Central™
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Manufacturers of World Class Discrete Semiconductors

2N2221
2N2222

NPN SILICON TRANSISTOR

JEDEC TO-18 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N2221, 2N2222 types are Silicon NPN Planar Epitaxial Transistors designed for small signal general purpose and switching applications.

MAXIMUM RATINGS: (T_A=25°C)

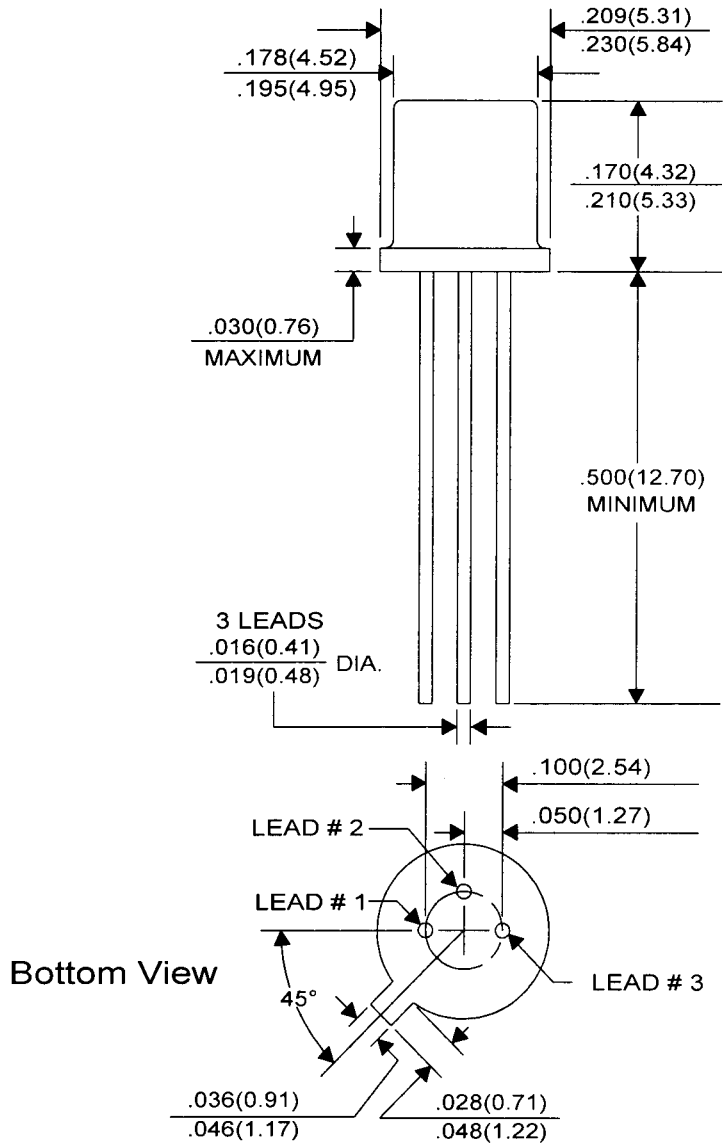
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	800	mA
Power Dissipation	P_D	400	mW
Power Dissipation (T_C=25°C)	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	438	°C/W
Thermal Resistance	Θ_{JC}	146	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

		2N2221		2N2222		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10		10	nA
I_{CBO}	V_{CB}=50V, T_A=150°C		10		10	μA
I_{EBO}	V_{EB}=3.0V		10		10	nA
BV_{CBO}	I_C=10μA	60		60		V
BV_{CEO}	I_C=10mA	30		30		V
BV_{EBO}	I_E=10μA	5.0		5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.3	0.6	1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	20		35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	25		50		
h_{FE}	V_{CE}=10V, I_C=10mA	35		75		
h_{FE}	V_{CE}=10V, I_C=10mA, T_A=-55°C	15		35		
h_{FE}	V_{CE}=10V, I_C=150mA	40	120	100	300	
h_{FE}	V_{CE}=1.0V, I_C=150mA	20		50		
h_{FE}	V_{CE}=10V, I_C=500mA	25		40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	250		250		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=100kHz		8.0		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=100kHz		30		30	pF

(See Reverse Side)

JEDEC TO-18 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

Lead Code:

1. Emitter
2. Base
3. Collector

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