

## PNP 2N2905 – 2N2905A

### SILICON PLANAR EPITAXIAL TRANSISTOR

The 2N2905 and 2N2905A are PNP transistors mounted in TO-39 metal case .  
They are intended for high speed switching and general purpose applications.  
Compliance to RoHS

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$V_{CEO}$	Collector-Emitter Voltage	2N2905A	-60	V
		2N2905	-40	
$V_{CBO}$	Collector-Base Voltage	2N2905A	-60	V
		2N2905	-60	
$V_{EBO}$	Emitter-Base Voltage	2N2905A	-5	V
		2N2905	-5	
$I_C$	Collector Current	2N2905A	-600	mA
		2N2905		
$P_D$	Total Power Dissipation	@ $T_{amb} = 25^\circ$	0.6	Watts
		2N2905A		
$P_D$	Total Power Dissipation	@ $T_{case} = 25^\circ$	3	
		2N2905A		
$T_J$	Junction Temperature	2N2905A	200	$^\circ C$
		2N2905		
$T_{Stg}$	Storage Temperature range	2N2905A	-65 to +200	$^\circ C$
		2N2905		

#### THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
$R_{thJ-a}$	Thermal Resistance, Junction to ambient in free air	2N2905A	58.3	$^\circ C/W$
		2N2905		
$R_{thJ-c}$	Thermal Resistance, Junction to case	2N2905A	292	$^\circ C/W$
		2N2905		

## PNP 2N2905 – 2N2905A

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

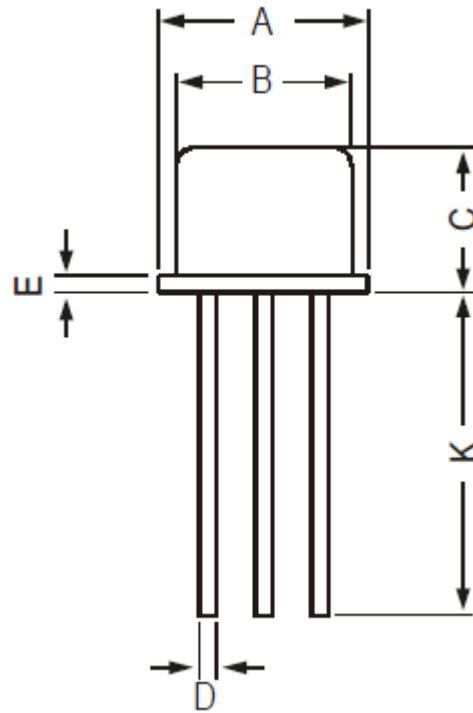
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=-50\text{ V}$ $I_E=0$	2N2905A	-	-	-10	nA
			2N2905	-	-	-20	
		$V_{CB}=-50\text{ V}$ , $I_E=0$ $T_J=150^\circ\text{C}$	2N2905A	-	-	-10	$\mu\text{A}$
			2N2905	-	-	-20	
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=-30\text{ V}$ $V_{BE}=0.5\text{ V}$	2N2905A	-	-	-50	nA
			2N2905	-	-		
$V_{CEO}$	Collector Emitter Breakdown Voltage	$I_C=-10\text{ mA}$ $I_B=0$	2N2905A	-60	-	-	V
			2N2905	-40	-	-	
$V_{CBO}$	Collector Base Breakdown Voltage	$I_C=-10\text{ }\mu\text{A}$ $I_E=0$	2N2905A	-60	-	-	V
			2N2905				
$V_{EBO}$	Emitter Base Breakdown Voltage	$I_E=-10\text{ }\mu\text{A}$ $I_C=0$	2N2905A	-5	-	-	V
			2N2905				
$h_{FE}$	DC Current Gain (*)	$I_C=-0.1\text{ mA}$ $V_{CE}=-10\text{ V}$	2N2905A	75	-	-	-
			2N2905	35	-	-	
		$I_C=-1\text{ mA}$ $V_{CE}=-10\text{ V}$	2N2905A	100	-	-	
			2N2905	50	-	-	
		$I_C=-10\text{ mA}$ $V_{CE}=-10\text{ V}$	2N2905A	100	-	-	
			2N2905	75	-	-	
		$I_C=-150\text{ mA}$ $V_{CE}=-10\text{ V}$	2N2905A	100	-	300	
			2N2905	40	-	120	
$I_C=-500\text{ mA}$ $V_{CE}=-10\text{ V}$	2N2905A	50	-	-			
	2N2905	30	-	-			
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=-150\text{ mA}$ $I_B=-15\text{ mA}$	2N2905A	-	-	-0.4	V
			2N2905	-	-		
		$I_C=-500\text{ mA}$ $I_B=-50\text{ mA}$	2N2905A	-	-	-1.6	
			2N2905	-	-		
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	$I_C=-150\text{ mA}$ $I_B=-15\text{ mA}$	2N2905A	-	-	-1.3	V
			2N2905	-	-		
		$I_C=-500\text{ mA}$ $I_B=-50\text{ mA}$	2N2905A	-	-	-2.6	
			2N2905	-	-		
$f_T$	Transition frequency	$I_C=-50\text{ mA}$ $V_{CE}=-20\text{ V}$ $f=100\text{ MHz}$	2N2905A	200	-	-	MHz
			2N2905				
$t_d$	Delay time	$I_C=-150\text{ mA}$ , $I_B=-15\text{ mA}$ $-V_{CC}=-30\text{ V}$	-	-	10	ns	
$t_r$	Rise time		-	-	40		
$C_{CBO}$	Collector-Base capacitance	$I_E=I_C=0$ , $V_{CB}=-10\text{ V}$ $f=100\text{ kHz}$	2N2905A	-	-	8	$\mu\text{F}$
			2N2905				
$C_{EBO}$	Emitter-Base capacitance	$I_C=I_E=0$ , $V_{EB}=-2\text{ V}$ $f=100\text{ kHz}$	2N2905A	-	-	30	$\mu\text{F}$
			2N2905				

(\*) Pulse conditions :  $t_p < 300\text{ }\mu\text{s}$ ,  $\delta = 2\%$

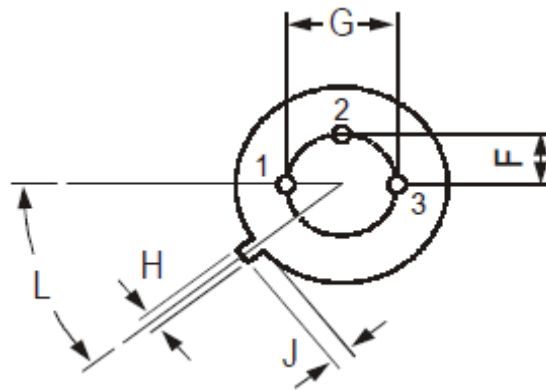
## PNP 2N2905 – 2N2905A

### MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	min	max
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°



Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector



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