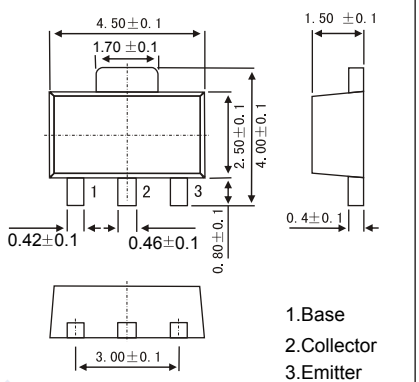
NPN Transistors

2SC2780

SOT-89 Unit:mm



1.Base
2.Collector
3.Emitter

■ Features

- Collector Current Capability I_C=50mA
- Collector Emitter Voltage V_{CEO}=140V
- Complementary to 2SA1173

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	140	V
Collector - Emitter Voltage	V_{CEO}	140	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	50	mA
Collector Current - Pluse (Note.1)	I_{CP}	100	
Collector Power Dissipation	P_C	2	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1 : 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	140			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	140			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 140 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	$V_{CE(sat)}$	I_C=20 mA, I_B=2mA			0.6	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=20 mA, I_B=2mA			1	
Base - emitter voltage	V_{BE}	V_{CE}= 10V, I_C= 10mA	0.65		0.75	
DC current gain	h_{FE}	V_{CE}= 10V, I_C= 1mA	50			
		V_{CE}= 10V, I_C= 10mA	90		400	
Collector output capacitance	C_{ob}	V_{CB}= 10V, I_E= 0,f=1MHz		2.3		pF
Transition frequency	f_T	V_{CE}= 10V, I_E= -10mA		120		MHz

■ Classification of $h_{fe(2)}$

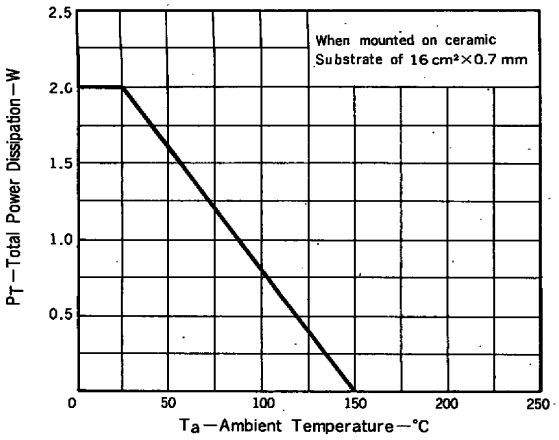
Type	2SC2780-M	2SC2780-L	2SC2780-K
Range	90-180	135-270	200-400
Marking	NM	NL	NK

NPN Transistors

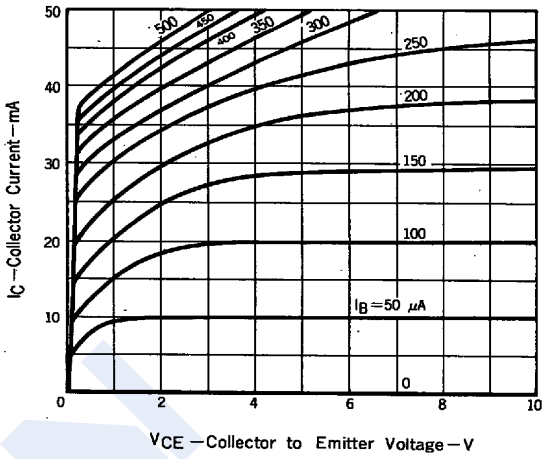
2SC2780

■ Typical Characterisitics

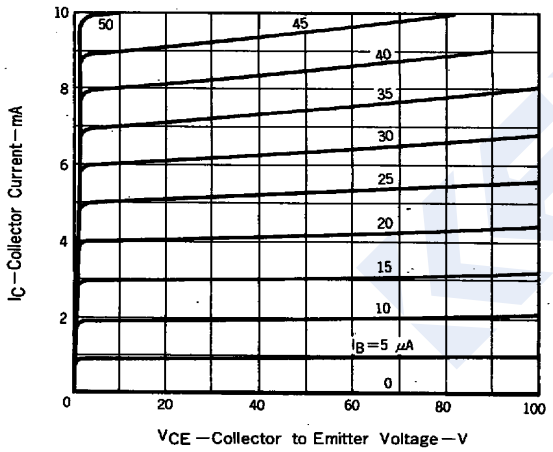
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



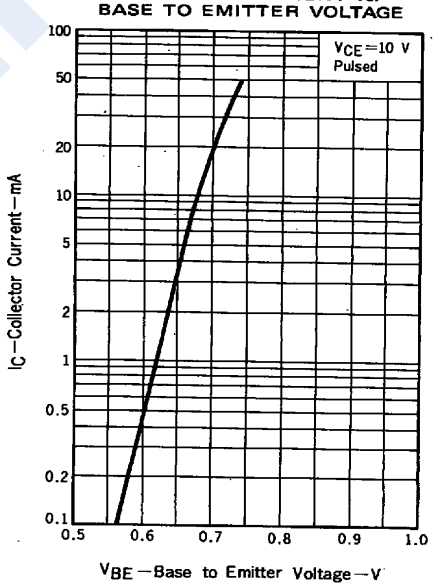
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



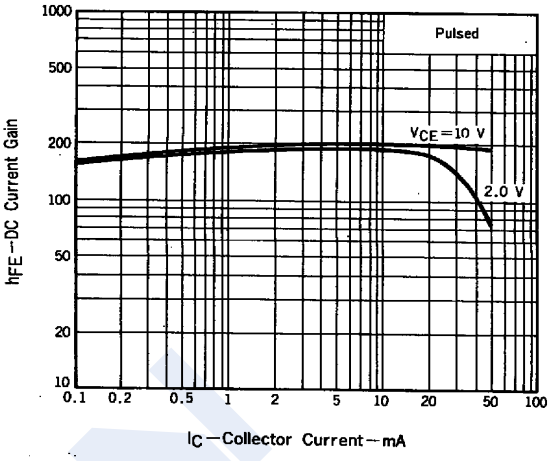
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



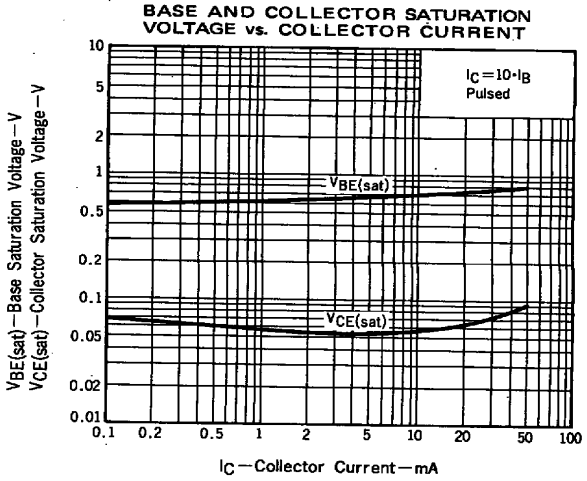
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



DC CURRENT GAIN vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT

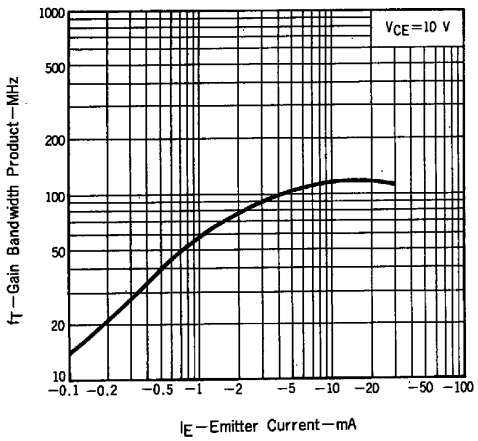


NPN Transistors

2SC2780

■ Typical Characterisitics

GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



INPUT AND OUTPUT CAPACITANCE vs. REVERSE VOLTAGE