



**THE DATASHEET OF  
2SA1213-Y-TP**





Micro Commercial Components



Micro Commercial Components  
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2SA1213-O

2SA1213-Y

## Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Low Saturation voltage:  $V_{CE(sat)}=0.5V(max.)(I_C=1.0A)$
- Small flat package
- $P_C=1.0$  to  $2.0W$ (mounted on ceramic substrate)
- High Speed Switching Time :  $t_{stg} = 1.0\mu s$ (typ.)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

## Maximum Ratings

Symbol	Rating	Rating	Unit
$V_{CEO}$	Collector-Emitter Voltage	-50	V
$V_{CBO}$	Collector-Base Voltage	-50	V
$V_{EBO}$	Emitter-Base Voltage	-5.0	V
$I_C$	Collector Current	-2.0	A
$I_B$	Base Current	-0.4	A
$P_C$	Collector power dissipation	0.5 1.0*	W
$T_J$	Junction Temperature	150	°C
$T_{STG}$	Storage Temperature	-55 to +150	°C

\* Mounted on ceramic substrate (250mm<sup>2</sup> x 0.8t)

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_C=10mA_{dc}, I_B=0$ )	-50	---	---	Vdc
$I_{CBO}$	Collector-Base Cutoff Current ( $V_{CB}=50V_{dc}, I_E=0$ )	---	---	-0.1	$\mu A_{dc}$
$I_{EBO}$	Emitter-Base Cutoff Current ( $V_{EB}=5.0V_{dc}, I_C=0$ )	---	---	-0.1	$\mu A_{dc}$

## ON CHARACTERISTIC

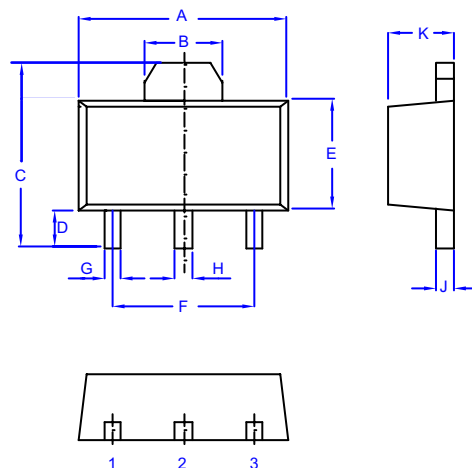
$h_{FE(1)}$	DC Current Gain ( $I_C=0.5A_{dc}, V_{CE}=2.0V_{dc}$ )	70	---	240	---
$h_{FE(2)}$	DC Current Gain * ( $I_C=2.0A_{dc}, V_{CE}=2.0V_{dc}$ )	20	---	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=1.0A_{dc}, I_B=0.05A_{dc}$ )	---	---	-0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=1.0A_{dc}, I_B=0.05A_{dc}$ )	---	---	-1.2	Vdc
$f_T$	Transition Frequency ( $V_{CE}=2.0V_{dc}, I_C=0.5A_{dc}$ )	100	120	---	MHz
$C_{ob}$	Collector output capacitance ( $V_{CB}=10V_{dc}, f=1.0MHz$ )	---	40	---	pF

## CLASSIFICATION OF $h_{FE(1)}$

Rank	O	Y
Range	70-140	120-240
Marking	NO	NY

## PNP Silicon Epitaxial Transistors

## SOT-89

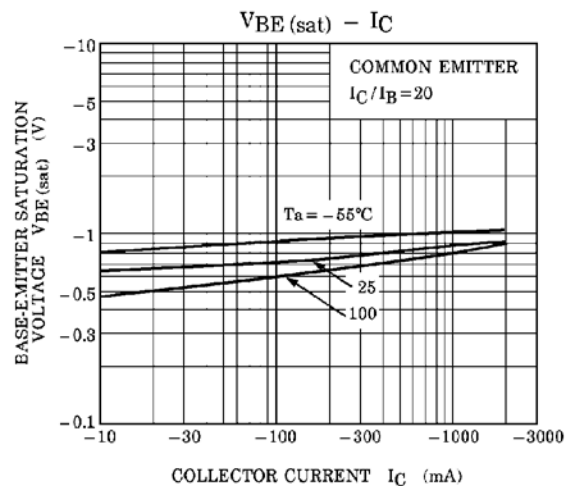
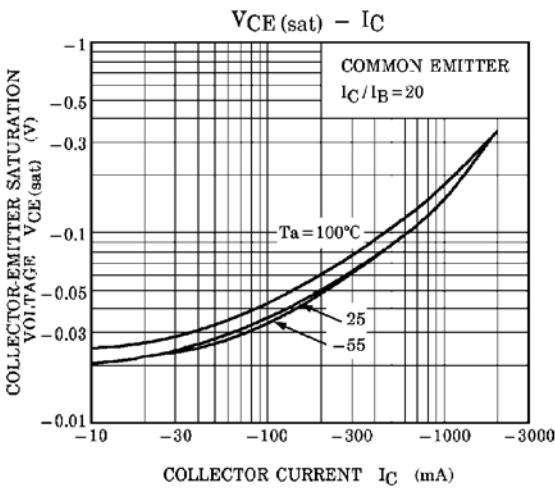
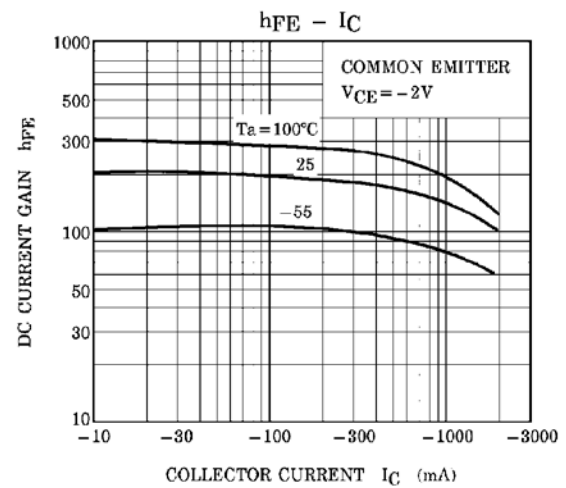
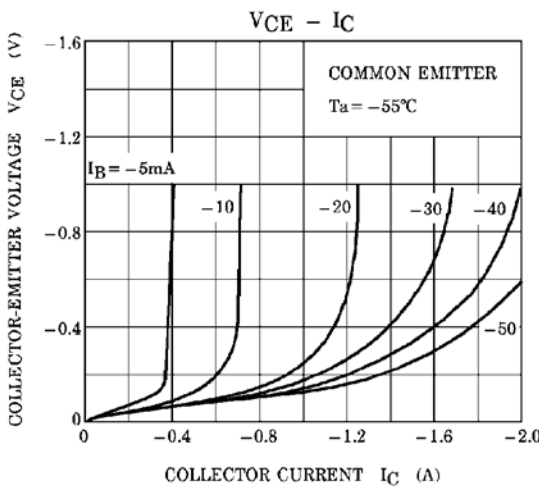
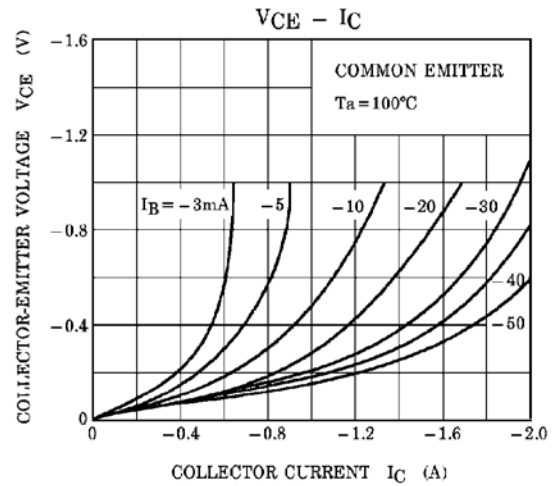
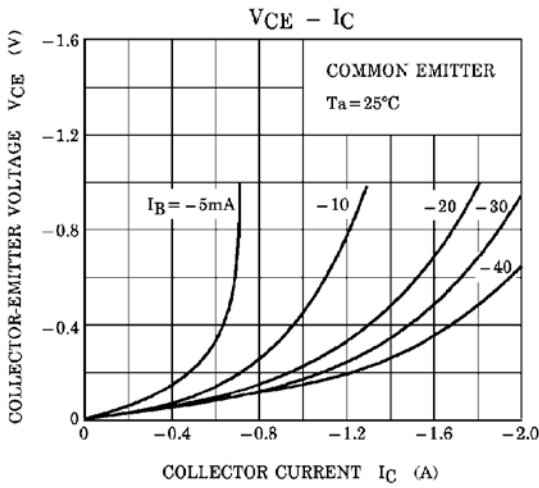


1. Base
2. Collector
3. Emitter

DIM	DIMENSIONS				NOTES
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.173	.181	4.39	4.60	
B	.063	.071	1.60	1.80	
C	.154	.165	3.91	4.19	
D	.031	.039	0.80	1.00	
E	.092	.100	2.34	2.54	
F	.118	----	3.00	----	TYP
G	.013	.019	0.33	0.48	
H	.015	.021	0.38	0.53	
J	.015	.016	0.38	0.41	
K	.055	.063	1.40	1.60	

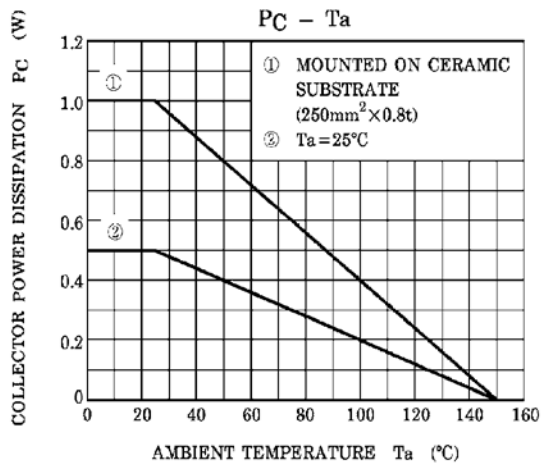
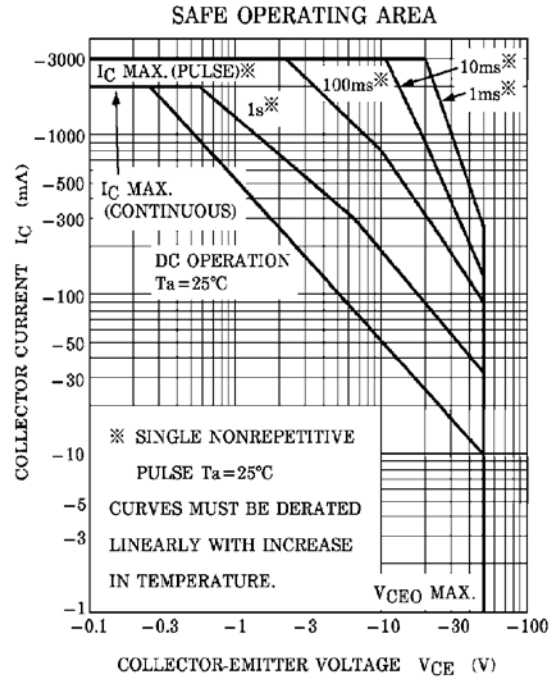
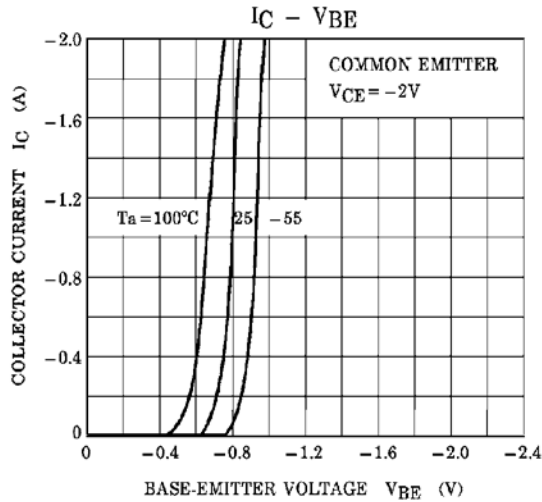
Typical Characteristic

2SA1213



# Typical Characteristics

# 2SA1213





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### Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 1Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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