

2N5679 2N5680 PNP  
2N5681 2N5682 NPN

**COMPLEMENTARY  
SILICON POWER TRANSISTORS**



**TO-39 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N5679, 2N5681 series devices are complementary silicon power transistors, manufactured by the epitaxial planar process, designed for general purpose amplifier and switching applications where high voltages are required.

**MARKING: FULL PART NUMBER**

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

	SYMBOL	2N5679 2N5681	2N5680 2N5682	UNITS
Collector-Base Voltage	$V_{CBO}$	100	120	V
Collector-Emitter Voltage	$V_{CEO}$	100	120	V
Emitter-Base Voltage	$V_{EBO}$	4.0		V
Continuous Collector Current	$I_C$	1.0		A
Continuous Base Current	$I_B$	0.5		A
Power Dissipation	$P_D$	1.0		W
Power Dissipation ( $T_C=25^{\circ}\text{C}$ )	$P_D$	10		W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +200		$^{\circ}\text{C}$
Thermal Resistance	$\theta_{JA}$	175		$^{\circ}\text{C/W}$
Thermal Resistance	$\theta_{JC}$	17.5		$^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=\text{Rated } V_{CBO}$		1.0	$\mu\text{A}$
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}$		1.0	$\mu\text{A}$
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}, T_C=150^{\circ}\text{C}$		1.0	mA
$I_{CEO}$	$V_{CE}=70\text{V}$ (2N5679, 2N5681)		10	$\mu\text{A}$
$I_{CEO}$	$V_{CE}=80\text{V}$ (2N5680, 2N5682)		10	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=4.0\text{V}$		1.0	$\mu\text{A}$
$BV_{CEO}$	$I_C=10\text{mA}$ (2N5679, 2N5681)	100		V
$BV_{CEO}$	$I_C=10\text{mA}$ (2N5680, 2N5682)	120		V
$V_{CE(SAT)}$	$I_C=250\text{mA}, I_B=25\text{mA}$		0.6	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.0	V
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=200\text{mA}$		2.0	V
$V_{BE(ON)}$	$V_{CE}=2.0\text{V}, I_C=250\text{mA}$		1.0	V
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=250\text{mA}$	40	150	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	5.0		
$h_{fe}$	$V_{CE}=1.5\text{V}, I_C=0.2\text{A}, f=1.0\text{kHz}$	40		
$f_T$	$V_{CE}=10\text{V}, I_C=100\text{mA}, f=10\text{MHz}$	30		MHz
$C_{ob}$	$V_{CB}=20\text{V}, I_E=0, f=1.0\text{MHz}$		50	pF

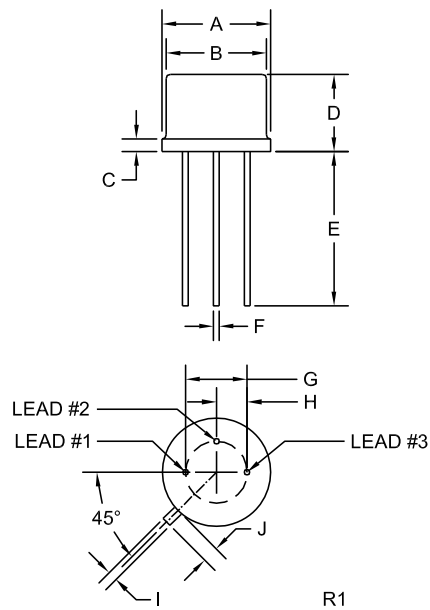
R2 (2-December 2013)

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**TO-39 CASE - MECHANICAL OUTLINE**



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.315	0.335	8.00	8.51
C	-	0.040	-	1.02
D	0.240	0.260	6.10	6.60
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G (DIA)	0.200		5.08	
H	0.100		2.54	
I	0.028	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14

TO-39 (REV: R1)

**LEAD CODE:**

- 1) Emitter
- 2) Base
- 3) Collector

**MARKING: FULL PART NUMBER**

R2 (2-December 2013)

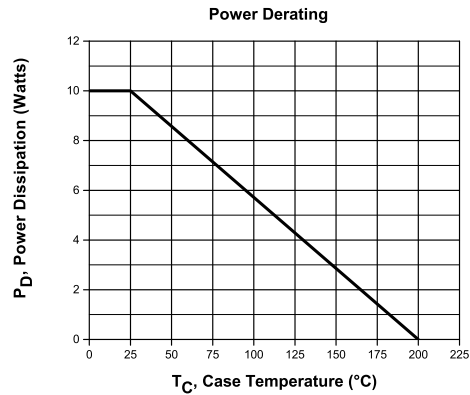
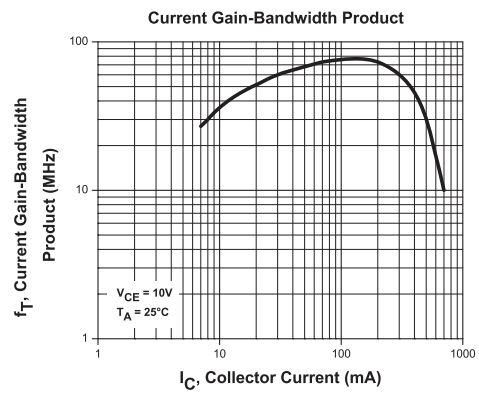
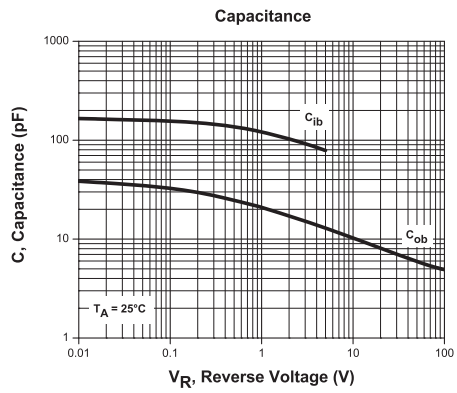
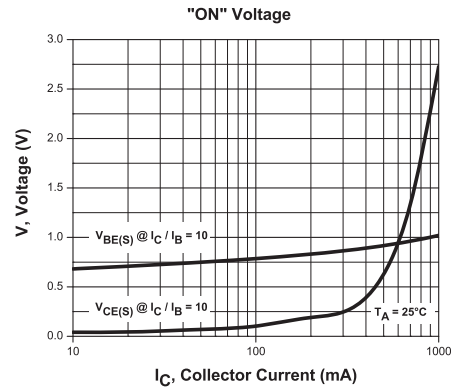
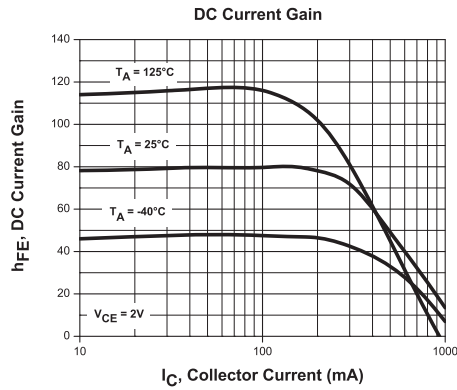
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PNP TYPICAL ELECTRICAL CHARACTERISTICS



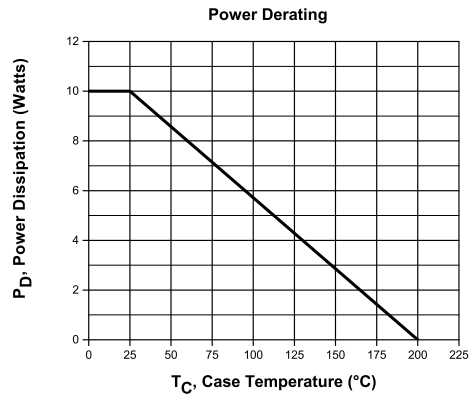
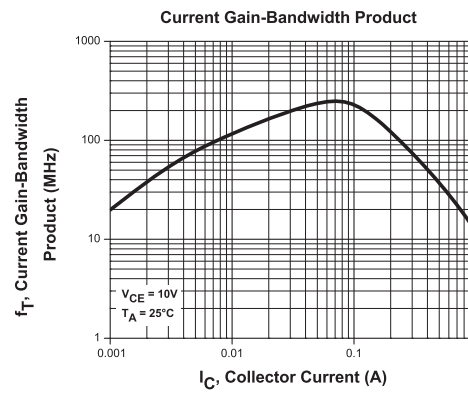
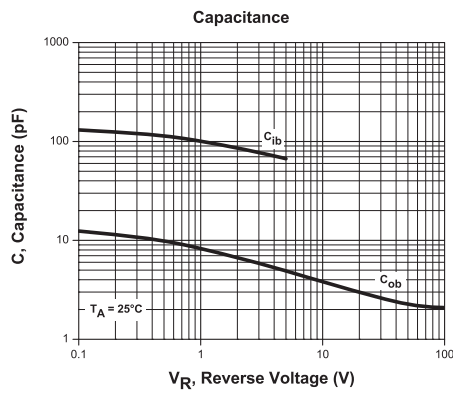
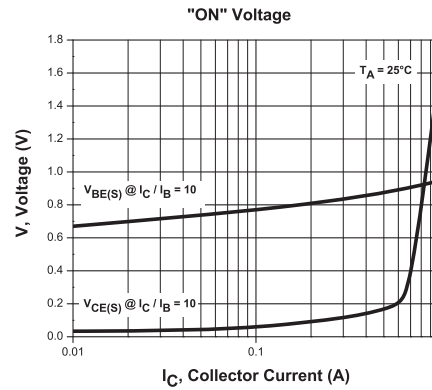
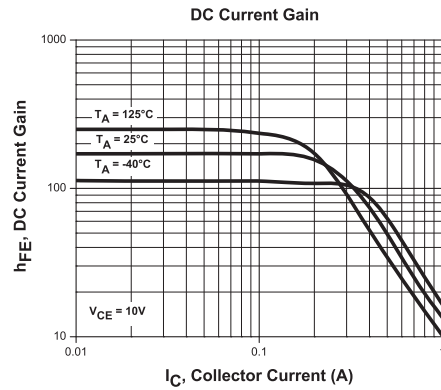
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**NPN TYPICAL ELECTRICAL CHARACTERISTICS**



R2 (2-December 2013)

## 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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