New Jersey Semi-Conductor Products, Inc.

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MJE240 THRU MJE244 NPN
MJE250 THRU MJE254 PNP

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COMPLEMENTARY SILICON POWER TRANSISTORS

JEDEC TO-126 GASE

MJE240, MJE250 series types are complementary silicon power transistors designed for audio amplifier and switching applications.

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

	SYMBOL	MJE240, MJE241 MJE242, MJE250 MJE251, MJE252	MJE243, MJE244 MJE253, MJE254	UNIT
Collector-Base Voltage	V_{CBO}	80	100	V
Collector-Emitter Voltage	V_{CEO}	80	100	V
Emitter-Base Voltage	V_{EBO}	7.0		V
Collector Current	I_C	4.0		A
Collector Current (PEAK)	I_{CM}	8.0		A
Base Current	I_B	1.0		A
Power Dissipation	P_D	1.5		W
Power Dissipation (T_C=25°C)	P_D	15		W
Operating and Storage Junction Temperature	T_J, T_{STG}	-65 to +150		°C
Thermal Resistance	θJA	83.4		°C/W
Thermal Resistance	θJC	8.34		°C/W

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_{CBO}	V_{CB}=80V, (MJE240, 241, 242, 250, 251, 252)		0.1	μA
I_{CBO}	V_{CB}=100V, (MJE243, 244, 253, 254)		0.1	μA
I_{CBO}	V_{CB}=80V, T_C=125°C (MJE240, 241, 242, 250, 251, 252)		0.1	mA
I_{CBO}	V_{CB}=100V, T_C=125°C (MJE243, 244, 253, 254)		0.1	mA
I_{EBO}	V_{BE}=7.0V		0.1	μA
BV_{CEO}	I_C=10mA, (MJE240, 241, 242, 250, 251, 252)	80		V
BV_{CEO}	I_C=10mA, (MJE243, 244, 253, 254)	100		V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.3	V
$V_{CE(SAT)}$	I_C=1.0A, I_B=100mA, (MJE241, 243, 251, 253)		0.6	V
$V_{CE(SAT)}$	I_C=2.0A, I_B=200mA, (MJE240, 250)		0.8	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, (MJE240, 250)	40	200	
h_{FE}	V_{CE}=1.0V, I_C=200mA, (MJE241, 251)	40	180	
h_{FE}	V_{CE}=1.0V, I_C=200mA, (MJE243, 253)	40	180	
h_{FE}	V_{CE}=1.0V, I_C=200mA, (MJE242, 244, 252, 254)	25	-	
h_{FE}	V_{CE}=1.0V, I_C=1.0A, (MJE241, 251)	20	-	
h_{FE}	V_{CE}=1.0V, I_C=1.0A, (MJE243, 253)	15	-	
h_{FE}	V_{CE}=1.0V, I_C=1.0A, (MJE242, 244, 252, 254)	10	-	
h_{FE}	V_{CE}=1.0V, I_C=2.0A, (MJE240, 250)	15	-	
f_T	V_{CE}=10V, I_C=1.0A f=1.0MHz	2.0		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz, (NPN types)		50	pF
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz, (PNP types)		70	pF