

2N3583  
2N3584  
2N3585

**SILICON  
NPN TRANSISTORS**



**TO-66 CASE**



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N3583 series devices are silicon NPN transistors designed for high speed switching and high voltage amplifier applications.

**MARKING: FULL PART NUMBER**

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

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

SYMBOL	2N3583	2N3584	2N3585	UNITS
$V_{CBO}$	250	375	500	V
$V_{CEO}$	175	250	300	V
$V_{EBO}$	6.0	6.0	6.0	V
$I_C$	1.0	2.0	2.0	A
$I_{CM}$		5.0		A
$I_B$		1.0		A
$P_D$		35		W
$T_J, T_{stg}$		-65 to +200		$^\circ\text{C}$
$\theta_{JC}$		5.0		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N3583		2N3584		2N3585		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
$I_{CEV}$	$V_{CE}=225\text{V}, V_{EB}=1.5\text{V}$	-	1.0	-	-	-	-	mA
$I_{CEV}$	$V_{CE}=340\text{V}, V_{EB}=1.5\text{V}$	-	-	-	1.0	-	-	mA
$I_{CEV}$	$V_{CE}=450\text{V}, V_{EB}=1.5\text{V}$	-	-	-	-	-	1.0	mA
$I_{CEV}$	$V_{CE}=225\text{V}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$	-	3.0	-	-	-	-	mA
$I_{CEV}$	$V_{CE}=300\text{V}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$	-	-	-	3.0	-	3.0	mA
$I_{CEO}$	$V_{CE}=150\text{V}$	-	10	-	5.0	-	5.0	mA
$I_{EBO}$	$V_{BE}=6.0\text{V}$	-	5.0	-	0.5	-	0.5	mA
$BV_{CEO}$	$I_C=200\text{mA}$	175	-	250	-	300	-	V
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=125\text{mA}$	-	5.0	-	0.75	-	0.75	V
$V_{BE(SAT)}$	$I_C=1.0\text{A}, I_B=100\text{mA}$	-	-	-	1.4	-	1.4	V
$V_{BE(ON)}$	$V_{CE}=10\text{V}, I_C=1.0\text{A}$	-	1.4	-	1.4	-	1.4	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=100\text{mA}$	40	-	40	-	40	-	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	40	200	-	-	-	-	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	-	-	8.0	80	8.0	80	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1.0\text{A}$	10	-	25	100	25	100	
$f_T$	$V_{CE}=10\text{V}, I_C=200\text{mA}, f=5.0\text{MHz}$	10	-	10	-	10	-	MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$	-	120	-	120	-	120	pF
$h_{fe}$	$V_{CE}=30\text{V}, I_C=100\text{mA}, f=1.0\text{kHz}$	25	350	-	-	-	-	
$t_r$	$V_{CC}=200\text{V}, I_C=1.0\text{A}, I_{B1}=100\text{mA}, R_L=200\Omega$	-	-	-	3.0	-	3.0	$\mu\text{s}$
$t_s$	$V_{CC}=200\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$	-	-	-	4.0	-	4.0	$\mu\text{s}$
$t_f$	$V_{CC}=200\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$	-	-	-	3.0	-	3.0	$\mu\text{s}$
$I_{S/b}$	$V_{CE}=100\text{V}$	350	-	350	-	350	-	mA

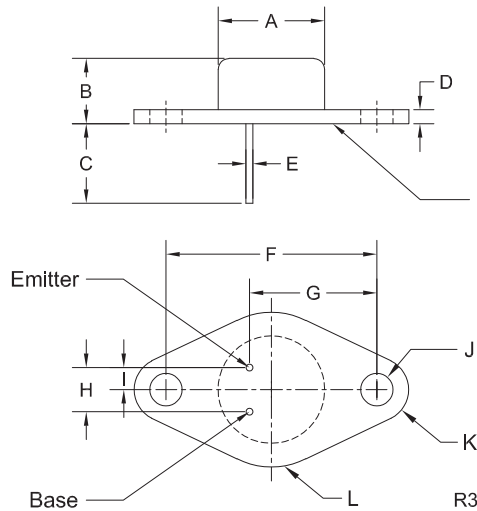
R3 (2-September 2014)

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 NPN TRANSISTORS



TO-66 CASE - MECHANICAL OUTLINE



MARKING:  
 FULL PART NUMBER

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.470	0.500	11.94	12.70
B	0.250	0.340	6.35	8.64
C	0.360	-	9.14	-
D	0.050	0.075	1.27	1.91
E (DIA)	0.028	0.034	0.71	0.86
F	0.956	0.964	24.28	24.48
G	0.570	0.590	14.48	14.99
H	0.190	0.210	4.83	5.33
I	0.093	0.107	2.36	2.72
J (DIA)	0.142	0.152	3.61	3.86
K (RAD)	0.141		3.58	
L (RAD)	0.345		8.76	

TO-66 (REV:R3)

R3 (2-September 2014)

## 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

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

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

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