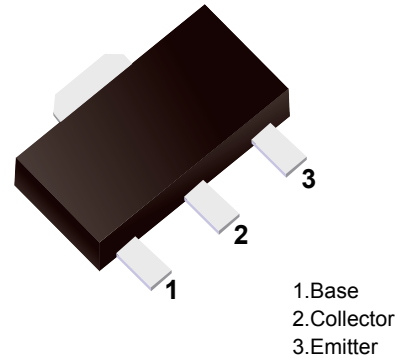


■ PNP Transistors



■ Simplified outline(SOT-89)

■ 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

■ Absolute Maximum Ratings $T_a = 25^\circ C$

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	

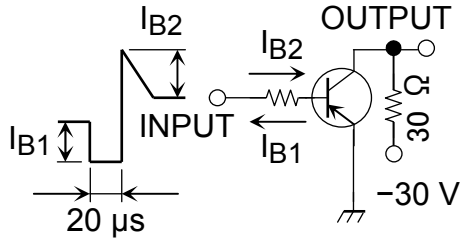
■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_c = -100 \mu A, I_E = 0$	-50			V
Collector- emitter breakdown voltage	V_{CEO}	$I_c = -10 mA, I_B = 0$	-50			
Emitter - base breakdown voltage	V_{EBO}	$I_E = -100 \mu A, I_c = 0$	-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	
	$h_{FE(2)}$	$V_{CE} = -2V, I_c = -2A$	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 $h_{FE(1)}$

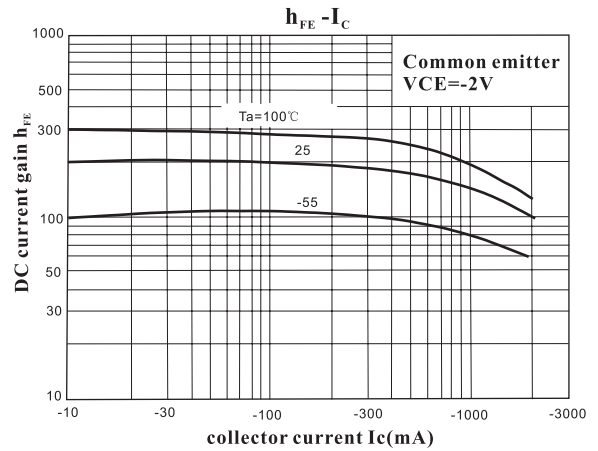
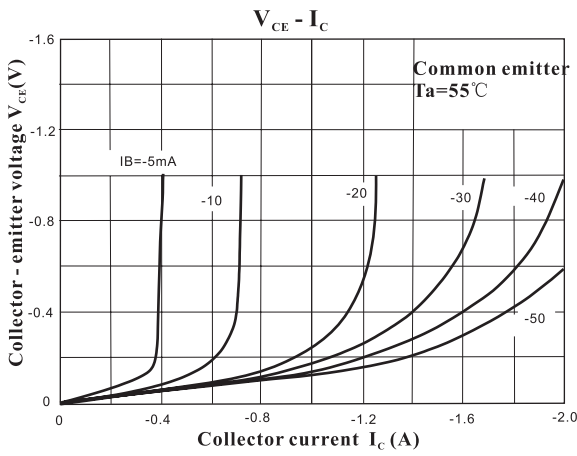
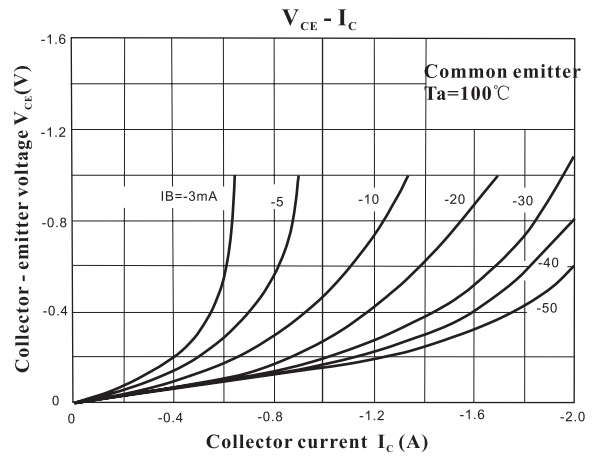
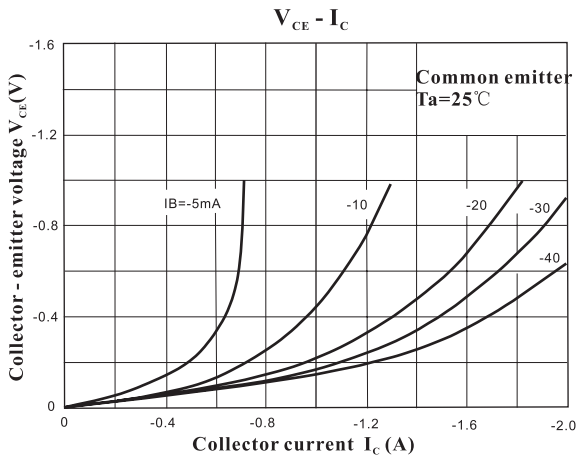
Type	2SA1213-O	2SA1213-Y
Range	70-140	120-240
Marking	NO	NY

■ Test Circuit

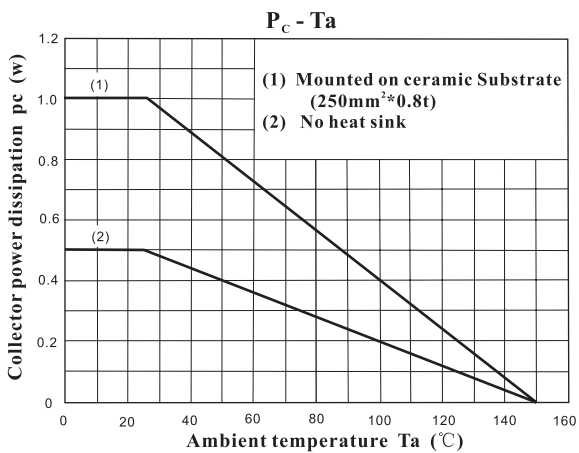
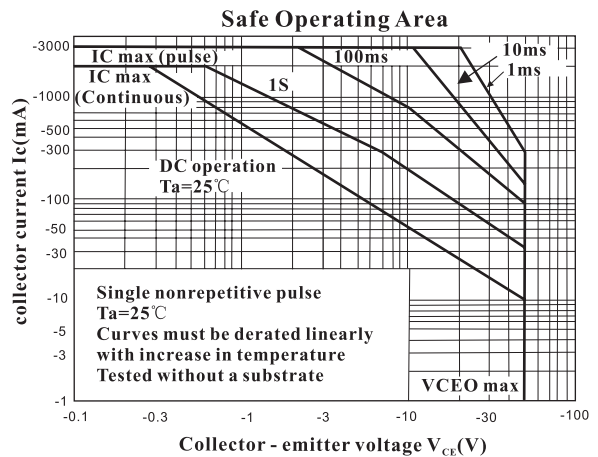
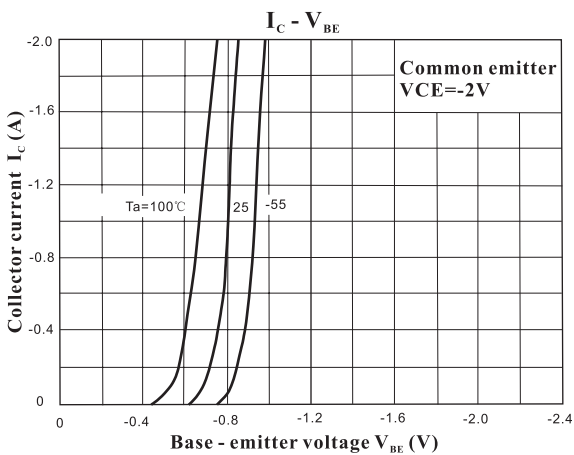
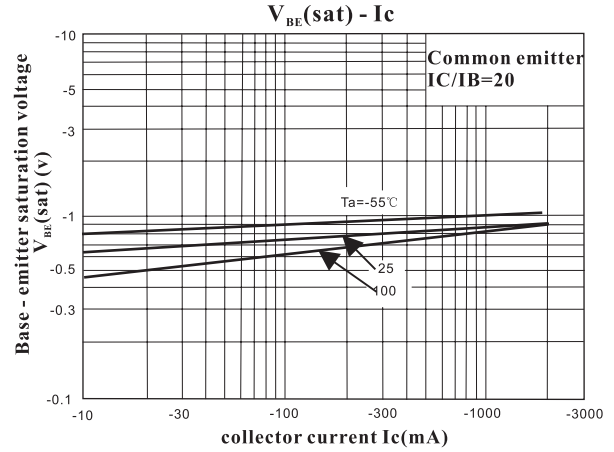
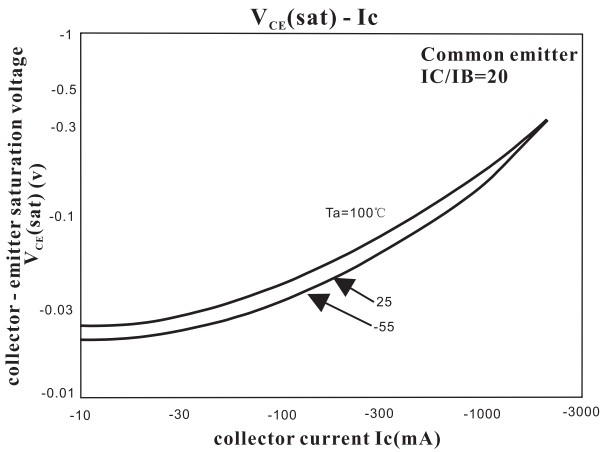


$I_{B1} = 0.05 \text{ A}, I_{B2} = 0.05 \text{ A}$
DUTY CYCLE $\leq 1\%$

■ Typical Characteristics

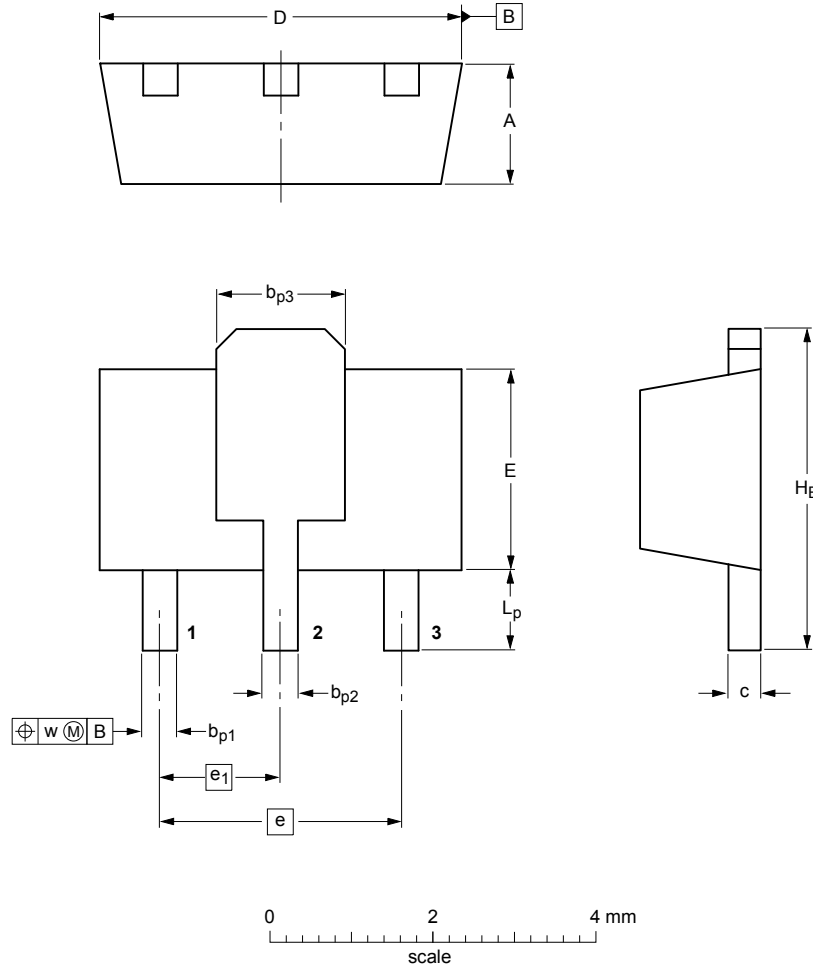


■ Typical Characteristics



Package Outline

SOT-89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _{p1}	b _{p2}	b _{p3}	c	D	E	e	e ₁	H _E	L _p	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-89	Tape/Reel, 7" reel	1000	EIA-481-1

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