CP337V-2N4014

NPN - General Purpose Transistor Die

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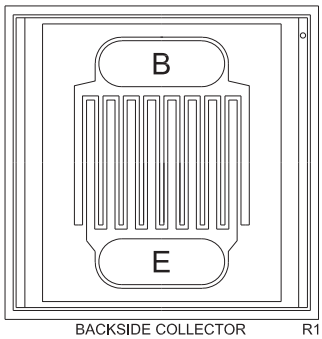
The CP337V-2N4014 is a silicon NPN transistor designed for general purpose switching applications.



BACKSIDE COLLECTOR R1

MECHANICAL SPECIFICATIONS:

Die Size	29 x 29 MILS
Die Thickness	7.1 MILS
Base Bonding Pad Size	11.8 x 4.5 MILS
Emitter Bonding Pad Size	11.8 x 4.5 MILS
Top Side Metalization	Al – 30,000Å
Back Side Metalization	Au-As – 13,000Å
Scribe Alley Width	2.0 MILS
Wafer Diameter	4 INCHES
Gross Die Per Wafer	13,192

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Continuous Collector Current	I_C	1.0	A
Peak Collector Current	I_{CM}	2.0	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=60V		1.7	μA
I_{CES}	V_{CE}=80V		10	μA
BV_{CBO}	I_C=10μA	80		V
BV_{CES}	I_C=10μA	80		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.25	V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA		0.26	V
$V_{CE(SAT)}$	I_C=300mA, I_B=30mA		0.40	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.52	V
$V_{CE(SAT)}$	I_C=800mA, I_B=80mA		0.80	V
$V_{CE(SAT)}$	I_C=1.0A, I_B=100mA		0.95	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.76	V
$V_{BE(SAT)}$	I_C=100mA, I_B=10mA		0.86	V
$V_{BE(SAT)}$	I_C=300mA, I_B=30mA		1.1	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA	0.80	1.1	V
$V_{BE(SAT)}$	I_C=800mA, I_B=80mA		1.5	V
$V_{BE(SAT)}$	I_C=1.0A, I_B=100mA		1.7	V

R0 (6-June 2016)

CP337V-2N4014
Typical Electrical Characteristics

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ELECTRICAL CHARACTERISTICS - Continued: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=10mA	30		
h_{FE}	V_{CE}=1.0V, I_C=100mA	60	150	
h_{FE}	V_{CE}=1.0V, I_C=300mA	40		
h_{FE}	V_{CE}=1.0V, I_C=500mA	35		
h_{FE}	V_{CE}=2.0V, I_C=800mA	20		
h_{FE}	V_{CE}=5.0V, I_C=1.0A	25		
f_T	V_{CE}=10V, I_C=50mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		10	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		55	pF
t_d	V_{CC}=30V, I_C=500mA, I_{B1}=50mA		10	ns
t_r	V_{CC}=30V, I_C=500mA, I_{B1}=50mA		30	ns
t_{on}	V_{CC}=30V, I_C=500mA, I_{B1}=50mA		35	ns
t_s	V_{CC}=30V, I_C=500mA, I_{B1}=I_{B2}=50mA		50	ns
t_f	V_{CC}=30V, I_C=500mA, I_{B1}=I_{B2}=50mA		25	ns
t_{off}	V_{CC}=30V, I_C=500mA, I_{B1}=I_{B2}=50mA		60	ns

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Typical Electrical Characteristics

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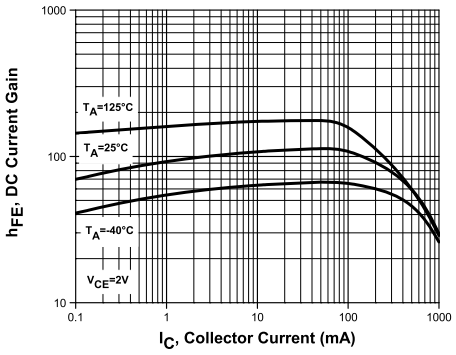
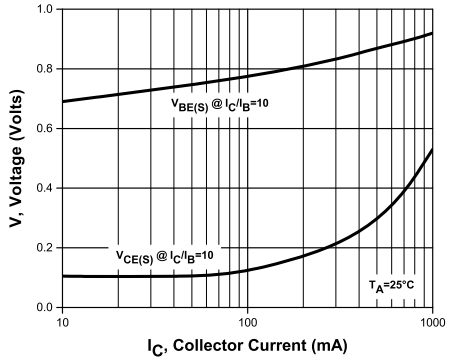
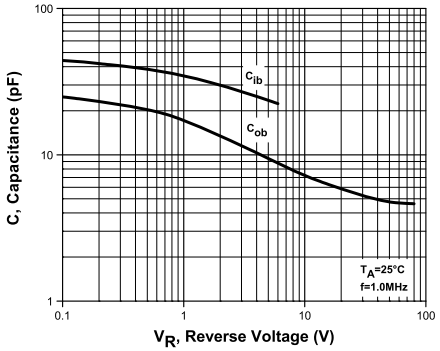
DC Current Gain



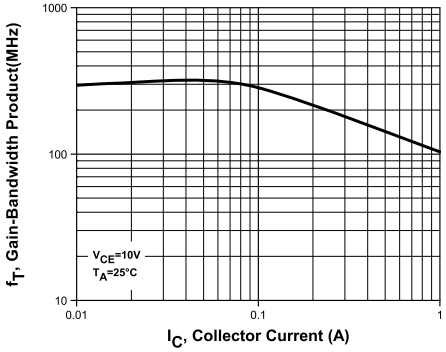
"ON" Voltage



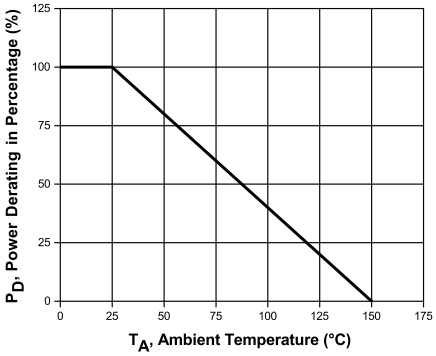
Capacitance



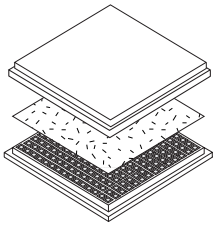
Current Gain-Bandwidth Product



Normalized Power Derating



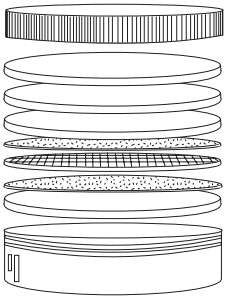
BARE DIE PACKING OPTIONS



BARE DIE IN TRAY (WAFFLE) PACK

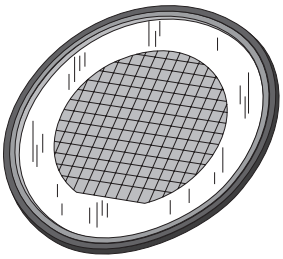
CT: Singulated die in tray (waffle) pack.
(example: CP211-PART NUMBER-CT)

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)



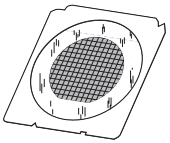
UNSAWN WAFER

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.centralsemi.com/bdspecs

R2 (3-April 2017)

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

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