Central Semiconductor Corp.
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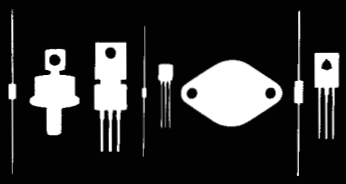

MJE13008
MJE13009

NPN SILICON TRANSISTOR

JEDEC TO-220 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR MJE13008, MJE13009 types are Silicon NPN Transistors designed for high voltage, high speed switching applications.

MAXIMUM RATINGS (T_C=25°C)

	SYMBOL	MJE13008	MJE13009	UNIT
Collector-Emitter Voltage (V_{BE}=1.5V)	V_{CEV}	600	700	V
Collector-Emitter Voltage	V_{CEO}	300	400	V
Emitter Base Voltage	V_{EBO}	9.0	9.0	V
Emitter Current	I_E	18	18	A
Emitter Current (PEAK)	I_{EM}	36	36	A
Collector Current	I_C	12	12	A
Collector Current (PEAK)	I_{CM}	24	24	A
Base Current	I_B	6.0	6.0	A
Base Current (PEAK)	I_{BM}	12	12	A
Power Dissipation	P_D	100	100	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 TO +150		°C
Thermal Resistance	θJC	1.25	1.25	°C/W

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
BV_{CEO} (MJE13008)	I_C=10mA	300		V
BV_{CEO} (MJE13009)	I_C=10mA	400		V
I_{CEV}	V_{CE}=Rated V_{CEV}, V_{BE}(OFF)=1.5V		1.0	mA
I_{CEV}	V_{CE}=Rated V_{CEV}, V_{BE}(OFF)=1.5V, T_C=100°C		5.0	mA
I_{EBO}	V_{EB}=9.0V		1.0	mA
$V_{CE(SAT)}$	I_C=5.0A, I_B=1.0A		1.0	V
$V_{CE(SAT)}$	I_C=8.0A, I_B=1.6A		1.5	V
$V_{CE(SAT)}$	I_C=12A, I_B=3.0A		3.0	V
$V_{CE(SAT)}$	I_C=8.0A, I_B=1.6A, T_C=100°C		2.0	V
$V_{BE(SAT)}$	I_C=5.0A, I_B=1.0A		1.2	V
$V_{BE(SAT)}$	I_C=8.0A, I_B=1.6A		1.6	V
$V_{BE(SAT)}$	I_C=8.0A, I_B=1.6A, T_C=100°C		1.5	V
h_{FE}	V_{CE}=5.0V, I_C=5.0A	8.0	40	
h_{FE}	V_{CE}=5.0V, I_C=8.0A	6.0	30	
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	4.0		MHz
t_{ON}	V_{CC}=125V, I_C=8.0A, I_{B1}=I_{B2}=1.6A, PW=25µs		1.1	µs
t_{OFF}	V_{CC}=125V, I_C=8.0A, I_{B1}=I_{B2}=1.6A, PW=25µs		3.7	µs
t_{sv}	V_{CL}=300V, $V_{BE(OFF)}$=5.0V, I_C=8.0A, I_{B1}=1.6A, T_C=100°c		2.3	µs
t_c	V_{CL}=300V, $V_{BE(OFF)}$=5.0V, I_C=8.0A, I_{B1}=1.6A, T_C=100°c		0.7	µs
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz	190 TYP		pF
$I_{s/b}$ (Forward biased)	V_{CE}=25V, t=1.0s	4.0		A
$I_{s/b}$ (Clamp Inductive)	V_{CE}=350V, I_{B1}=2.5A, $V_{BE(OFF)}$= 9.0V, t=1.0s, T_C=100°C	12		A

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