

**2N4427**  
**SILICON**  
**NPN RF TRANSISTOR**



**TO-39 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N4427 is a silicon NPN epitaxial planar RF transistor mounted in a hermetically sealed package designed for high frequency amplifier applications.

**MARKING: FULL PART NUMBER**

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

	SYMBOL		UNITS
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	2.0	V
Continuous Collector Current	$I_C$	400	mA
Continuous Base Current	$I_B$	400	mA
Power Dissipation	$P_D$	1.0	W
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$	3.5	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$

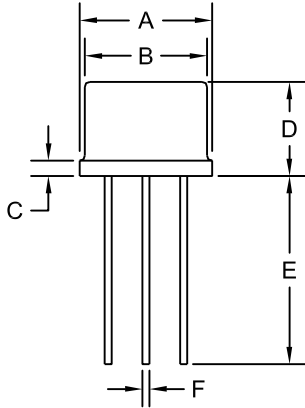
**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CEV}$	$V_{CE}=40\text{V}, V_{BE}=1.5\text{V}$		100	$\mu\text{A}$
$I_{CEV}$	$V_{CE}=12\text{V}, V_{BE}=1.5\text{V}, T_C=150^\circ\text{C}$		5.0	mA
$I_{CEO}$	$V_{CE}=12\text{V}$		20	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=2.0\text{V}$		100	$\mu\text{A}$
$BV_{CER}$	$I_C=5.0\text{mA}, R_{BE}=10\Omega$	40		V
$BV_{CEO}$	$I_C=5.0\text{mA}$	20		V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=20\text{mA}$		0.5	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=100\text{mA}$	10	200	
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=360\text{mA}$	5.0		
$f_T$	$V_{CE}=15\text{V}, I_C=50\text{mA}, f=200\text{MHz}$	500		MHz
$C_{ob}$	$V_{CB}=12\text{V}, I_E=0, f=1.0\text{MHz}$		4.0	pF
$G_{pe}$	$V_{CC}=12\text{V}, P_{in}=100\text{mW}, f=175\text{MHz}$	10		dB
$\eta$	$V_{CC}=12\text{V}, P_{out}=1.0\text{W}, f=175\text{MHz}$	50		%
$P_{in}$	$V_{CC}=12\text{V}, P_{out}=1.0\text{W}, f=175\text{MHz}$		100	mW

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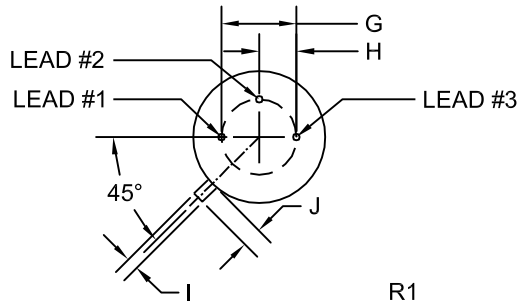


TO-39 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	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

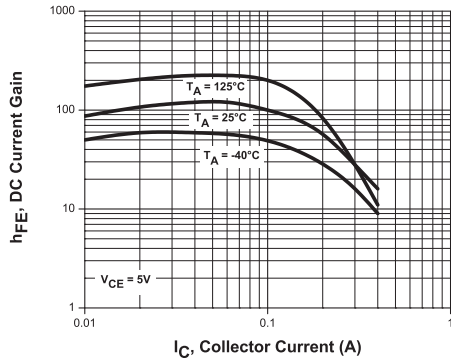
R1 (4-June 2013)

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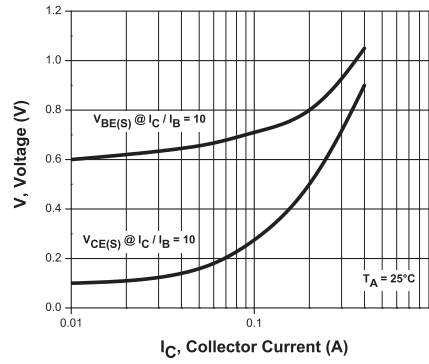


**TYPICAL ELECTRICAL CHARACTERISTICS**

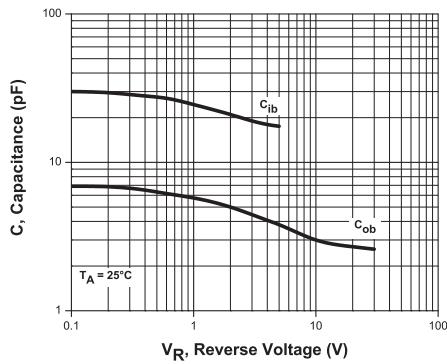
**DC Current Gain**



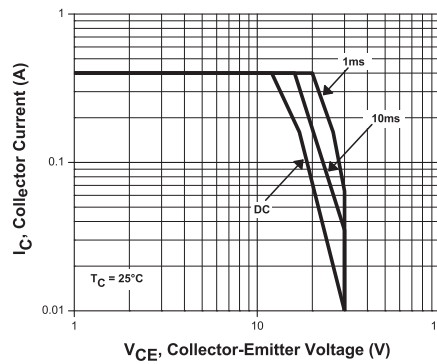
**"ON" Voltage**



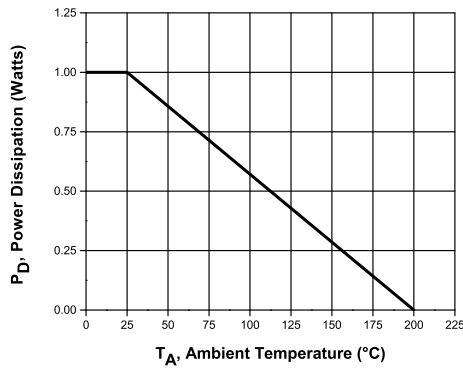
**Capacitance**



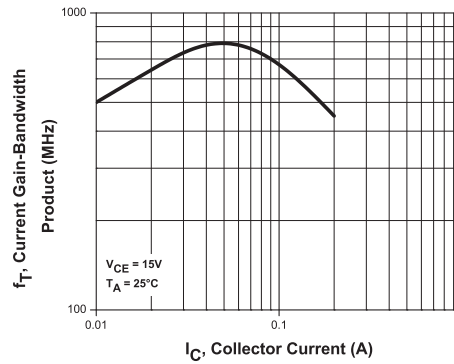
**Safe Operating Area**



**Power Derating**



**Current Gain-Bandwidth Product**



R1 (4-June 2013)

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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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- 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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