

2N3117

NPN SILICON TRANSISTOR



TO-18 CASE

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N3117 type is an NPN silicon transistor designed for 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
Operating and Storage Junction Temperature

SYMBOL		UNITS
$V_{CB0}$	60	V
$V_{CEO}$	60	V
$V_{EBO}$	6.0	V
$I_C$	50	mA
$P_D$	360	mW
$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$

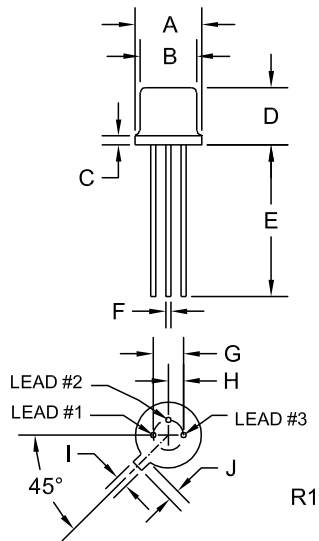
**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=45\text{V}$		10	nA
$I_{CBO}$	$V_{CB}=45\text{V}, T_A=150^\circ\text{C}$		10	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$		10	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$	60		V
$BV_{CEO}$	$I_C=10\text{mA}$	60		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=1.0\text{mA}, I_B=100\mu\text{A}$		0.35	V
$V_{BE(ON)}$	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$		0.7	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\mu\text{A}$	100		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$	250	500	
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}, T_A=-55^\circ\text{C}$	50		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$	300		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	400		
$h_{fe}$	$V_{CE}=5.0\text{V}, I_C=0.5\text{mA}, f=30\text{MHz}$	2.0		
$C_{ob}$	$V_{CB}=5.0\text{V}, I_E=0$		4.5	pF
$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0$		6.0	pF
NF	$V_{CE}=5.0\text{V}, I_C=5.0\mu\text{A}, f=10\text{kHz}$ $BW=1.0\text{kHz}, R_S=50\text{k}\Omega$		1.0	dB

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**TO-18 CASE - MECHANICAL OUTLINE**



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.178	0.195	4.52	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
I	0.036	0.046	0.91	1.17
J	0.028	0.048	0.71	1.22

TO-18 (REV: R1)

**LEAD CODE:**

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

**MARKING:**

**FULL PART NUMBER**

R0 (4-September 2012)