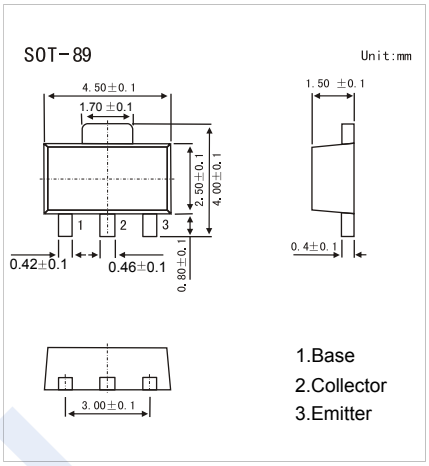
NPN Transistors

2SD1614



■ Features

- High DC Current Gain:h_{FE} 135 to 600.
- Low $V_{CE(sat)}$
- Complementary to 2SB1114

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	40	V
Collector - Emitter Voltage	V_{CEO}	20	
Emitter - Base Voltage	V_{EBO}	6	
Collector Current - Continuous	I_C	2	A
Collector Current - Pulse (Note.1)	I_{CP}	3	
Collector Power Dissipation	P_C	2	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1:PW ≤ 10 ms, Duty cycle ≤ 20%.

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 uA, I_E= 0	40			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	20			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 uA, I_C= 0	6			
Collector-base cut-off current	I_{CBO}	V_{CB}= 40 V , 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=2 A, I_B=50 mA		0.3	0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=2 A, I_B=50 mA		0.95	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		28		pF
Transition frequency	f_T	V_{CE}= 10V, I_E= -50mA		200		MHz

■ Classification of $h_{fe(1)}$

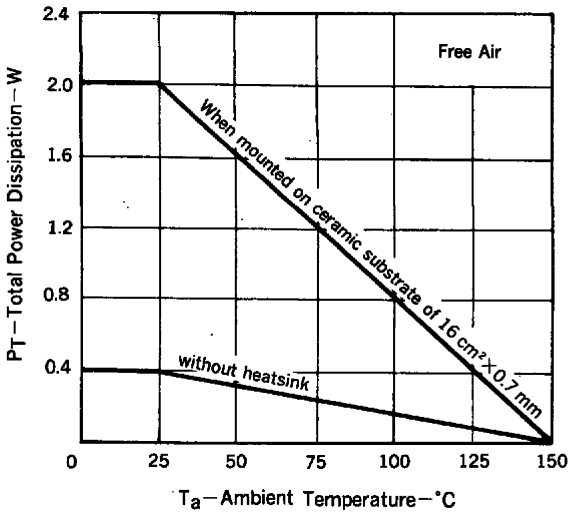
Type	2SD1614-M	2SD1614-L	2SD1614-K
Range	135-270	200-400	300-600
Marking	XM	XL	XK

NPN Transistors

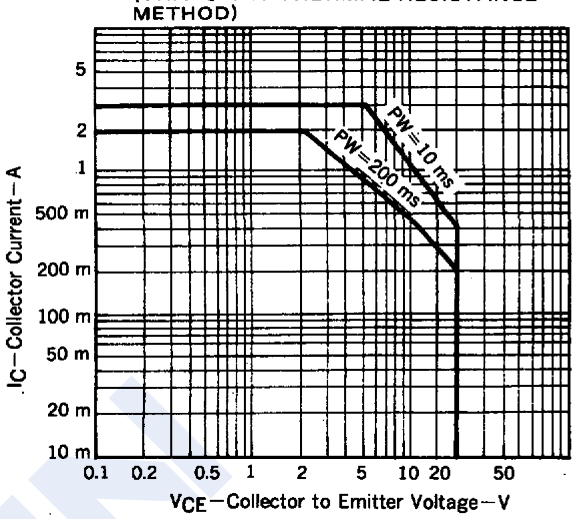
2SD1614

■ Typical Characterisitics

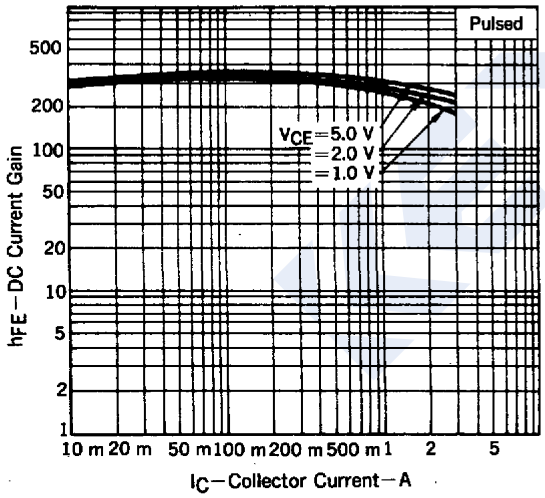
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



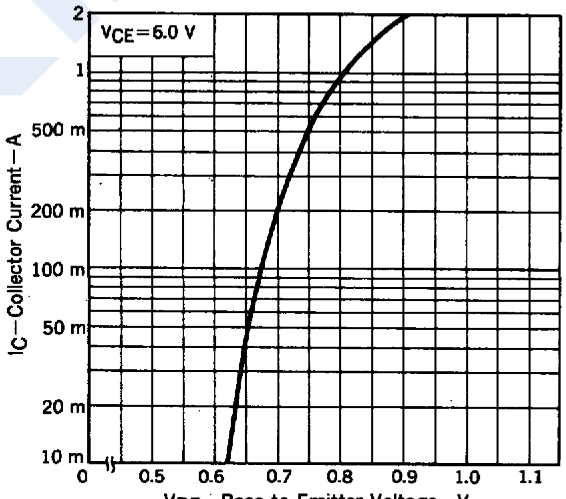
SAFE OPERATING AREA (TRANSIENT THERMAL RESISTANCE METHOD)



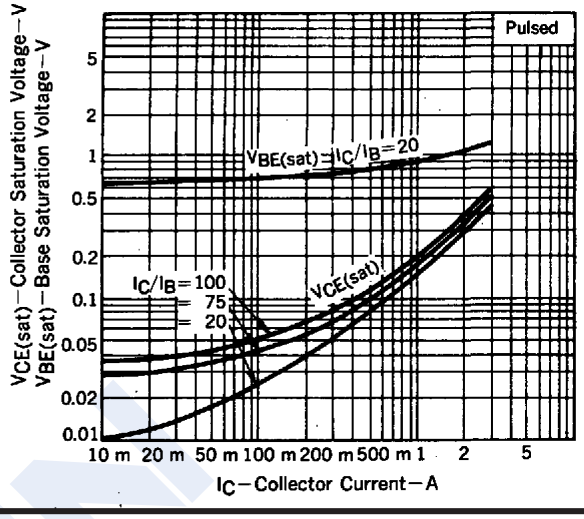
DC CURRENT GAIN vs. COLLECTOR CURRENT



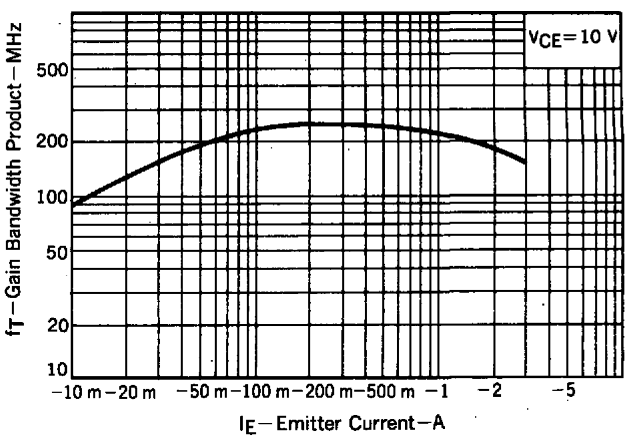
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



NPN Transistors

2SD1614

■ Typical Characterisitics

