

2N4033

PNP SILICON TRANSISTOR



TO-39 CASE



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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
Θ_{JA}	140
Θ_{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	μA
I_{EBO}	$V_{EB}=5.0\text{V}$		10	μA
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

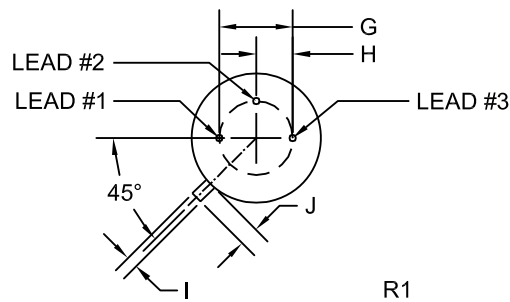
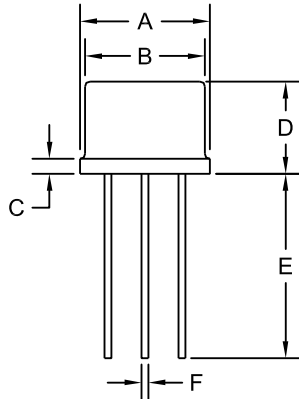
R1 (15-March 2012)

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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)

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