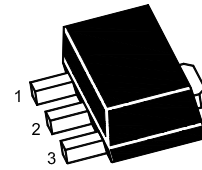
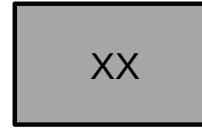




FEATURES

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



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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	$^{\circ}C$
Storage Temperature range	T_{stg}	-55 to 150	

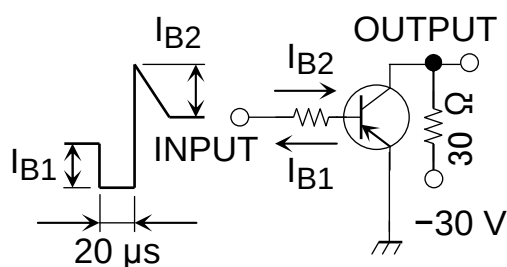
ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CB0}	I _C = -100 μA, I _E =0	-50			V
Collector- emitter breakdown voltage	V _{CE0}	I _C = -10 mA, I _B =0	-50			
Emitter - base breakdown voltage	V _{EB0}	I _E = -100 μA, I _C =0	-5			
Collector-base cut-off current	I _{CB0}	V _{CB} = -50 V, I _E =0			-100	nA
Emitter cut-off current	I _{EB0}	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		320	
	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)}

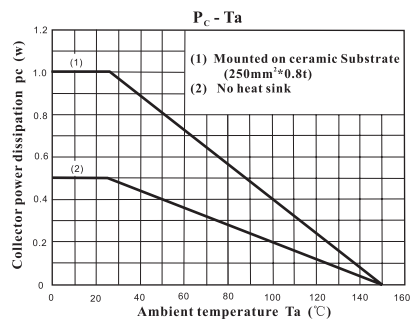
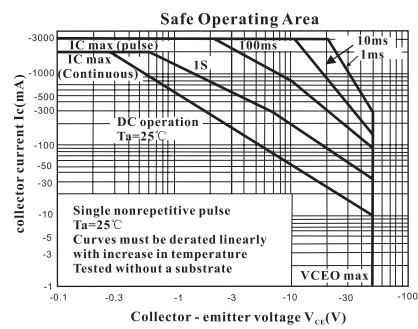
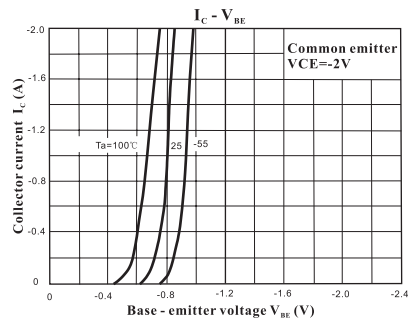
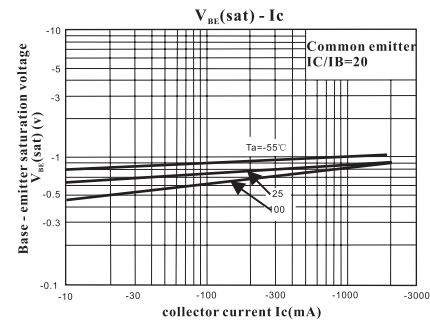
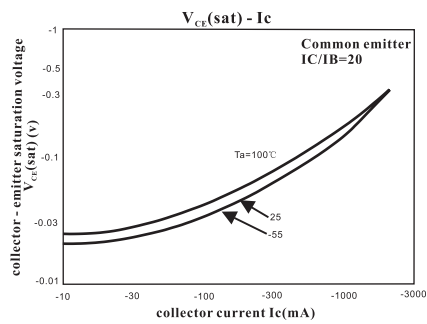
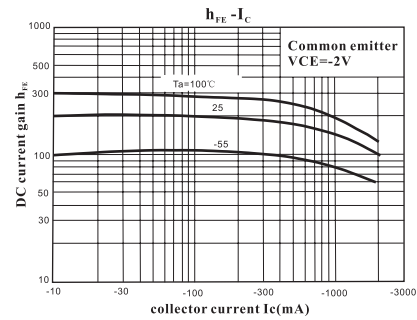
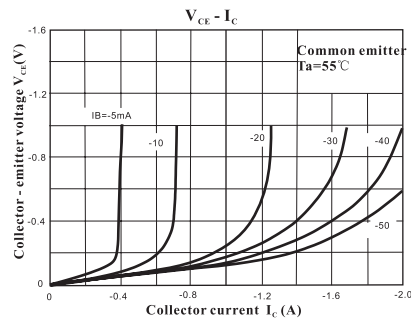
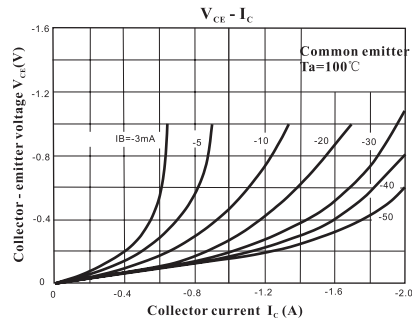
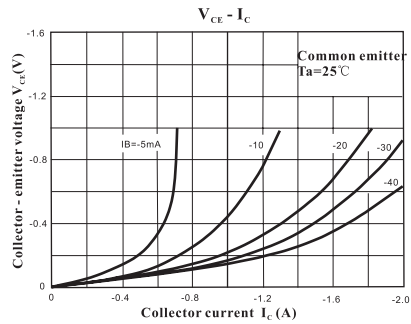
Type	2SA1213-O	2SA1213-Y
Range	70-140	120-320
Marking	NO	NY

■ Test Circuit



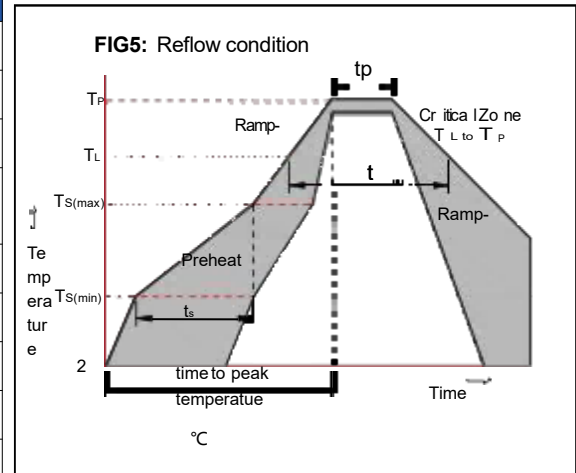
$I_{B1} = 0.05 \text{ A}, I_{B2} = 0.05 \text{ A}$
DUTY CYCLE ≤ 1%

RATING AND CHARACTERISTIC CURVES



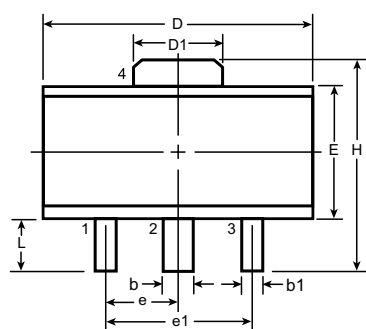
Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

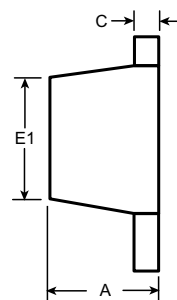


Package Dimensions & Suggested Pad Layout

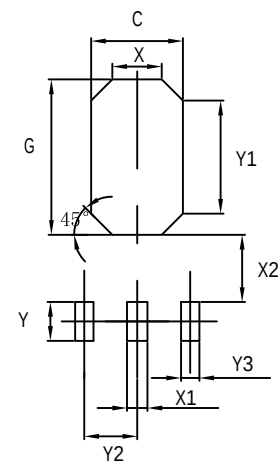
SOT89



Top View



Side View

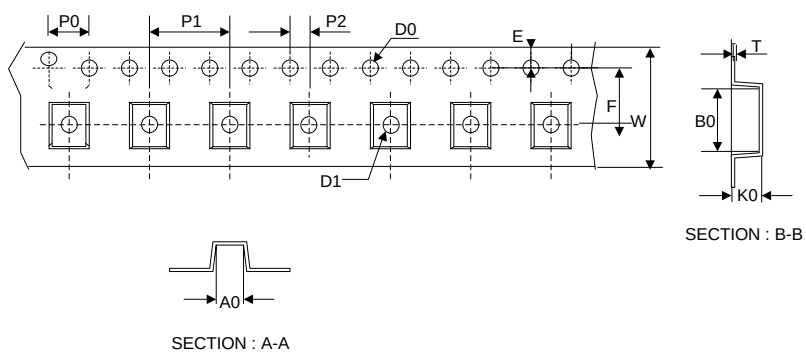


Symbol		A	b	b1	C	D	D1	E	E1	e	e1	H	L
Dimensions (mm)	MIN	1.40	0.44	0.36	0.3	4.40	1.50	2.29	2.00 ²	1.50 BSC	3.00 BSC	3.94	0.89
	NOM	-	-	-	-	-	-	-	-			-	-
	MAX	1.60	0.56	0.48	0.5	4.60	1.75	2.60	2.29			4.25	1.20

Dimensions	Value (in mm)
C	2.50
G	3.60
X	1.40
X1	0.90
X2	0.90
Y	1.40
Y1	2.60
Y2	1.50
Y3	0.90

Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	8.00±0.20
P2	2.00±0.20
D0	1.60±0.20
D1	1.60±0.20
E	1.75±0.20
F	7.50±0.15
W	16.00±0.20
A0	6.30±0.20
B0	8.25±0.20
K0	2.60±0.20
T	0.23±0.10
D2	180.0±5.0
D3	60Min.
D4	R32.0±2.0
G	R86.5±2.0
H	R30.0±2.0
I	13.0±2.0
W1	13.20±2.0
W2	16.50±2.0
Quantity: 1000PCS	

13" Reel

