

2N5769  
PN2369A

**NPN SILICON TRANSISTOR**



**TO-92 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N5769 and PN2369A are epitaxial planar NPN Silicon Transistors designed for ultra high speed saturated switching applications.

**MARKING: FULL PART NUMBER**

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

Collector-Base Voltage
Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Peak Collector Current
Power Dissipation
Operating and Storage Junction Temperature

SYMBOL		UNITS
$V_{CBO}$	40	V
$V_{CES}$	40	V
$V_{CEO}$	15	V
$V_{EBO}$	4.5	V
$I_C$	200	mA
$I_{CM}$	500	mA
$P_D$	350	mW
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=20\text{V}$		400	nA
$I_{CBO}$	$V_{CB}=20\text{V}, T_A=125^\circ\text{C}$		30	$\mu\text{A}$
$I_{CES}$	$V_{CE}=20\text{V}$ (2N5769)		400	nA
$I_{EBO}$	$V_{EB}=4.5\text{V}$ (2N5769)		1.0	$\mu\text{A}$
$BV_{CBO}$	$I_C=10\mu\text{A}$	40		V
$BV_{CES}$	$I_C=10\mu\text{A}$	40		V
$BV_{CEO}$	$I_C=10\text{mA}$	15		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	4.5		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		200	mV
$V_{CE(SAT)}$	$I_C=30\text{mA}, I_B=3.0\text{mA}$		250	mV
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		500	mV
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	700	850	mV
$V_{BE(SAT)}$	$I_C=30\text{mA}, I_B=3.0\text{mA}$		1.15	V
$V_{BE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		1.6	V
$h_{FE}$	$V_{CE}=0.35\text{V}, I_C=10\text{mA}$ (2N5769)	40	120	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$ (PN2369A)	40	120	
$h_{FE}$	$V_{CE}=0.4\text{V}, I_C=30\text{mA}$	30		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$	20		

R1 (10-March 2011)

2N5769  
PN2369A

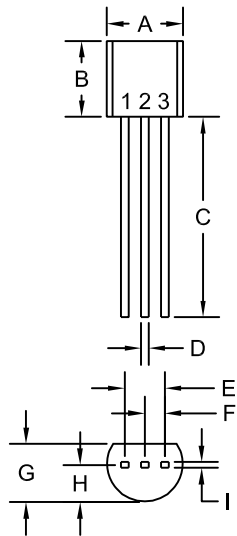
**NPN SILICON TRANSISTOR**



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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$f_T$	$V_{CE}=10\text{V}$ , $I_C=10\text{mA}$ , $f=100\text{MHz}$	500		MHz
$C_{ob}$	$V_{CB}=5.0\text{V}$ , $I_E=0$ , $f=140\text{kHz}$		4.0	pF
$C_{ib}$	$V_{EB}=5.0\text{V}$ , $I_C=0$ , $f=1.0\text{MHz}$ (PN2369A)		5.0	pF
$t_{on}$	$V_{CC}=3.0\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=3.0\text{mA}$ , $I_{B2}=1.5\text{mA}$		12	ns
$t_{off}$	$V_{CC}=3.0\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=3.0\text{mA}$ , $I_{B2}=1.5\text{mA}$		18	ns
$t_s$	$V_{CC}=10\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=I_{B2}=10\text{mA}$		13	ns

**TO-92 CASE - MECHANICAL OUTLINE**



R1

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.175	0.205	4.45	5.21
B	0.170	0.210	4.32	5.33
C	0.500	-	12.70	-
D	0.016	0.022	0.41	0.56
E	0.100		2.54	
F	0.050		1.27	
G	0.125	0.165	3.18	4.19
H	0.080	0.105	2.03	2.67
I	0.015		0.38	

TO-92 (REV: R1)

**LEAD CODE:**

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

**MARKING: FULL PART NUMBER**

R1 (10-March 2011)

## 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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