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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_{CBO}	60	80	V
Collector-Emitter Voltage	V_{CEO}	40	60	V
Emitter-Base Voltage	V_{EBO}	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_{CBO}	V_{CB}=60V	(MJE220, MJE221, MJE222)		0.1	μA
I_{CBO}	V_{CB}=80V	(MJE223, MJE224, MJE225)		0.1	μA
I_{CBO}	V_{CB}=60V, T_C=125°C	(MJE220, MJE221, MJE222)		0.1	mA
I_{CBO}	V_{CB}=80V, T_C=125°C	(MJE223, MJE224, MJE225)		0.1	mA
I_{EBO}	V_{BE}=7.0V			0.1	μA
BVCEO	I_C=10mA	(MJE220, MJE221, MJE222)	40		V
BVCEO	I_C=10mA	(MJE223, MJE224, MJE225)	60		V
VCE(SAT)	I_C=500mA, I_B=50mA			0.3	V
VCE(SAT)	I_C=1.0A, I_B=100mA	(MJE221, MJE224)		0.6	V
VCE(SAT)	I_C=2.0A, I_B=200mA	(MJE220, MJE223)		0.8	V
VCE(SAT)	I_C=4.0A, I_B=1.0mA			2.5	V
VBE(SAT)	I_C=2.0A, I_B=200mA			1.8	V
VBE(ON)	V_{CE}=1.0V, I_C=500mA			1.5	V
hFE	V_{CE}=1.0V, I_C=200mA	(MJE220, MJE223)	40	200	
hFE	V_{CE}=1.0V, I_C=200mA	(MJE221, MJE224)	40	150	
hFE	V_{CE}=1.0V, I_C=200mA	(MJE222, MJE225)	25	-	
hFE	V_{CE}=1.0V, I_C=1.0A	(MJE221, MJE224)	20	-	
hFE	V_{CE}=1.0V, I_C=1.0A	(MJE222, MJE225)	10	-	
hFE	V_{CE}=1.0V, I_C=2.0A	(MJE220, MJE223)	20	-	
fT	V_{CE}=10V, I_C=100mA, f=10MHz		10 TYP		MHz
Cob	V_{CB}=10V, I_E=0, f=0.1MHz			50	pF