

## MJE15032 (NPN), MJE15033 (PNP)

### Complementary Silicon Plastic Power Transistors

Designed for use as high-frequency drivers in audio amplifiers.

#### Features

- DC Current Gain Specified to 5.0 Amperes  
 $h_{FE} = 70$  (Min) @  $I_C = 0.5$  Adc  
 $= 10$  (Min) @  $I_C = 2.0$  Adc
- Collector-Emitter Sustaining Voltage –  
 $V_{CEO(sus)} = 250$  Vdc (Min) – MJE15032, MJE15033
- High Current Gain – Bandwidth Product  
 $f_T = 30$  MHz (Min) @  $I_C = 500$  mAdc
- TO-220AB Compact Package
- Epoxy Meets UL 94 V-0 @ 0.125 in
- BSD Ratings: Machine Model C  
Human Body Model 3B

**8.0 AMPERES  
POWER TRANSISTORS  
COMPLEMENTARY SILICON  
250 VOLTS, 50 WATTS**

#### MAXIMUM RATINGS

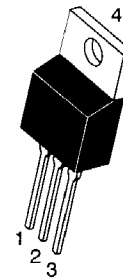
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	250	Vdc
Collector-Base Voltage	$V_{CB}$	250	Vdc
Emitter-Base Voltage	$V_{EB}$	5.0	Vdc
Collector Current – Continuous – Peak	$I_C$	8.0 16	Adc
Base Current	$I_B$	2.0	Adc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	50 0.40	W W/ $^\circ\text{C}$
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	2.0 0.016	W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$

#### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	2.5	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	62.5	$^\circ\text{C}/\text{W}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



TO-220



## MJE15032 (NPN), MJE15033 (PNP)

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Sustaining Voltage (Note 1) ( $I_C = 10\text{ mA}$ , $I_B = 0$ )	$V_{CEO(sus)}$	250	-	Vdc
Collector Cutoff Current ( $V_{CB} = 250\text{ Vdc}$ , $I_E = 0$ )	$I_{CBO}$	-	10	$\mu\text{A}$
Emitter Cutoff Current ( $V_{BE} = 5.0\text{ Vdc}$ , $I_C = 0$ )	$I_{EBO}$	-	10	$\mu\text{A}$
<b>ON CHARACTERISTICS (Note 1)</b>				
DC Current Gain ( $I_C = 0.5\text{ A}$ , $V_{CE} = 5.0\text{ Vdc}$ ) ( $I_C = 1.0\text{ A}$ , $V_{CE} = 5.0\text{ Vdc}$ ) ( $I_C = 2.0\text{ A}$ , $V_{CE} = 5.0\text{ Vdc}$ )	$h_{FE}$	70 50 10	- - -	-
Collector-Emitter Saturation Voltage ( $I_C = 1.0\text{ A}$ , $I_B = 0.1\text{ A}$ )	$V_{CE(sat)}$	-	0.5	Vdc
Base-Emitter On Voltage ( $I_C = 1.0\text{ A}$ , $V_{CE} = 5.0\text{ Vdc}$ )	$V_{BE(on)}$	-	1.0	Vdc
<b>DYNAMIC CHARACTERISTICS</b>				
Current Gain - Bandwidth Product (Note 2) ( $I_C = 500\text{ mA}$ , $V_{CE} = 10\text{ Vdc}$ , $f_{test} = 1.0\text{ MHz}$ )	$f_T$	30	-	MHz

1. Pulse Test: Pulse Width  $\leq 300\ \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

2.  $f_T = |h_{fe}| \cdot f_{test}$ .