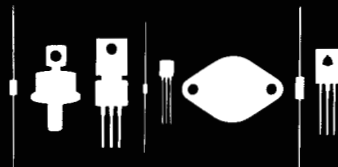


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145 Adams Avenue
Hauppauge, New York 11788



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 ($T_C=25^\circ\text{C}$)

	SYMBOL	MJE13008	MJE13009	UNIT
Collector-Emitter Voltage ($V_{BE}=1.5\text{V}$)	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		$^\circ\text{C}$
Thermal Resistance	θ_{JC}	1.25	1.25	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$ unless otherwise noted)

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

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