

# 2N2905A

## PNP General Purpose Amplifier

### Features

- General-purpose Transistor for Switching and Amplifier Applications
- Housed in a TO-39 Case
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

### Maximum Ratings

Symbol	Rating	Rating	Unit
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5.0	V
$I_C$	Collector Current, Continuous	600	mA
$T_J$	Operating Junction Temperature	-55 to +150	°C
$T_{STG}$	Storage Temperature	-55 to +150	°C

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

Symbol	Parameter	Min	Typ	Max	Units
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#### OFF CHARACTERISTICS

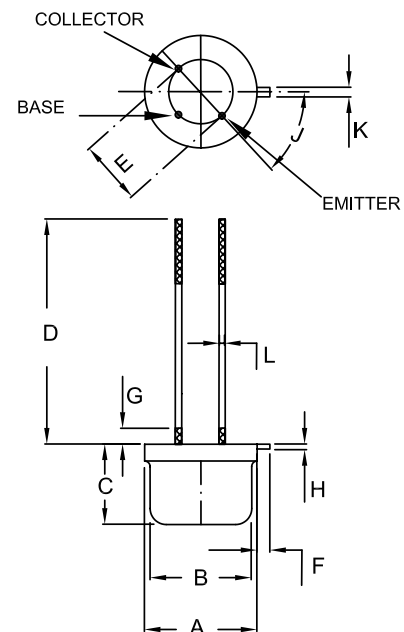
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ( $I_C=10\text{mA}$ , $I_B=0$ )	60	70	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=10\mu\text{A}$ , $I_E=0$ )	60	100	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=10\mu\text{A}$ , $I_C=0$ )	5.0	9.0	---	Vdc
$I_{CES}$	Collector-Emitter Cutoff Current ( $V_{CE}=30\text{Vdc}$ )	---	1.0	50	nA
$I_{CBO}$	Collector-Base Cutoff Current ( $V_{CB}=50\text{Vdc}$ )	---	0.25	10	nA
$I_{EBO}$	Emitter-Base Cutoff Current ( $V_{EB}=3.5\text{Vdc}$ )	---	0.1	50	nA

#### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain* ( $I_C=100\mu\text{A}$ , $V_{CE}=10\text{Vdc}$ ) ( $I_C=1.0\text{mA}$ , $V_{CE}=10\text{Vdc}$ ) ( $I_C=10\text{mA}$ , $V_{CE}=10\text{Vdc}$ ) ( $I_C=150\text{mA}$ , $V_{CE}=10\text{Vdc}$ ) ( $I_C=500\text{mA}$ , $V_{CE}=10\text{Vdc}$ )	75 100 100 100 50	225 250 ---	450 ---	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=150\text{mA}$ , $I_B=15\text{mA}$ ) ( $I_C=500\text{mA}$ , $I_B=50\text{mA}$ )	---	0.18 0.5	0.4 1.6	Vdc	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=150\text{mA}$ , $I_B=15\text{mA}$ ) ( $I_C=500\text{mA}$ , $I_B=50\text{mA}$ )	---	0.87 1.0	1.3 2.6	Vdc	

Notes:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

### TO-39



### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.335	.370	8.509	9.40	Φ
B	.305	.335	7.747	8.509	Φ
C	.240	.260	6.096	6.604	
D	.50	.75	12.7	19.05	
E	.200		5.08		ΦTYP
F	.029	.045	7.366	11.43	
G	----	.050	----	1.27	
H	.009	.031	0.229	7.874	
J	44°	46°	44°	46°	
K	.028	.034	0.711	0.864	
L	.016	.021	0.406	0.533	

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Symb	Parameter	Min	Typ	Max	Units
<b>SMALL-SIGNAL CHARACTERISTICS</b>					
AC $h_{FE}$	Short Circuit Current Transfer Ratio ( $I_C=1.0\text{mA}$ , $V_{CE}=10\text{Vdc}$ , $f=1.0\text{kHz}$ )	100	250	---	---
$C_{OBO}$	Open Circuit Output Capacitance ( $V_{CB}=10\text{Vdc}$ , $I_E=0$ , $100\text{kHz}<f<1.0\text{MHz}$ )	---	6.0	8.0	pF
$C_{IBO}$	Input Capacitance, Output Open Circuited ( $V_{EB}=2.0\text{Vdc}$ , $I_C=0$ , $100\text{kHz}<f<1.0\text{MHz}$ )	---	8.0	30.0	pF
<b>SWITCHING CHARACTERISTICS</b>					
$t_{ON}$	Saturated Turn On Switching Time to 90% 16V, 50 ohm input pulse	---	25	45	ns
$t_{OFF}$	Saturated Turn Off Switching Time to 10% 16V, 50 ohm input pulse	---	200	300	ns

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### Ordering Information :

Device	Packing
Part Number-BP	Bulk; 50pcs/Box

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