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Manufacturers of World Class Discrete Semiconductors

PN2221
PN2221A
PN2222
PN2222A

NPN Silicon Transistor

JEDEC TO-92 Case

DESCRIPTION

The CENTRAL SEMICONDUCTOR PN2221,A,PN2222,A are Silicon NPN Planar Epitaxial Transistors designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

		PN2221 PN2222	PN2221A PN2222A	
Collector-Base Voltage	V _{CB0}	60	75	V _{dc}
Emitter-Base Voltage	V _{EB0}	5.0	6.0	V _{dc}
Collector-Emitter Voltage	V _{CE0}	30	40	V _{dc}
Collector Current-Continuous	I _C	800		mA _{dc}
Power Dissipation	P _T	625		mW
Operating and Storage Junction Temperature	T _J ,T _{stg}	-65 TO +150		°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Symbol	Test Conditions	PN2221 PN2222		PN2221A PN2222A		Unit
		Min	Max	Min	Max	
I _{CB0}	V _{CB} =50V		10			nA
I _{CB0}	V _{CB} =60V			10		nA
I _{CEV}	V _{CE} =60V, V _{EB} =3.0V			10		nA
I _{EB0}	V _{EB} =3.0V		10	10		nA
BV _{CB0}	I _C =10uA	60		75		V
BV _{EB0}	I _E =10uA	5.0		6.0		V
BV _{CE0}	I _C =10mA	30		40		V
V _{CE} (s)	I _C =150mA, I _B =15mA		0.4		0.3	V
V _{CE} (s)	I _C =500mA, I _B =50mA		1.6		1.0	V
V _{BE} (s)	I _C =150mA, I _B =15mA		1.3		1.2	V
V _{BE} (s)	I _C =500mA, I _B =50mA		2.6		2.0	V
		PN2221 PN2221A		PN2222 PN2222A		Unit
		Min	Max	Min	Max	
h _{FE}	V _{CE} =10V, I _C =100uA	20		35		-
h _{FE}	V _{CE} =10V, I _C =1mA	25		50		-
h _{FE}	V _{CE} =10V, I _C =10mA	35		75		-
h _{FE}	V _{CE} =10V, I _C =150mA	40	120	100	300	-
h _{FE}	V _{CE} =1V, I _C =150mA	20		50		-
h _{FE}	V _{CE} =10V, I _C =500mA (PN2221, PN2222 Only)	20		30		-
h _{FE}	V _{CE} =10V, I _C =500mA (PN2221A, PN2222A Only)	25		40		-
f _T	V _{CE} =20V, I _C =20mA, f=100MHz (Except PN2222A)	250		250		MHz
f _T	V _{CE} =20V, I _C =20mA, f=100MHz (PN2222A only)			300		MHz
C _{ob}	V _{CB} =10V, f=100kHz	8.0		8.0		pF
t _{ON}	V _{CC} =30V, I _C =150mA, I _B =15mA	35		35		ns
t _{OFF}	V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA	285		285		ns