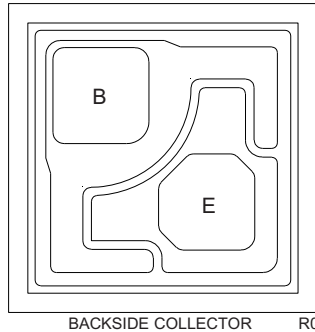


CP392V-2N3904

NPN - General Purpose Transistor Die

0.2 Amp, 40 Volt

The CP392V-2N3904 is a silicon NPN transistor designed for general purpose applications.



MECHANICAL SPECIFICATIONS:

Die Size	11 x 11 MILS
Die Thickness	7.1 MILS
Base Bonding Pad Size	3.74 x 3.74 MILS
Emitter Bonding Pad Size	3.74 x 3.74 MILS
Top Side Metalization	Al – 30,000Å
Back Side Metalization	Au – 12,000Å
Scribe Alley Width	1.5 MILS
Wafer Diameter	4 INCHES
Gross Die Per Wafer	93,826

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Continuous Collector Current	I_C	200	mA
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	$^{\circ}\text{C}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEV}	$V_{CE}=30\text{V}, V_{EB}=3.0\text{V}$		50	nA
BV_{CBO}	$I_C=10\mu\text{A}$	60		V
BV_{CEO}	$I_C=1.0\text{mA}$	40		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.20	V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.30	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	0.65	0.85	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.95	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	40		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	70		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	100	300	
h_{FE}	$V_{CE}=1.0\text{V}, I_C=50\text{mA}$	60		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$	30		
h_{fe}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	100	400	
f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300		MHz
C_{ob}	$V_{CB}=5.0\text{V}, I_E=0, f=100\text{kHz}$		4.0	pF
C_{ib}	$V_{BE}=0.5\text{V}, I_C=0, f=100\text{kHz}$		12	pF

R0 (20-September 2018)

CP392V-2N3904

Typical Electrical Characteristics



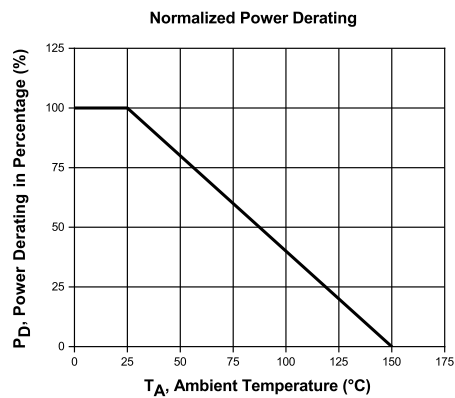
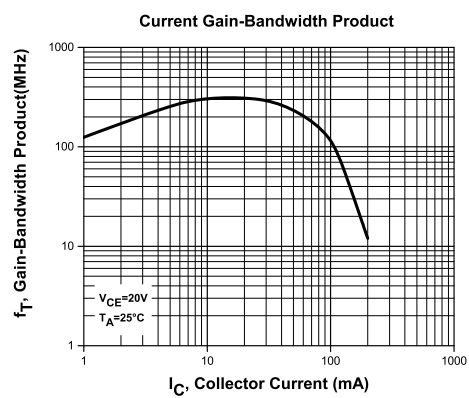
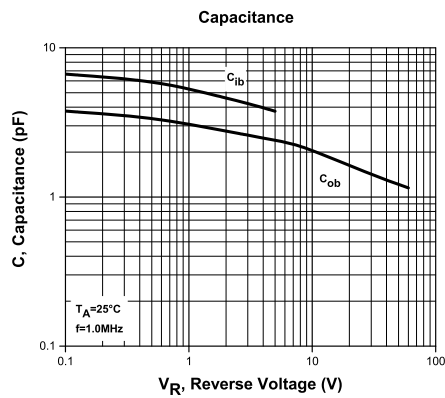
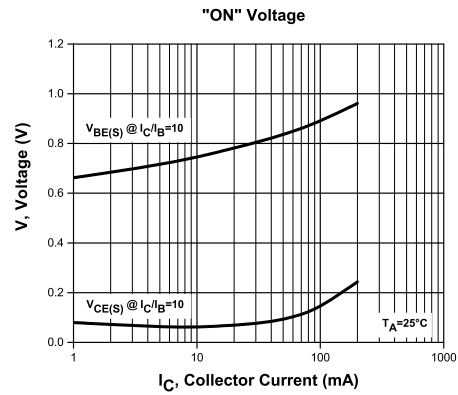
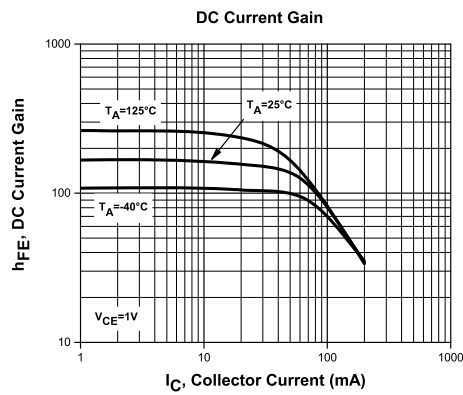
ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$)

SYMBOL	TEST CONDITIONS	MAX	UNITS
NF	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$, $R_S=1.0\text{k}\Omega$, $f=10\text{Hz}$ to 15.7kHz	5.0	dB
t_{on}	$V_{CC}=3.0\text{V}$, $V_{BE(OFF)}=0.5\text{V}$, $I_C=10\text{mA}$, $I_{B1}=1.0\text{mA}$	70	ns
t_{off}	$V_{CC}=3.0\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$	250	ns

R0 (20-September 2018)

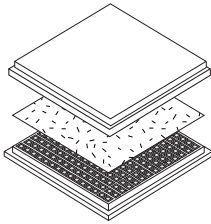
CP392V-2N3904

Typical Electrical Characteristics



R0 (20-September 2018)

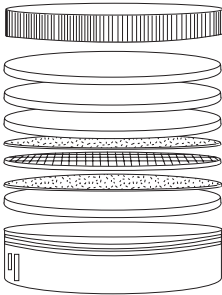
BARE DIE PACKING OPTIONS



BARE DIE IN TRAY (WAFFLE) PACK

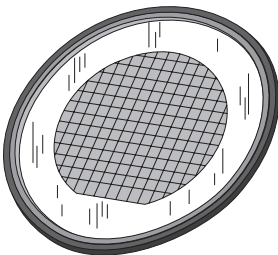
CT: Singulated die in tray (waffle) pack.
(example: CP211-PART NUMBER-CT)

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)



UNSAWN WAFER

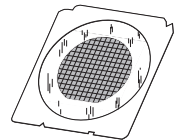
WN: Full wafer, unsawn, 100% tested with reject die inked.
(example: CP211-PART NUMBER-WN)



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

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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

DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

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).

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centrasemi.com

Worldwide Field Representatives:
www.centrasemi.com/wwreps

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www.centrasemi.com/wwdistributors

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