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Manufacturers of World Class Discrete Semiconductors

MJE13007A

NPN SILICON POWER TRANSISTOR

JEDEC TO-220 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR MJE13007A type is a Silicon NPN Power Transistor designed for high voltage, high speed switching applications.

MAXIMUM RATINGS ($T_C = 25°C$)

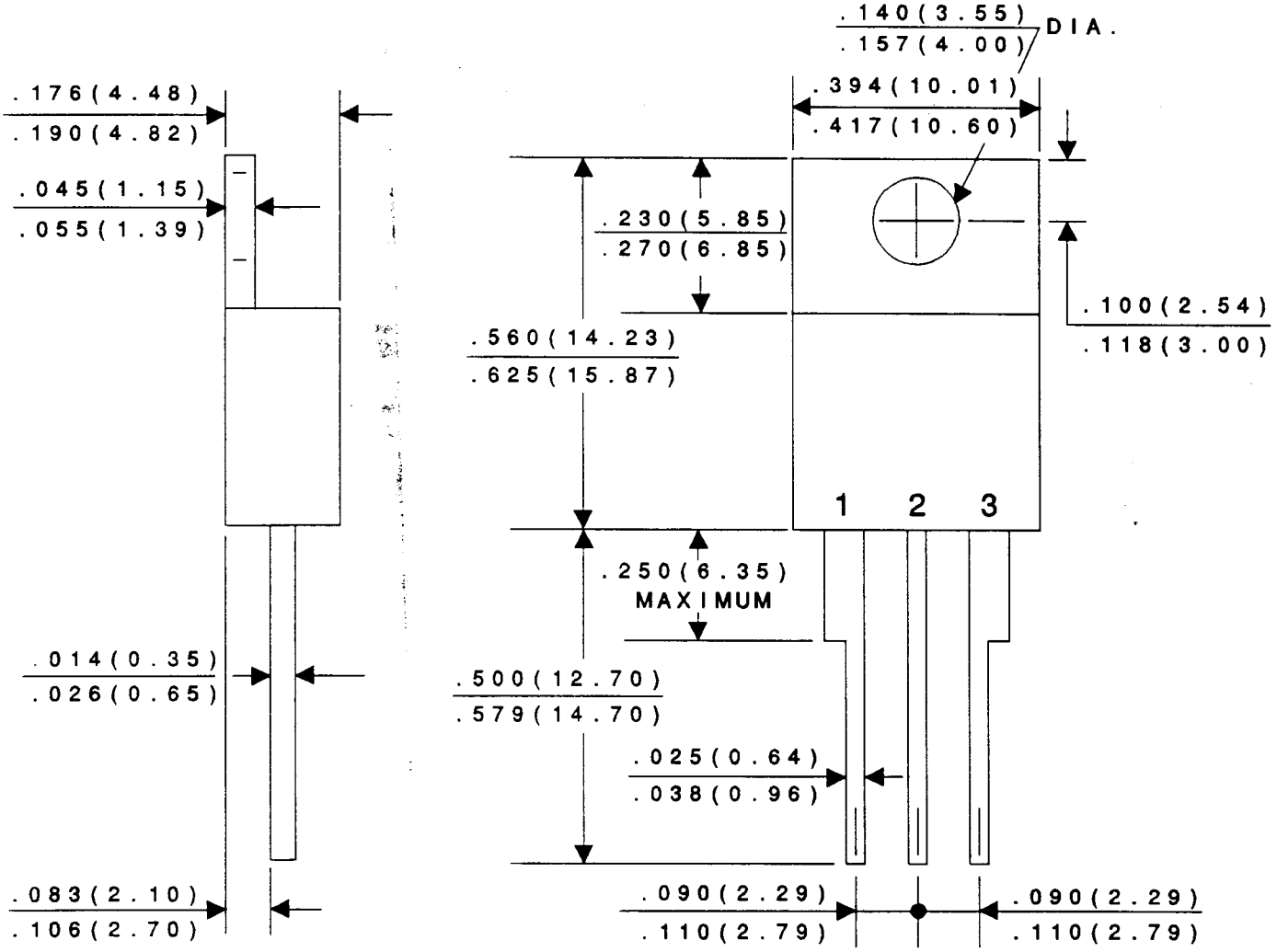
	SYMBOL		UNITS
Collector-Emitter Voltage	V_{CEV}	850	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	9.0	V
Collector Current	I_C	8.0	A
Peak Collector Current	I_{CM}	16	A
Base Current	I_B	4.0	A
Peak Base Current	I_{BM}	8.0	A
Emitter Current	I_E	12	A
Peak Emitter Current	I_{EM}	24	A
Power Dissipation	P_D	80	W
Power Dissipation ($T_A = 25°C$)	P_D	2.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	1.56	°C/W
Thermal Resistance	Θ_{JA}	62.5	°C/W

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CEV}	$V_{CE} = 850V$, $V_{BE(off)} = 1.5V$			1.0	mA
I_{CEV}	$V_{CE} = 850V$, $V_{BE(off)} = 1.5V$, $T_C = 100°C$			5.0	mA
I_{EBO}	$V_{EB} = 9.0V$			1.0	mA
BV_{CEO}	$I_C = 10mA$	400			V
$V_{CE(SAT)}$	$I_C = 2.0A$, $I_B = 400mA$			1.0	V
$V_{CE(SAT)}$	$I_C = 5.0A$, $I_B = 1.0A$			1.5	V
$V_{CE(SAT)}$	$I_C = 5.0A$, $I_B = 1.0A$, $T_C = 100°C$			2.0	V
$V_{CE(SAT)}$	$I_C = 8.0A$, $I_B = 2.0A$			3.0	V
$V_{BE(SAT)}$	$I_C = 2.0A$, $I_B = 400mA$			1.2	V
$V_{BE(SAT)}$	$I_C = 5.0A$, $I_B = 1.0A$			1.6	V
$V_{BE(SAT)}$	$I_C = 5.0A$, $I_B = 1.0A$, $T_C = 100°C$			1.5	V
h_{FE}	$V_{CE} = 5.0V$, $I_C = 2.0A$	8.0		60	
h_{FE}	$V_{CE} = 5.0V$, $I_C = 5.0A$	5.0		30	
f_T	$V_{CE} = 10V$, $I_C = 500mA$, $f = 1.0MHz$	4.0			MHz
C_{ob}	$V_{CB} = 10V$, $I_E = 0$, $f = 1.0MHz$		110		pF
t_d	$V_{CC} = 125V$, $I_C = 5.0A$, $I_{B1} = I_{B2} = 1.0A$, $tp = 25\mu s$, Duty Cycle≤1%			0.1	μs
t_r	$V_{CC} = 125V$, $I_C = 5.0A$, $I_{B1} = I_{B2} = 1.0A$, $tp = 25\mu s$, Duty Cycle≤1%			1.5	μs
t_s	$V_{CC} = 125V$, $I_C = 5.0A$, $I_{B1} = I_{B2} = 1.0A$, $tp = 25\mu s$, Duty Cycle≤1%			3.0	μs
t_f	$V_{CC} = 125V$, $I_C = 5.0A$, $I_{B1} = I_{B2} = 1.0A$, $tp = 25\mu s$, Duty Cycle≤1%			0.7	μs

(SEE REVERSE SIDE)

JEDEC TO-220 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER

TAB IS COMMON TO
LEAD 2.

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