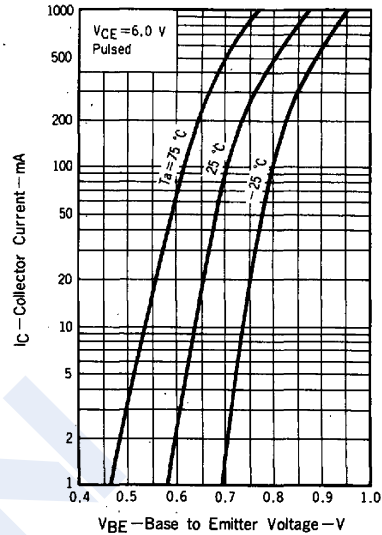
2SD1000-HF

■ Typical Characteristics

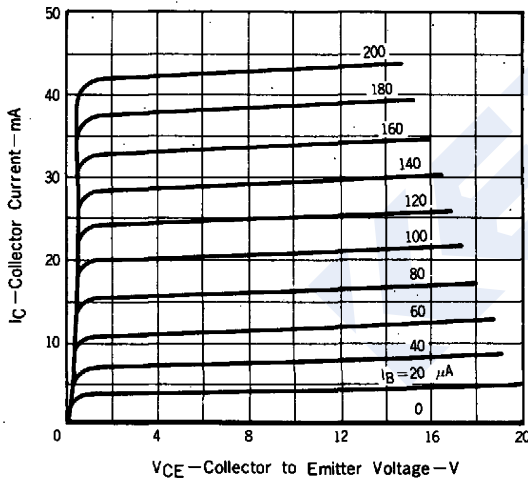
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



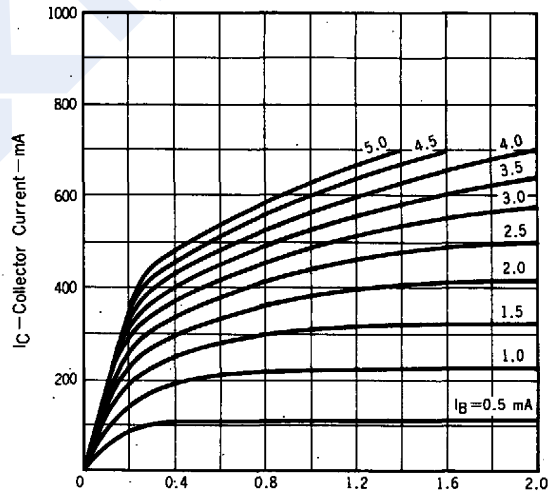
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



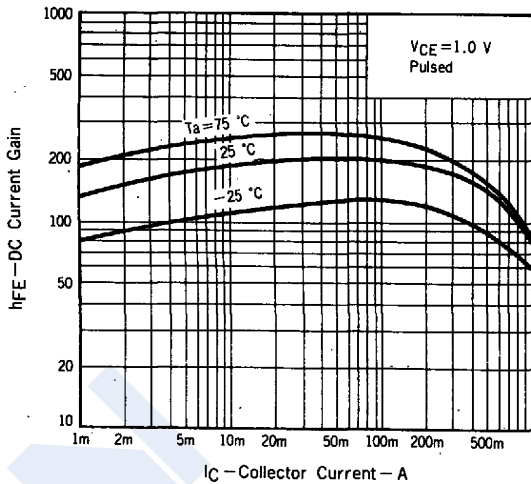
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



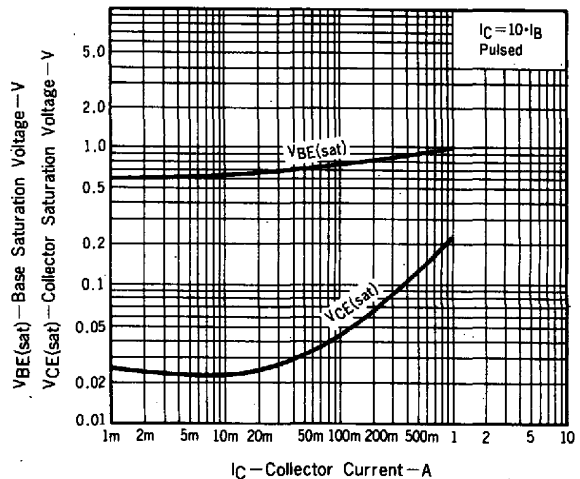
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



DC CURRENT GAIN vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



NPN Transistors

2SD1000-HF

■ Typical Characteristics

