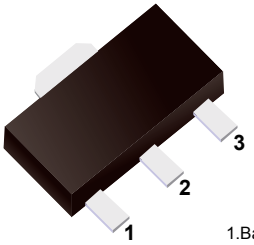
2SA1213

PNP Transistors

■ Features

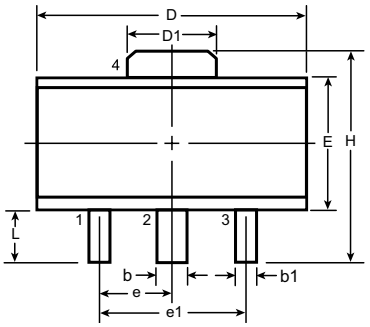
- Low Saturation Voltage: $V_{CE(sat)}$ = -0.5V (max) (I_C = -1A)
- High Speed Switching Time: t_{stg} = 1.0us (typ.)
- Small Flat Package
- P_C = 1 to 2W (mounted on ceramic substrate)
- Complementary to 2SC2873



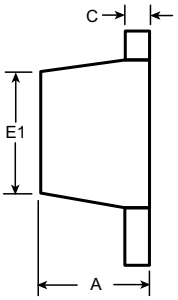
1.Base
2.Collector
3.Emitter

■ **Simplified outline(SOT-89)**

SOT-89 PACKAGE OUTLINE



Top View



Side View

Symbol		A	b	b1	C	D	D1	E	E1	e	e1	H	L
Dimensions (mm)	MIN	1.40	0.44	0.36	0.3	4.40	1.50	2.29	2.00f	1.50 BSC	3.00 BSC	3.94	0.89
	NOM	-	-	-	-	-	-	-	-			-	-
	MAX	1.60	0.56	0.48	0.5	4.60	1.75	2.60	2.29			4.25	1.20

Dimensions in mm

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-50	V
Collector - Emitter Voltage	V_{CEO}	-50	
Emitter - Base Voltage	V_{EBO}	-5	
Collector Current - Continuous	I_C	-2	A
Base Current - Continuous	I_B	-0.4	
Collector Power Dissipation	P_C	500	mW
Junction Temperature	T_J	150	℃
Storage Temperature range	T_{stg}	-55 to 150	

2SA1213

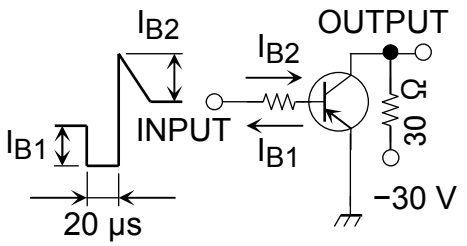
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= -100 μA， I_E=0	-50			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= -10 mA， I_B=0	-50			
Emitter - base breakdown voltage	V_{EBO}	I_E= -100 μ A， I_C=0	-5			
Collector-base cut-off current	I_{CBO}	V_{CB}= -50 V , I_E=0			-100	nA
Emitter cut-off current	I_{EBO}	V_{EB}= -5V , I_C=0			-100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-1 A, I_B=- 50mA			-0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=-1 A, I_B=- 50mA			-1.2	
DC current gain	$h_{FE(1)}$	V_{CE}= -2V, I_C= -0.5A	70		240	
	$h_{FE(2)}$	V_{CE}= -2 V, I_C= -2A	20			
Turn-on time	t_{on}	See Test Circuit.		0.1		us
Storage time	t_{stg}			1		
Fall time	t_f			0.1		
Collector output capacitance	C_{ob}	V_{CB}= -10V, I_E= 0 ,f=1MHz		40		pF
Transition frequency	f_T	V_{CE}= -2V, I_C= -0.5A		120		MHz

■ Classification of $h_{fe(1)}$

Type	2SA1213-O	2SA1213-Y
Range	70-140	120-240
Marking	NO	NY

■ Test Circuit



I_{B1} = 0.05 A,I_{B2} = 0.05 A
DUTY CYCLE ≤ 1%

RATING AND CHARACTERISTIC CURVES (2SA1213)