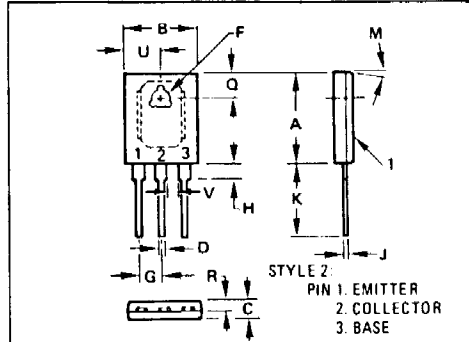
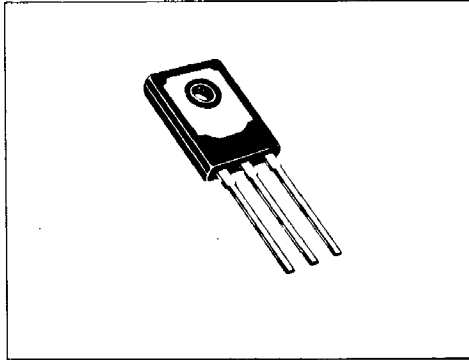


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NPN
MJE1660, MJE1661

15 AMPERE
POWER TRANSISTORS
SILICON
40-60 VOLTS
90 WATTS



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	16.13	16.38	0.635	0.645
B	12.57	12.83	0.495	0.505
C	3.18	3.43	0.125	0.135
D	1.09	1.24	0.043	0.049
F	3.51	3.76	0.138	0.148
G	4.22 BSC		0.166 BSC	
H	2.67	2.92	0.105	0.115
J	0.813	0.864	0.032	0.034
K	15.11	16.38	0.595	0.645
M	90° TYP		90° TYP	
Q	4.70	4.95	0.185	0.195
R	1.91	2.16	0.075	0.085
U	6.22	6.48	0.245	0.255
V	2.03	-	0.080	-

When mounting the device, torque not to exceed 8.0 in.-lb.
 If lead bending is required, use suitable clamps or other supports between transistor case and point of bend.

TO-225AB TYPE

SILICON
MEDIUM-POWER TRANSISTORS

... designed for use in power amplifier and switching applications.

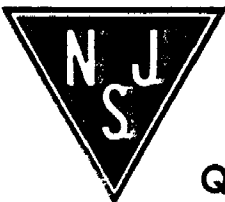
- High Collector Current –
 $I_C = 15 \text{ Adc}$
- High DC Current Gain –
 $h_{FE} = 10 \text{ (Min) @ } I_C = 15 \text{ Adc}$

MAXIMUM RATINGS

Rating	Symbol	MJE1660	MJE1661	Unit
Collector-Emitter Voltage	V_{CEO}	40	60	Vdc
Collector-Base Voltage	V_{CB}	40	60	Vdc
Emitter-Base Voltage	V_{EB}	5.0		Vdc
Collector Current-Continuous	I_C	15		Adc
Base Current	I_B	5.0		Adc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	90		Watts
		0.72		W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +150		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	1.39	$^\circ\text{C}/\text{W}$



Quality Semi-Conductors

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage ⁽¹⁾ ($I_C = 200 \text{ mAdc}$, $I_B = 0$)	MJE1660 MJE1661	$V_{CEO(sus)}$	40 60	– –	Vdc
Collector Cutoff Current ($V_{CE} = 30 \text{ Vdc}$, $I_B = 0$)		I_{CEO}	–	1.0	mAdc
Collector Cutoff Current ($V_{CE} = 40 \text{ Vdc}$, $V_{BE} = 0$) ($V_{CE} = 60 \text{ Vdc}$, $V_{BE} = 0$)	MJE1660 MJE1661	I_{CES}	– –	0.7 0.7	mAdc
Collector Cutoff Current ($V_{CB} = 40 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 60 \text{ Vdc}$, $I_E = 0$)	MJE1660 MJE1661	I_{CBO}	– –	0.7 0.7	mAdc
Emitter Cutoff Current ($V_{BE} = 5.0 \text{ Vdc}$, $I_E = 0$)		I_{EBO}	–	1.0	mAdc

ON CHARACTERISTICS

DC Current Gain ⁽¹⁾ ($I_C = 5.0 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$) ($I_C = 15 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$)		h_{FE}	20 10	100 –	–
Collector-Emitter Saturation Voltage ⁽¹⁾ ($I_C = 15 \text{ Adc}$, $I_B = 1.5 \text{ Adc}$)		$V_{CE(sat)}$	–	1.8	Vdc
Base-Emitter on Voltage ⁽¹⁾ ($I_C = 15 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$)		$V_{BE(on)}$	–	2.5	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain-Bandwidth Product ($I_C = 1.0 \text{ Adc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ MHz}$)		f_T	3.0	–	MHz
Small-Signal Current Gain ($I_C = 1.0 \text{ Adc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)		h_{fe}	25	–	–

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