

**Features**

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

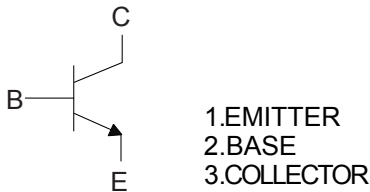
**Maximum Ratings @ 25°C Unless Otherwise Specified**

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 200°C/W Junction to Ambient
- Thermal Resistance: 83.3°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	30	V
Collector-Emitter Voltage	$V_{CEO}$	25	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	200	mA
Power Dissipation@TA=25°C	$P_D$	625	mW
Power Dissipation@TC=25°C	$P_D$	1.5	W

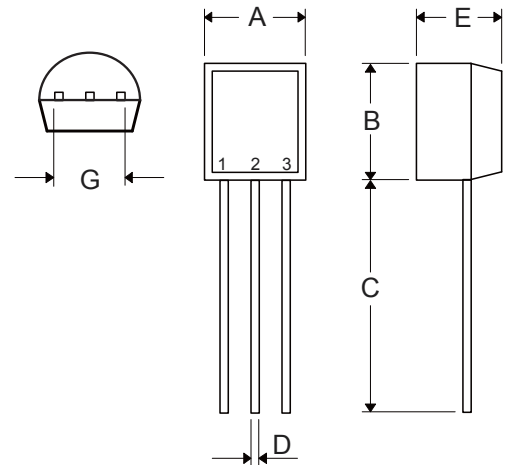
**Marking:** Part Number

**Internal Structure**



**NPN Silicon General Purpose Transistor**

TO-92



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.169	0.185	4.30	4.70	
C	0.500	-----	12.70	-----	
D	0.015	0.022	0.38	0.55	
E	0.130	0.146	3.30	3.70	
G	0.095	0.105	2.42	2.67	Straight Lead
	0.173	0.220	4.40	5.60	Bent

**Electrical Characteristics @ T<sub>A</sub>=25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	30			V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	25			V	$I_C=1mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=10\mu A, I_C=0$
Collector-Base Cutoff Current	$I_{CBO}$			0.05	$\mu A$	$V_{CB}=20V, I_E=0$
Emitter-Base Cutoff Current	$I_{EBO}$			0.05	$\mu A$	$V_{EB}=3V, I_C=0$
DC Current Gain	$h_{FE(1)}$	120				$V_{CE}=1V, I_C=2mA$
	$h_{FE(2)}$	60				$V_{CE}=1V, I_C=50mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.3	V	$I_C=50mA, I_B=5mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			0.95	V	$I_C=50mA, I_B=5mA$
Collector Output Capacitance	$C_{ob}$			4	pF	$V_{CB}=5V, I_E=0, f=1MHz$
Transition Frequency	$f_T$	300			MHz	$V_{CE}=20V, I_C=10mA, f=100MHz$

## 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-TP-HF

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