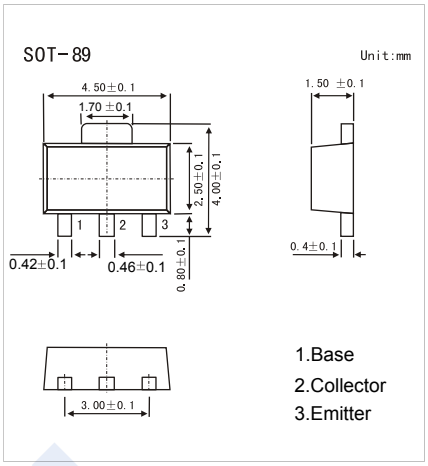
NPN Transistors

2SC4942



■ Features

- High voltage
- Fast switching speed
- Complementary transistor with the 2SA1871

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	600	V
Collector - Emitter Voltage	V_{CEO}	600	
Emitter - Base Voltage	V_{EBO}	7	
Collector Current - Continuous	I_C	1	A
Collector current -pulse (Note.1)	I_{CP}	2	
Collector Power Dissipation	P_C	2	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1 : Pulse :PW ⩽ 10ms,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	600			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	600			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μA, I_C= 0	7			
Collector-base cut-off current	I_{CBO}	V_{CB}= 600V , I_E= 0			10	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 7V , I_C=0			10	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=400 mA, I_B=80mA		0.35	1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=400 mA, I_B=80mA		0.9	1.2	
DC current gain	h_{FE}	V_{CE}= 5V, I_C= 100mA	30	55	120	
		V_{CE}= 5V, I_C= 500mA	5	10		
Turn-on time	t_{on}	I_C = 0.5 A, V_{CC}= 250 V I_{B1} = −I_{B2} = 0.1 A R_L = 500 Ω		0.1	0.5	us
Storage time	t_{stg}			4	5	
Turn-off time	t_{off}			0.2	0.5	
Collector output capacitance	C_{ob}	V_{CB}= 10V, I_E= 0,f=1MHz		15		pF
Transition frequency	f_T	V_{CE}= 5V, I_E= -50mA		30		MHz

■ Classification of $h_{fe(1)}$

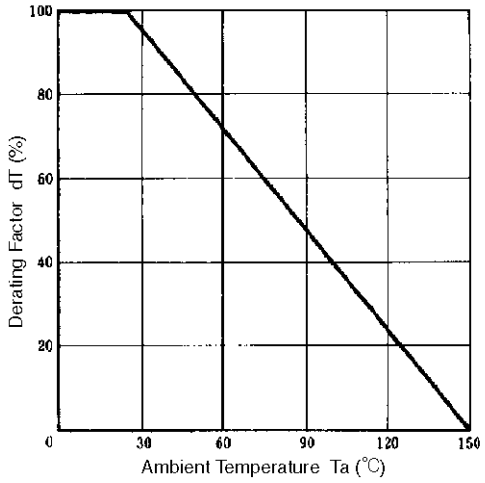
Type	2SC4942-A1	2SC4942-A2	2SC4942-A3
Range	30-60	40-80	60-120
Marking	AA1	AA2	AA3

NPN Transistors

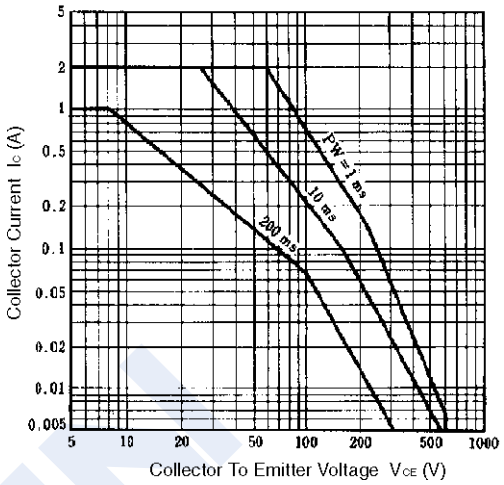
2SC4942

■ Typical Characterisitics

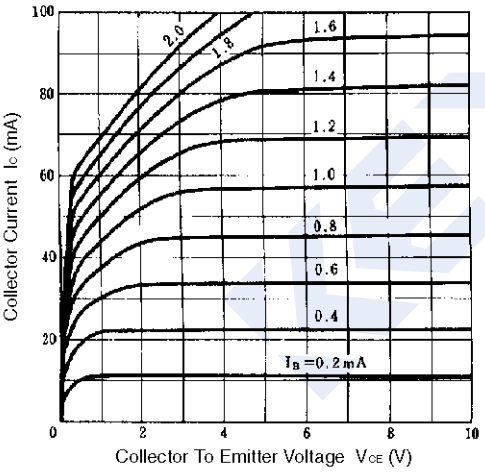
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



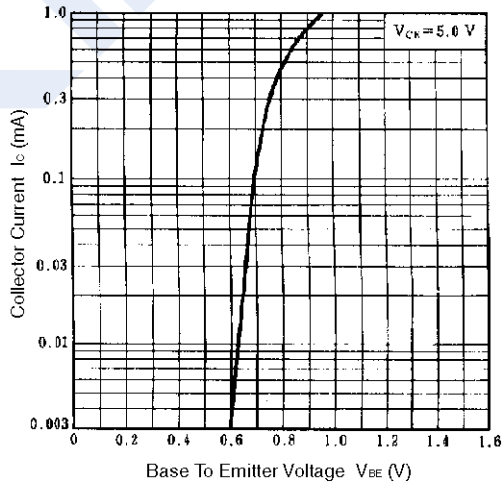
FORWARD BIAS SAFE OPERATING AREA



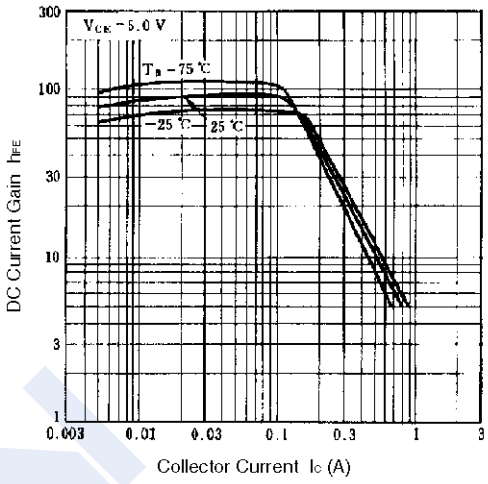
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



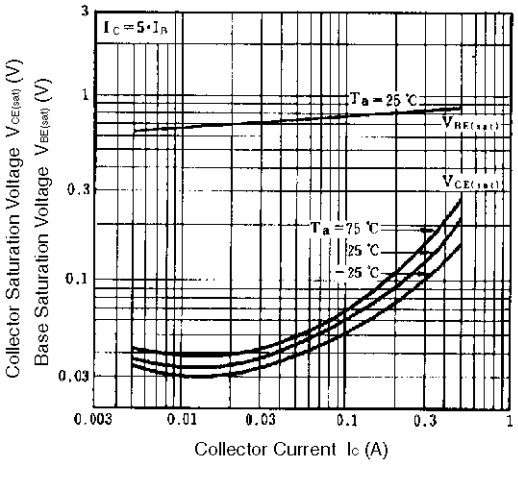
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



DC CURRENT GAIN vs. COLLECTOR CURRENT



COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



NPN Transistors

2SC4942

■ Typical Characterisitics

