



**2SA1013-R**  
**2SA1013-O**  
**2SA1013-Y**

**Features**

- Lead Free Finish/Rohs Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Capable of 0.9Watts of Power Dissipation.
- Collector-current -1.0A
- Collector-base Voltage -160V
- Operating and storage junction temperature range: -55°C to +150°C
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage (I <sub>C</sub> =-1.0mAdc, I <sub>B</sub> =0)	-160	---	Vdc
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>C</sub> =-100uAdc, I <sub>E</sub> =0)	-160	---	Vdc
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>E</sub> =-10mAdc, I <sub>C</sub> =0)	-6.0	---	Vdc
I <sub>CBO</sub>	Collector Cutoff Current (V <sub>CB</sub> =-150Vdc, I <sub>E</sub> =0)	---	-1.0	uAdc
I <sub>CEO</sub>	Collector Cutoff Current (V <sub>CB</sub> =-120Vdc, I <sub>E</sub> =0)	---	-10	uAdc
I <sub>EBO</sub>	Emitter Cutoff Current (V <sub>EB</sub> =-6.0Vdc, I <sub>C</sub> =0)	---	-1.0	uAdc

**ON CHARACTERISTICS**

h <sub>FE(1)</sub>	DC Current Gain (I <sub>C</sub> =-200mAdc, V <sub>CE</sub> =-5.0Vdc)	65	310	---
h <sub>FE(2)</sub>	DC Current Gain (I <sub>C</sub> =-50mAdc, V <sub>CE</sub> =-5.0Vdc)	40	---	---
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage (I <sub>C</sub> =-500mAdc, I <sub>B</sub> =-50mAdc)	---	-1.5	Vdc
V <sub>BE</sub>	Base-Emitter Saturation Voltage (I <sub>C</sub> =-5.0mAdc, V <sub>CE</sub> =-5.0Vdc)	---	-0.75	Vdc

**SMALL-SIGNAL CHARACTERISTICS**

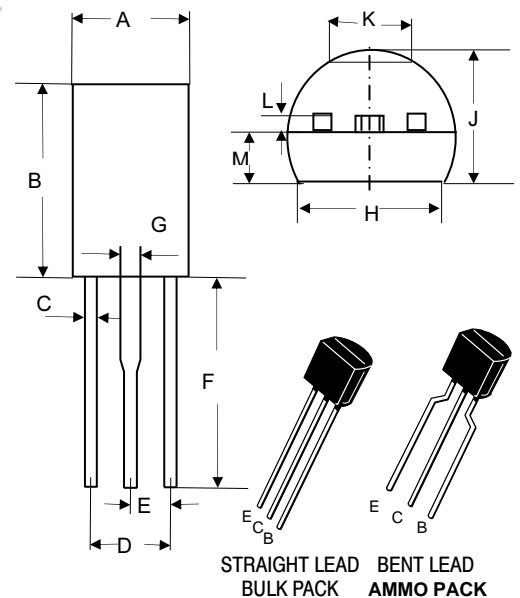
f <sub>T</sub>	Transistor Frequency (I <sub>C</sub> =-200mAdc, V <sub>CE</sub> =-5.0Vdc, f=30MHz)	-15	---	MHz
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**CLASSIFICATION OF h<sub>FE(1)</sub>**

Rank	R	O	Y
Range	60-120	120-200	200-300

**PNP Epitaxial Silicon Transistor**

**TO-92MOD**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.228	.244	5.80	6.20	
B	.331	.346	8.40	8.80	
C	.016	.024	0.40	0.60	
D	.114	.122	2.90	3.10	Straight Lead
	.173	.220	4.40	5.60	Bent Lead
E	.059		1.50		Straight Lead
	.086	.110	2.20	2.80	Bent Lead
F	.543	.559	13.80	14.20	
G	.035	.043	0.90	1.10	
H	.157	---	4.00	---	
J	.185	.201	4.70	5.10	
K	---	.063	---	1.60	
L	.016	.020	0.40	0.50	
M	.068	.080	1.73	2.03	

\* For ammo packing detailed specification, click here to visit our website of product packaging for details.



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### Ordering Information :

Device	Packing
Part Number-AP	Ammo Packing: 20Kpcs/Carton
Part Number-BP	Bulk: 50Kpcs/Carton

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

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