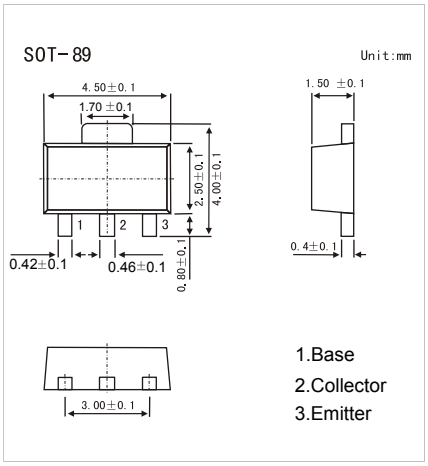
PNP Transistors

2SB1114



■ Features

- High Dc current gain h_{FE}=135 to 600
- Low VCE(sat) $V_{CE(sat)}$=-0.3V at 1.5A
- Complementary to 2SD1614

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-20	V
Collector - Emitter Voltage	V_{CEO}	-20	
Emitter - Base Voltage	V_{EBO}	-6	
Collector Current - Continuous	I_C	-2	A
Collector current -Pulse	I_{CP}	-3	
Collector Power Dissipation	P_C	2	W
Junction Temperature	T_J	150	℃
Storage Temperature range	T_{stg}	-55 to 150	

■ 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	-20			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= -1 mA, I_B=0	-20			
Emitter - base breakdown voltage	V_{EBO}	I_E= -100 μ A, I_C=0	-6			
Collector-base cut-off current	I_{CBO}	V_{CB}= -16V , I_E=0			-0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= -6V , I_C=0			-0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-1.5 A, I_B=-50mA		-0.3	-0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=-1.5 A, I_B=-50mA		-1.05	-1.2	
Base - emitter voltage	V_{BE}	V_{CE}= -6V, I_C= -100 mA	-0.65	-0.68	-0.75	
DC current gain	h_{FE}	V_{CE}= -2V, I_C= -100 mA	135	350	600	
		V_{CE}= -2V, I_C= -2 A	40			
Collector output capacitance	C_{ob}	V_{CB} = –10V, I_E = 0, f = 1MHz		60		pF
Transition frequency	f_T	V_{CE}= -10V, I_E= 50mA		180		MHz

■ Classification of $h_{fe(1)}$

Type	2SB1114-M	2SB1114-L	2SB1114-K
Range	135-270	200-400	300-600
Marking	ZM	ZL	ZK

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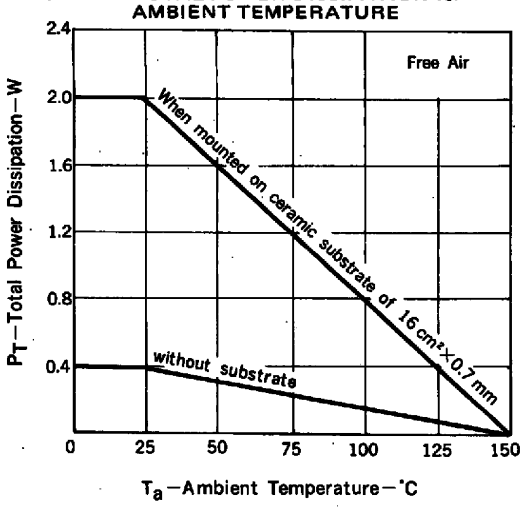
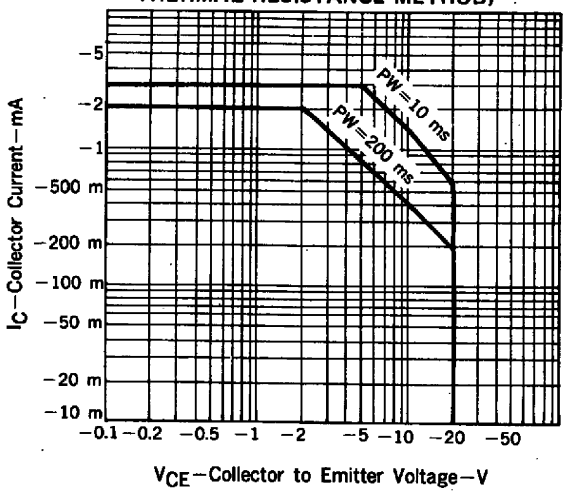
■ Typical Characterisitics

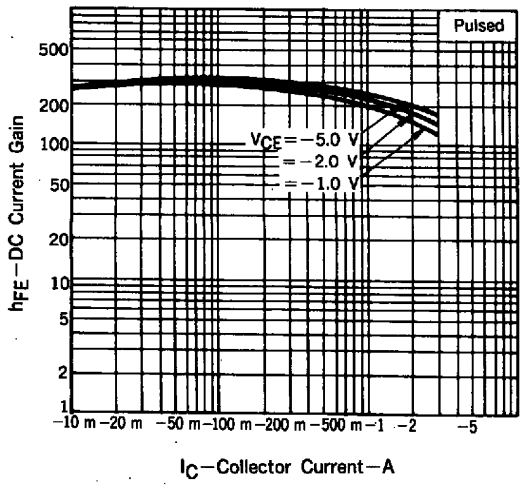
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



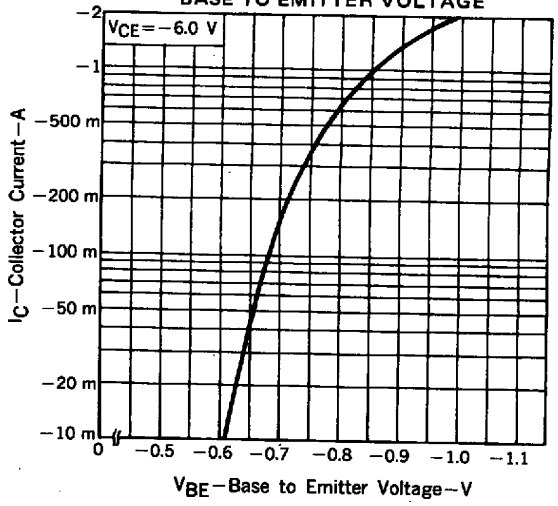
SAFE OPERATING AREA (TRANSIENT THERMAL RESISTANCE METHOD)



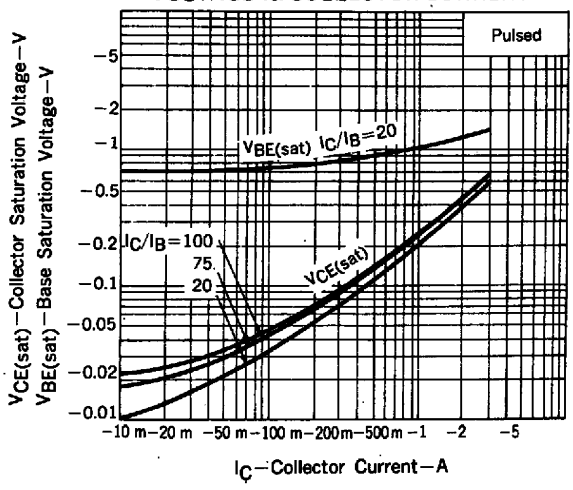
DC CURRENT GAIN vs. COLLECTOR CURRENT



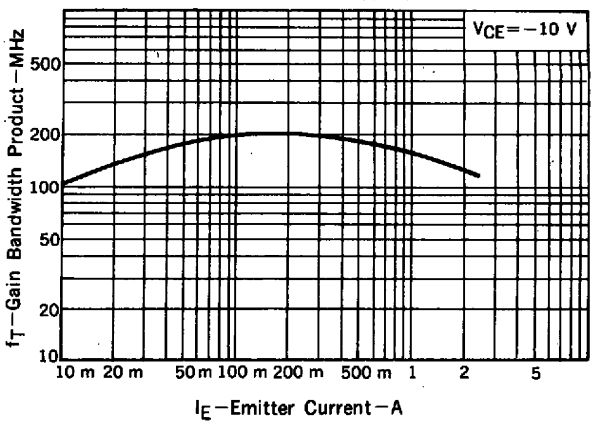
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT GAIN



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■ Typical Characterisitics