

2N4033

PNP SILICON TRANSISTOR



TO-39 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N4033 type is a PNP silicon transistor manufactured by the epitaxial planar process, designed for high current general purpose amplifier applications.

**MARKING: FULL PART NUMBER**

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

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

**SYMBOL**

$V_{CBO}$	80
$V_{CEO}$	80
$V_{EBO}$	5.0
$I_C$	1.0
$P_D$	1.25
$P_D$	7.0
$T_J, T_{stg}$	-65 to +200
$\theta_{JA}$	140
$\theta_{JC}$	20

**UNITS**

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

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

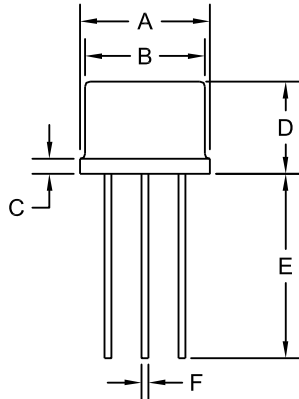
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=60\text{V}$		50	nA
$I_{CBO}$	$V_{CB}=60\text{V}, T_A=150^\circ\text{C}$		50	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$		10	$\mu\text{A}$
$BV_{CBO}$	$I_C=10\mu\text{A}$	80		V
$BV_{CEO}$	$I_C=10\text{mA}$	80		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	5.0		V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.15	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.50	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.90	V
$V_{BE(ON)}$	$V_{CE}=0.5\text{V}, I_C=500\text{mA}$		1.10	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=0.1\text{mA}$	75		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=100\text{mA}$	100	300	
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=500\text{mA}$	70		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{A}$	25		
$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}$	100	400	MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		20	pF
$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		110	pF
$t_{on}$	$I_C=500\text{mA}, I_{B1}=50\text{mA}$		100	ns
$t_s$	$I_C=500\text{mA}, I_{B1}=I_{B2}=50\text{mA}$		350	ns
$t_f$	$I_C=500\text{mA}, I_{B1}=I_{B2}=50\text{mA}$		50	ns

R1 (15-March 2012)

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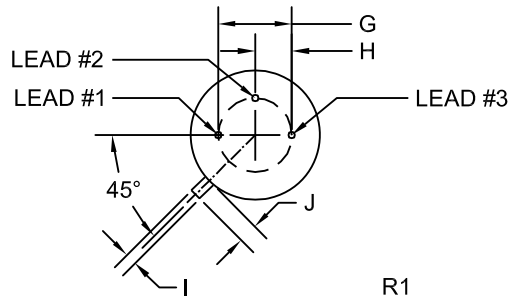


**TO-39 CASE - MECHANICAL OUTLINE**



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 (15-March 2012)