

2N5783 PNP
2N5786 NPN

**COMPLEMENTARY SILICON
POWER TRANSISTORS**



TO-39 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5783 and 2N5786 types are Complementary Silicon Power Transistors designed for general purpose switching and amplifier applications.

MARKING: FULL PART NUMBER

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

Collector-Base Voltage
Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Continuous Base Current
Power Dissipation
Power Dissipation ($T_A=25^{\circ}\text{C}$)
Operating and Storage Junction Temperature
Thermal Resistance
Thermal Resistance

SYMBOL

V_{CBO}	45
V_{CER}	45
V_{CEO}	40
V_{EBO}	3.5
I_C	3.5
I_B	1.0
P_D	10
P_D	1.0
T_J, T_{stg}	-65 to +200
θ_{JC}	17.5
θ_{JA}	175

UNITS

V
V
V
V
A
A
W
W
 $^{\circ}\text{C}$
 $^{\circ}\text{C/W}$
 $^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEV}	$V_{CE}=45\text{V}, V_{BE}=1.5\text{V}$		10	μA
I_{CEV}	$V_{CE}=45\text{V}, V_{BE}=1.5\text{V}, T_C=150^{\circ}\text{C}$		1.0	mA
I_{CER}	$V_{CE}=40\text{V}, R_{BE}=100\Omega$		10	μA
I_{CER}	$V_{CE}=40\text{V}, R_{BE}=100\Omega, T_C=150^{\circ}\text{C}$		1.0	mA
I_{CEO}	$V_{CE}=25\text{V}$		100	μA
I_{EBO}	$V_{EB}=3.5\text{V}$		10	μA
BV_{CER}	$I_C=10\text{mA}, R_{BE}=100\Omega$	45		V
BV_{CEO}	$I_C=10\text{mA}$	40		V
$V_{CE(SAT)}$	$I_C=1.6\text{A}, I_B=160\text{mA}$		1.0	V
$V_{CE(SAT)}$	$I_C=3.2\text{A}, I_B=800\text{mA}$		2.0	V
$V_{BE(ON)}$	$V_{CE}=2.0\text{V}, I_C=1.6\text{A}$		1.5	V
h_{FE}	$V_{CE}=2.0\text{V}, I_C=1.6\text{A}$	20	150	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=3.2\text{A}$	4.0		
f_T	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=4.0\text{MHz}$ (2N5783)	8.0	60	MHz
f_T	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=200\text{kHz}$ (2N5786)	1.0	4.0	MHz
h_{fe}	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=1.0\text{kHz}$	25		
t_{on}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5783)		0.5	μs
t_{on}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5786)		5.0	μs
t_{off}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5783)		2.5	μs
t_{off}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5786)		15	μs

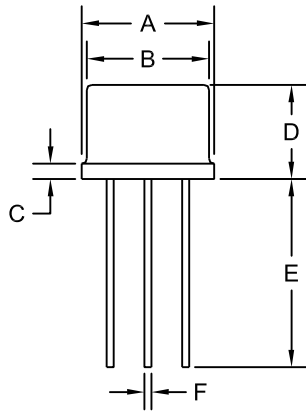
R1 (21-September 2011)

2N5783 PNP
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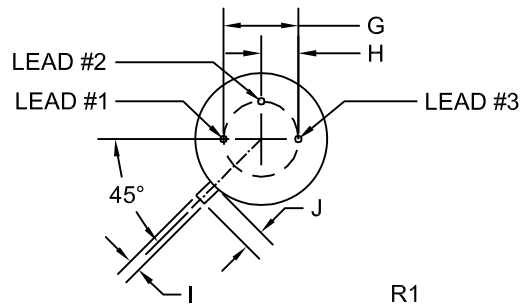


TO-39 CASE - MECHANICAL OUTLINE



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

R1 (21-September 2011)

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).

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