



Micro Commercial Components



Micro Commercial Components  
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**M28S-B**  
**M28S-C**  
**M28S-D**

## Features

- Capable of 0.625Watts of Power Dissipation.
- Collector-current 1.0A
- Collector-base Voltage 40V
- Operating and storage junction temperature range: -55°C to +150°C
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Marking: M28S X
- Halogen free available upon request by adding suffix "-HF"

**NPN Silicon**  
**Plastic-Encapsulate**  
**Transistor**

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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### OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_C=1.0\text{mAdc}$ , $I_B=0$ )	20	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=0.1\text{mAdc}$ , $I_E=0$ )	40	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=0.1\text{mAdc}$ , $I_C=0$ )	6.0	---	Adc
$I_{CBO}$	Collector Cutoff Current ( $V_{CB}=40\text{Vdc}$ , $I_E=0$ )	---	1.0	$\mu\text{Adc}$
$I_{CEO}$	Collector Cutoff Current ( $V_{CE}=20\text{Vdc}$ , $I_E=0$ )	----	5.0	Vdc
$I_{EBO}$	Emitter Cutoff Current ( $V_{EB}=5.0\text{Vdc}$ , $I_C=0$ )	---	0.1	$\mu\text{Adc}$

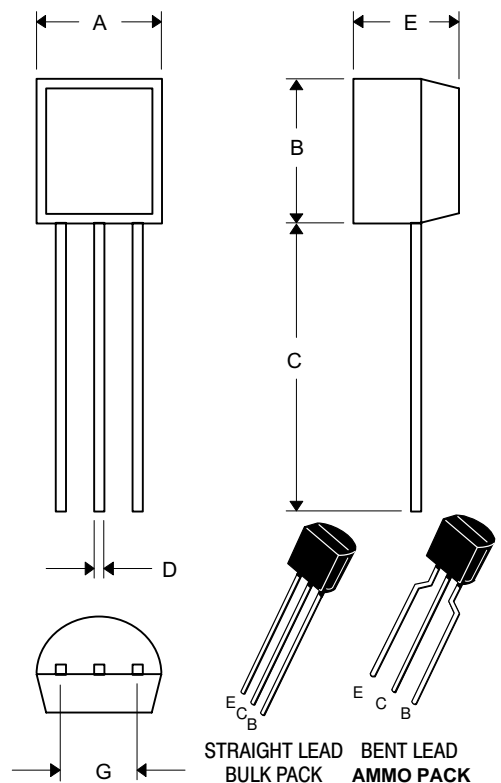
### ON CHARACTERISTICS

$h_{FE-1}$	DC Current Gain ( $I_C=1.0\text{mAdc}$ , $V_{CE}=1.0\text{Vdc}$ )	290	1000	---
$h_{FE-2}$	DC Current Gain ( $I_C=100\text{mAdc}$ , $V_{CE}=1.0\text{Vdc}$ )	300	1000	---
$h_{FE-3}$	DC Current Gain ( $I_C=300\text{mAdc}$ , $V_{CE}=1.0\text{Vdc}$ )	300	1000	---
$h_{FE-4}$	DC Current Gain ( $I_C=500\text{mAdc}$ , $V_{CE}=1.0\text{Vdc}$ )	300	1000	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=600\text{mAdc}$ , $I_B=20\text{mAdc}$ )	---	0.55	Vdc
$f_T$	Transition Frequency ( $V_{CE}=10\text{Vdc}$ , $I_C=50\text{mAdc}$ , $f=30\text{MHz}$ )	100	---	MHz

### CLASSIFICATION OF $h_{FE}$

Rank	B	C	D
Range	300-550	500-700	650-1000

## TO-92



### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.175	.185	4.45	4.70	
B	.175	.185	4.45	4.70	
C	.500	---	12.70	---	
D	.016	.020	0.41	0.63	
E	.135	.145	3.43	3.68	
G	.095	.105	2.42	2.67	Straight Lead
	.173	.220	4.40	5.60	Bent Lead

\* 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: 100Kpcs/Carton

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

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Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

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