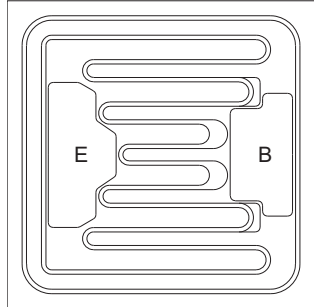


The CP305V-2N720A is a silicon NPN small signal transistor designed for general purpose amplifier and switching applications.



**MECHANICAL SPECIFICATIONS:**

Die Size	31.1 x 31.1 MILS
Die Thickness	7.1 MILS
Base Bonding Pad Size	5.9 x 11.8 MILS
Emitter Bonding Pad Size	6.5 x 13.8 MILS
Top Side Metalization	Al - 13,000Å
Back Side Metalization	Au/As-Au - 9,000Å
Scribe Alley Width	1.96 MILS
Wafer Diameter	5 INCHES
Gross Die Per Wafer	17,534

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

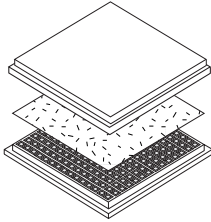
	SYMBOL		UNITS
Collector-Base Voltage	$V_{CBO}$	120	V
Collector-Emitter Voltage	$V_{CER}$	100	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	7.0	V
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=90\text{V}$		10	nA
$I_{EBO}$	$V_{EB}=5.0\text{V}$		10	nA
$BV_{CBO}$	$I_C=100\mu\text{A}$	120		V
$BV_{CER}$	$I_C=100\text{mA}, R_{BE}=10\Omega$	100		V
$BV_{CEO}$	$I_C=30\text{mA}$	80		V
$BV_{EBO}$	$I_E=100\mu\text{A}$	7.0		V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		1.2	V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		5.0	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.9	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		1.3	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	20		
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	35		
$h_{FE}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$	40	120	
$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=20\text{MHz}$	50		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$		15	pF
$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=100\text{kHz}$		85	pF
$h_{ib}$	$V_{CB}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	20	30	$\Omega$
$h_{ib}$	$V_{CB}=10\text{V}, I_C=5.0\text{mA}, f=1.0\text{kHz}$	4.0	8.0	$\Omega$
$h_{rb}$	$V_{CB}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		1.25	$\times 10^{-4}$
$h_{rb}$	$V_{CB}=10\text{V}, I_C=5.0\text{mA}, f=1.0\text{kHz}$		1.50	$\times 10^{-4}$
$h_{fe}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	30	100	
$h_{fe}$	$V_{CE}=10\text{V}, I_C=5.0\text{mA}, f=1.0\text{kHz}$	45		
$h_{ob}$	$V_{CB}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		0.5	$\mu\text{S}$
$h_{ob}$	$V_{CB}=10\text{V}, I_C=5.0\text{mA}, f=1.0\text{kHz}$		0.5	$\mu\text{S}$

## BARE DIE PACKING OPTIONS

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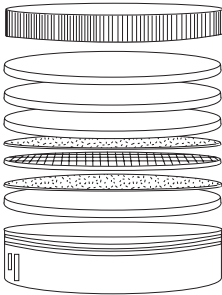


### BARE DIE IN TRAY (WAFFLE) PACK

**CT:** Singulated die in tray (waffle) pack.  
(example: CP211-PART NUMBER-CT)

**CM:** Singulated die in tray (waffle) pack 100% visually inspected as per MIL-STD-750, (method 2072 transistors, method 2073 diodes).  
(example: CP211-PART NUMBER-CM)

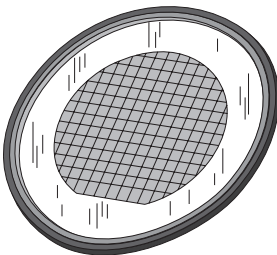
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### UNSAWN WAFER

**WN:** Full wafer, unsawn, 100% tested with reject die inked.  
(example: CP211-PART NUMBER-WN)

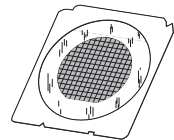
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### SAWN WAFER ON PLASTIC RING

**WR:** Full wafer, sawn and mounted on plastic ring,  
100% tested with reject die inked.  
(example: CP211-PART NUMBER-WR)

Please note: Sawn Wafer on Metal Frame (WS) is possible as a special order. Please contact your Central Sales Representative at 631-435-1110.



Visit the Central website for a complete listing of specifications:  
[www.centrasemi.com/bdspecs](http://www.centrasemi.com/bdspecs)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

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