



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

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 (250mm² x 0.8t)

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=10mA$, $I_B=0$)	-50	---	---	Vdc
I_{CBO}	Collector-Base Cutoff Current ($V_{CB}=50Vdc$, $I_E=0$)	---	---	-0.1	μA
I_{EBO}	Emitter-Base Cutoff Current ($V_{EB}=5.0Vdc$, $I_C=0$)	---	---	-0.1	μA

ON CHARACTERISTIC

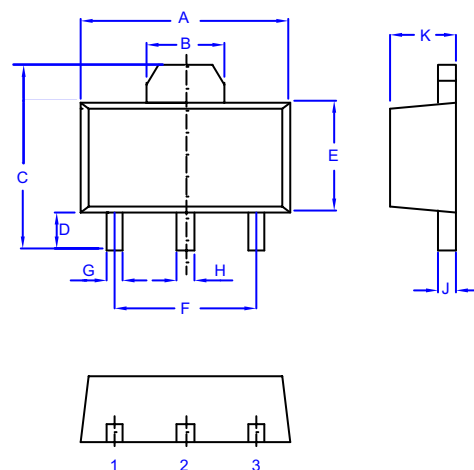
$h_{FE(1)}$	DC Current Gain ($I_C=0.5A$, $V_{CE}=2.0Vdc$)	70	---	240	---
$h_{FE(2)}$	DC Current Gain * ($I_C=2.0A$, $V_{CE}=2.0Vdc$)	20	---	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=1.0A$, $I_B=0.05A$)	---	---	-0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=1.0A$,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

CLASSIFICATION OF $h_{FE(1)}$

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

PNP Silicon Epitaxial Transistors

SOT-89

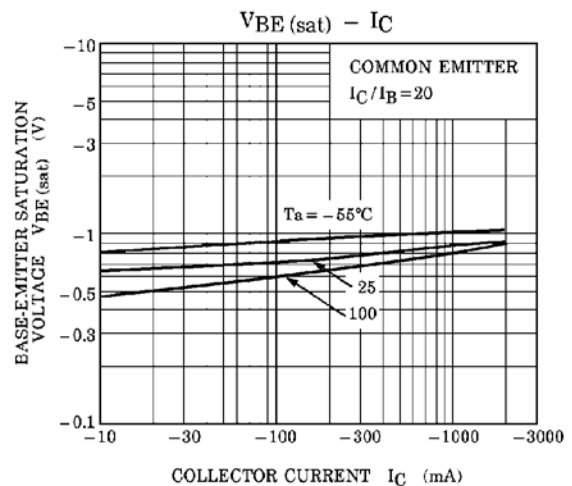
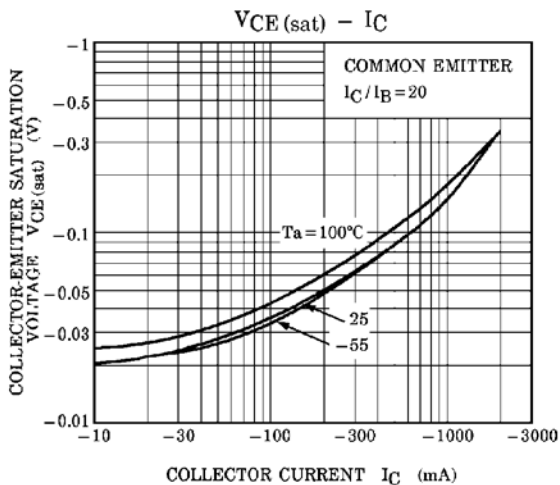
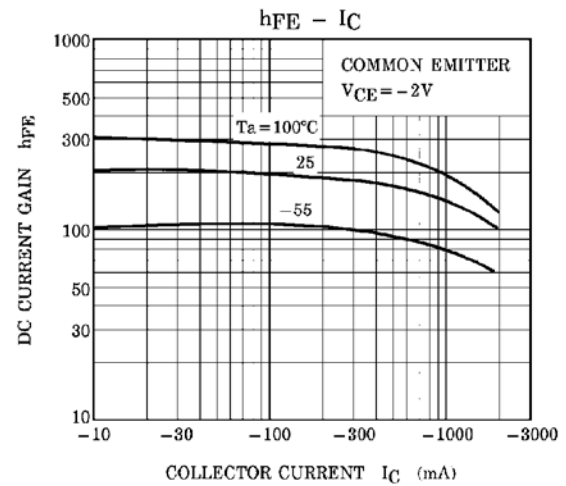
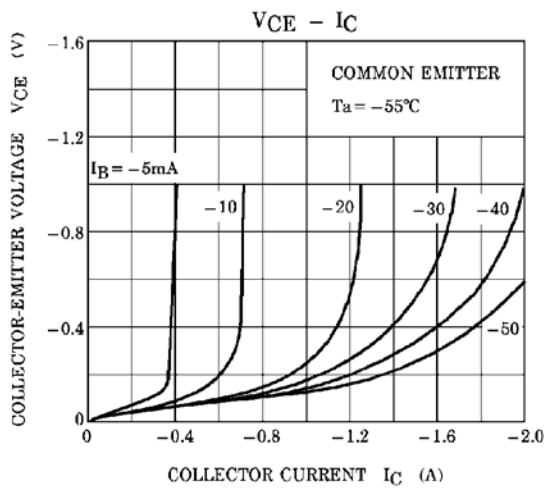
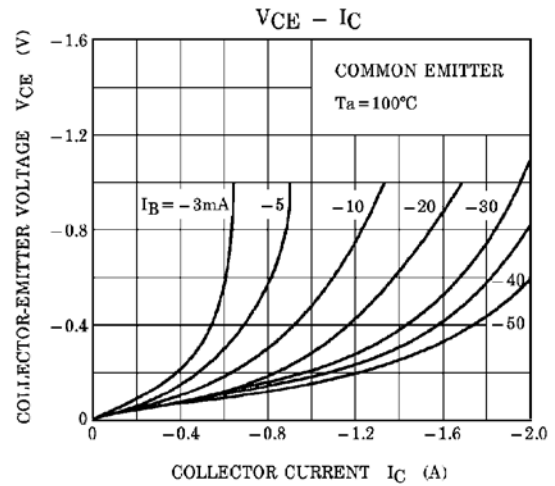
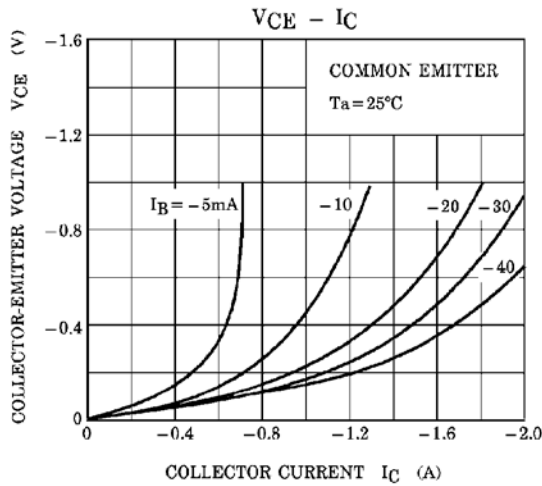


1. Base
2. Collector
3. Emitter

DIM	INCHES		MM		NOTES
	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	

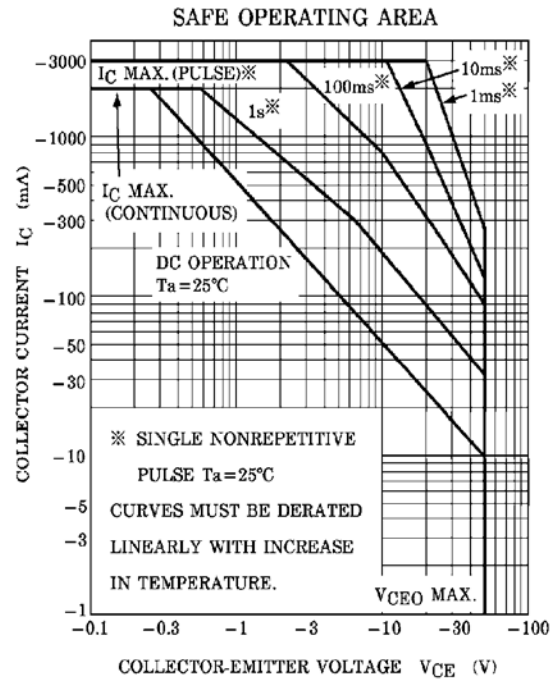
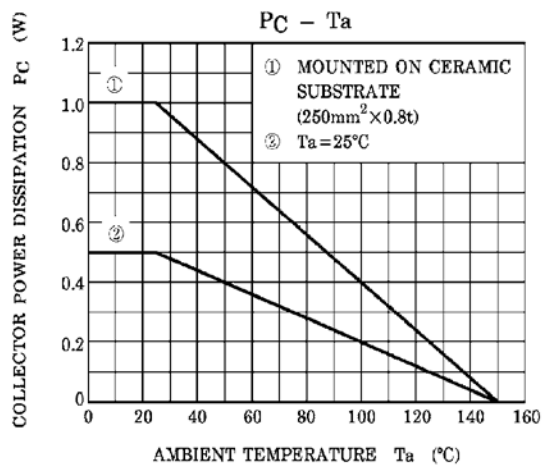
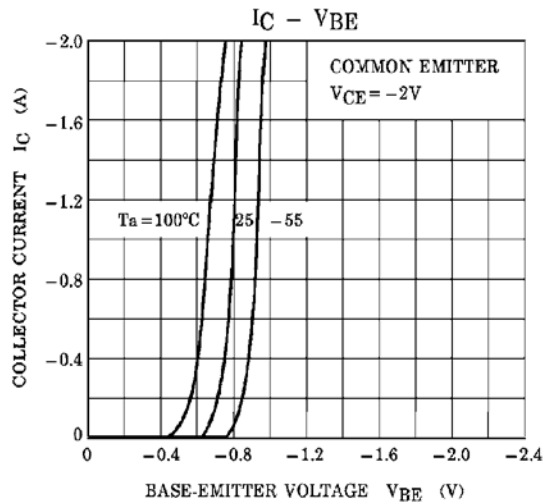
Typical Characteristic

2SA1213



Typical Characteristics

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Ordering Information :

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

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