

# M.C.C.



Micro Commercial Components

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**2SA933AS-Q**  
**2SA933AS-R**  
**2SA933AS-S**

## Features

- Lead Free Finish/Rohs Compliant ("P" Suffix designates Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: type number
- Power dissipation:  $P_{CM} = 0.2W(T_{amb}=25^{\circ}C)$
- Collector current:  $I_{CM} = -0.15A$
- Collector-base voltage:  $V_{(BR)CBO} = -60V$
- Operating and storage junction temperature range  
 $T_J, T_{stg}: -55^{\circ}C$  to  $+150^{\circ}C$
- Halogen free available upon request by adding suffix "-HF"

## Electrical Characteristics @ 25°C Unless Otherwise Specified

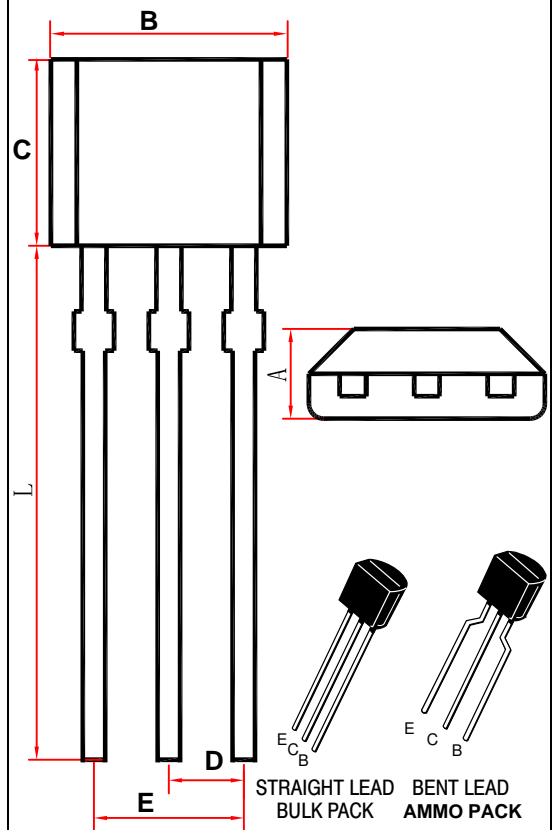
Symbol	Parameter	Min	Typ	Max	Unit
$V_{CEO}$	Collector-Emitter Voltage ( $I_C = -50 \mu A, I_E = 0$ )	-50	---	---	V
$V_{CBO}$	Collector-Base Voltage ( $I_C = -1 \mu A, I_B = 0$ )	-60	---	---	V
$V_{EBO}$	Emitter-Base Voltage ( $I_E = -50 \mu A, I_C = 0$ )	-6.0	---	---	V
$I_{CBO}$	Collector cut-off Current ( $V_{CB} = -20V, I_E = 0$ )	---	---	-0.1	$\mu A$
$I_{EBO}$	Emitter cut-off Current ( $V_{EB} = -5V, I_C = 0$ )	---	---	-0.1	$\mu A$
$h_{FE}$	DC current gain ( $V_{CE} = -2V, I_C = -0.1A$ )	120	---	560	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C = -2A, I_B = -0.1A$ )	---	---	-0.5	V
$f_T$	Transition Frequency ( $V_{CE} = 2.0V_{dc}, I_C = 0.5A_{dc}$ )	120	---	---	MHz

## CLASSIFICATION OF $h_{FE}$

Rank	Q	R	S
Range	120-270	180-390	270-560

## PNP Plastic-Encapsulate Transistors

### TO-92S



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.056	.064	1.42	1.62	
B	.154	.161	3.90	4.10	
C	.120	.128	3.05	3.25	
D	.050		1.27		Straight Lead
	.086	.110	2.20	2.80	Bent Lead
E	.096	.104	2.44	2.64	Straight Lead
	.173	.220	4.40	5.60	Bent Lead
L	.594	.610	15.10	15.50	

\* 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: 30Kpcs/Carton
Part Number-BP	Bulk: 100Kpcs/Carton

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

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