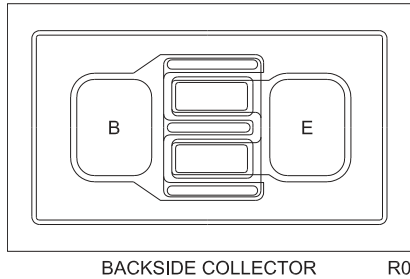


# CP396V-2N2369A

## NPN - Saturated Switch Transistor Die

### 0.2 Amp, 40 Volt

The CP396V-2N2369A is a silicon NPN transistor designed for high speed saturated switching applications.



#### MECHANICAL SPECIFICATIONS:

Die Size	14.2 x 8.7 MILS
Die Thickness	7.1 MILS
Base Bonding Pad Size	2.9 x 3.7 MILS
Emitter Bonding Pad Size	2.9 x 3.7 MILS
Top Side Metalization	Al – 13,000Å
Back Side Metalization	Au-As – 9,000Å
Scribe Alley Width	1.96 MILS
Wafer Diameter	5 INCHES
Gross Die Per Wafer	139,524

#### MAXIMUM RATINGS: (T<sub>A</sub>=25°C)

Collector-Base Voltage	V <sub>CBO</sub>	40	V
Collector-Emitter Voltage	V <sub>CES</sub>	40	V
Collector-Emmitter Voltage	V <sub>CEO</sub>	15	V
Emitter-Base Voltage	V <sub>EBO</sub>	4.5	V
Continuous Collector Current	I <sub>C</sub>	200	mA
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200	°C

#### SYMBOL

#### UNITS

#### ELECTRICAL CHARACTERISTICS: (T<sub>A</sub>=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I <sub>CBO</sub>	V <sub>CB</sub> =20V		400	nA
BV <sub>CBO</sub>	I <sub>C</sub> =10μA	40		V
BV <sub>CES</sub>	I <sub>C</sub> =10μA	40		V
BV <sub>CEO</sub>	I <sub>C</sub> =10mA	15		V
BV <sub>EBO</sub>	I <sub>E</sub> =10μA	4.5		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA		200	mV
V <sub>CE(SAT)</sub>	I <sub>C</sub> =30mA, I <sub>B</sub> =3.0mA		250	mV
V <sub>CE(SAT)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA		500	mV
V <sub>BE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA	700	850	mV
V <sub>BE(SAT)</sub>	I <sub>C</sub> =30mA, I <sub>B</sub> =3.0mA		1.15	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA		1.6	V
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =10mA	40	120	
h <sub>FE</sub>	V <sub>CE</sub> =0.4V, I <sub>C</sub> =30mA	30		
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =100mA	20		
f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =10mA, f=100MHz	500		MHz
C <sub>ob</sub>	V <sub>CB</sub> =5.0V, I <sub>E</sub> =0, f=140kHz		4.0	pF
t <sub>on</sub>	[V <sub>CC</sub> =3.0V, I <sub>C</sub> =10mA, I <sub>B1</sub> =3.0mA I <sub>B2</sub> =1.5mA]		12	ns
t <sub>off</sub>			18	ns

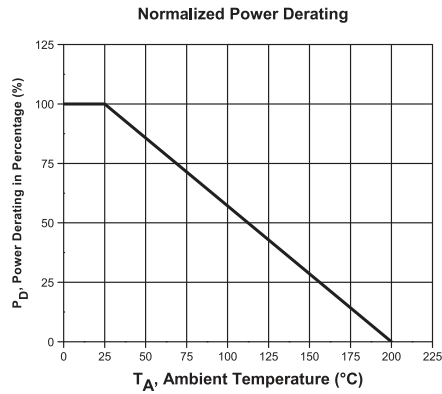
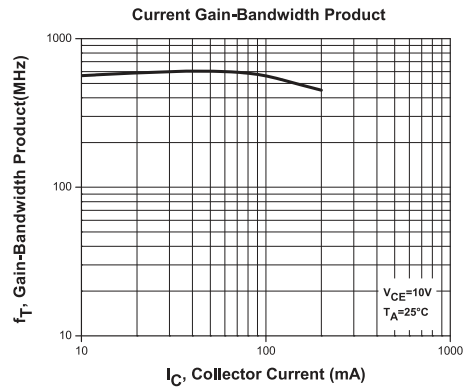
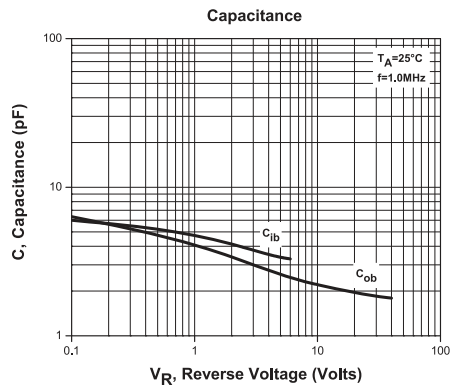
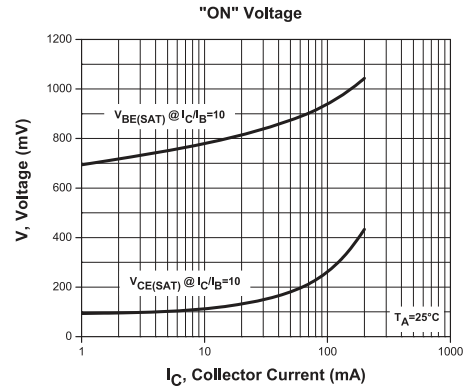
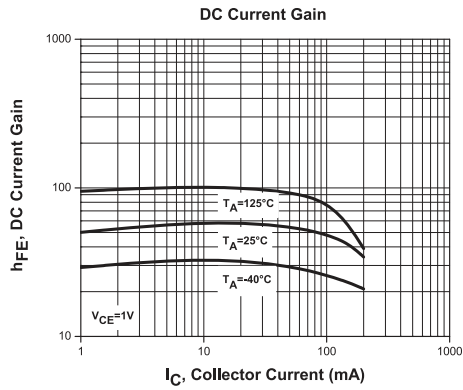
#### PACKING OPTIONS:

- CP396V-2N2369A-CT: Singulated die in waffle pack; 700 die per tray.
- CP396V-2N2369A-WN: Full wafer, unsawn, 100% tested with reject die inked.
- CP396V-2N2369A-WR: Full wafer, sawn and mounted on plastic ring, 100% tested with reject die inked.

R0 (6-March 2015)

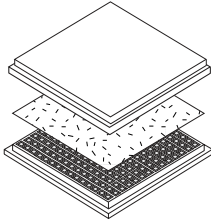
# CP396V-2N2369A

## Typical Electrical Characteristics



## BARE DIE PACKING OPTIONS

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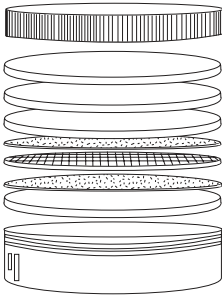


### BARE DIE IN TRAY (WAFFLE) PACK

**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)

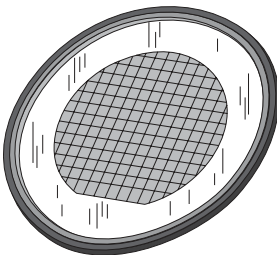
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### UNSAWN WAFER

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

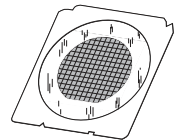
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### SAWN WAFER ON PLASTIC RING

**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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[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

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