



# THE DATASHEET OF MPSA05-AP





Micro Commercial Components



Micro Commercial Components  
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# MPSA05

## NPN General Purpose Amplifier

### Features

- This device is designed for use as general purpose amplifiers and switches requiring collector currents to 300mA
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: MPSA05
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings

Symbol	Rating	Rating	Unit
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Collector Current, Continuous	500	mA
T <sub>J</sub>	Operating Junction Temperature	-55 to +150	°C
T <sub>STG</sub>	Storage Temperature	-55 to +150	°C

### Thermal Characteristics

Symbol	Rating	Max	Unit
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
R <sub>JC</sub>	Thermal Resistance, Junction to Case	83.3	°C/W
R <sub>JA</sub>	Thermal Resistance, Junction to Ambient	200	°C/W

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

Symbol	Parameter	Min	Max	Units
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#### OFF CHARACTERISTICS

V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage* (I <sub>C</sub> =1.0mA, I <sub>B</sub> =0)	60	---	Vdc
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>E</sub> =100μA, I <sub>C</sub> =0)	4.0	---	Vdc
I <sub>CEO</sub>	Collector Cutoff Current (V <sub>CE</sub> =60Vdc, I <sub>B</sub> =0)	---	0.1	μA
I <sub>CBO</sub>	Emitter Cutoff Current (V <sub>CB</sub> =60Vdc, I <sub>E</sub> =0)	---	0.1	μA

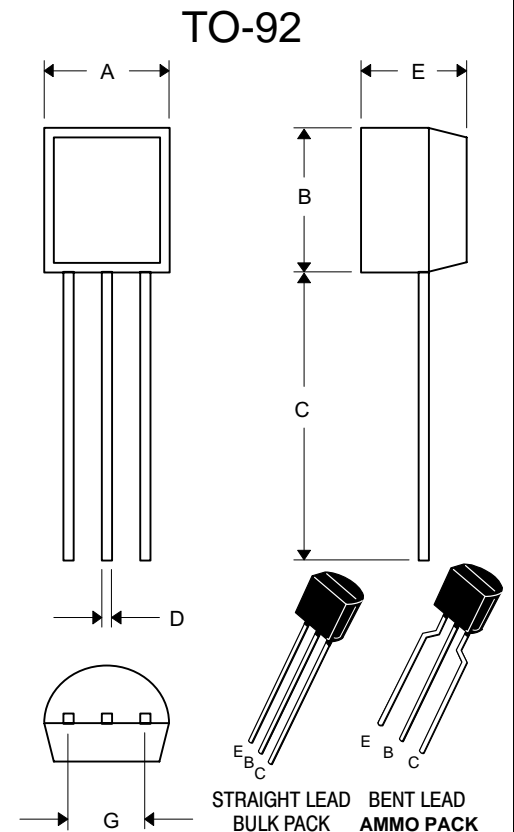
#### ON CHARACTERISTICS

h <sub>FE</sub>	DC Current Gain (V <sub>CE</sub> =1.0Vdc, I <sub>C</sub> =10mA) (V <sub>CE</sub> =1.0Vdc, I <sub>C</sub> =100mA)	100 100	---	---
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage (I <sub>C</sub> =100mA, I <sub>B</sub> =10mA)	---	0.25	Vdc
V <sub>BE(on)</sub>	Base-Emitter On Voltage (I <sub>C</sub> =100mA, V <sub>CE</sub> =1.0Vdc)	---	1.2	Vdc

#### Small Signal Characteristics

f <sub>T</sub>	Current Gain Bandwidth Product (I <sub>C</sub> =10mA, V <sub>CE</sub> =2.0Vdc, f=100MHz)	100	---	MHz
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\* Pulse Test: Pulse Width<300us, Duty Cycle<2.0%



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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