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Manufacturers of World Class Discrete Semiconductors

MJE220 THRU MJE225

NPN SILICON POWER TRANSISTOR

JEDEC TO-126 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR MJE220 series types are NPN silicon power transistors manufactured by the epitaxial-base process designed for general purpose amplifier and switching applications.

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

	SYMBOL	MJE220 MJE221 MJE222	MJE223 MJE224 MJE225	UNIT
Collector-Base Voltage	V _{CB0}	60	80	V
Collector-Emitter Voltage	V _{CE0}	40	60	V
Emitter-Base Voltage	V _{EB0}	7.0	7.0	V
Collector Current	I _C	4.0	4.0	A
Collector Current (PEAK)	I _{CM}	8.0	8.0	A
Base Current	I _B	1.0	1.0	A
Power Dissipation	P _D	1.5	1.5	W
Power Dissipation (T _C =25°C)	P _D	15	15	W
Operating and Storage Junction Temperature	T _J , T _{STG}	-65 TO +150		°C
Thermal Resistance	θ _{JA}	83.4		°C/W
Thermal Resistance	θ _{JC}	8.34		°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS		MIN	MAX	UNIT
I _{CB0}	V _{CB} =60V	(MJE220, MJE221, MJE222)		0.1	μA
I _{CB0}	V _{CB} =80V	(MJE223, MJE224, MJE225)		0.1	μA
I _{CB0}	V _{CB} =60V, T _C =125°C	(MJE220, MJE221, MJE222)		0.1	mA
I _{CB0}	V _{CB} =80V, T _C =125°C	(MJE223, MJE224, MJE225)		0.1	mA
I _{EB0}	V _{BE} =7.0V			0.1	μA
BV _{CE0}	I _C =10mA	(MJE220, MJE221, MJE222)	40		V
BV _{CE0}	I _C =10mA	(MJE223, MJE224, MJE225)	60		V
V _{CE} (SAT)	I _C =500mA, I _B =50mA			0.3	V
V _{CE} (SAT)	I _C =1.0A, I _B =100mA	(MJE221, MJE224)		0.6	V
V _{CE} (SAT)	I _C =2.0A, I _B =200mA	(MJE220, MJE223)		0.8	V
V _{CE} (SAT)	I _C =4.0A, I _B =1.0mA			2.5	V
V _{BE} (SAT)	I _C =2.0A, I _B =200mA			1.8	V
V _{BE} (ON)	V _{CE} =1.0V, I _C =500mA			1.5	V
h _{FE}	V _{CE} =1.0V, I _C =200mA	(MJE220, MJE223)	40	200	
h _{FE}	V _{CE} =1.0V, I _C =200mA	(MJE221, MJE224)	40	150	
h _{FE}	V _{CE} =1.0V, I _C =200mA	(MJE222, MJE225)	25	-	
h _{FE}	V _{CE} =1.0V, I _C =1.0A	(MJE221, MJE224)	20	-	
h _{FE}	V _{CE} =1.0V, I _C =1.0A	(MJE222, MJE225)	10	-	
h _{FE}	V _{CE} =1.0V, I _C =2.0A	(MJE220, MJE223)	20	-	
f _T	V _{CE} =10V, I _C =100mA, f=10MHz		10 TYP		MHz
C _{ob}	V _{CB} =10V, I _E =0, f=0.1MHz			50	pF