

New Jersey Semi-Conductor Products, Inc.

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SPRINGFIELD, NEW JERSEY 07081
U.S.A.

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2N6040 thru 2N6042 PNP
2N6043 thru 2N6045 NPN
MJE6040 thru MJE6041 PNP
MJE6043 thru MJE6045 NPN

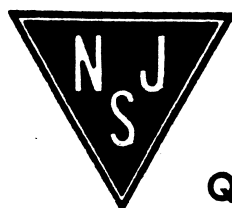
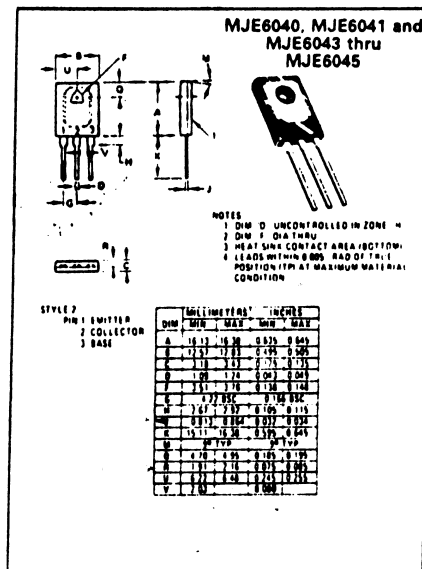
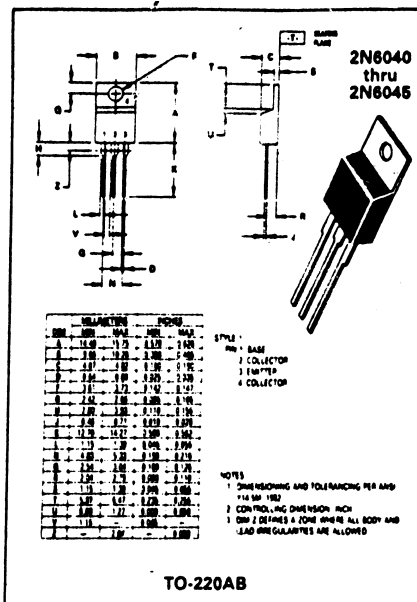
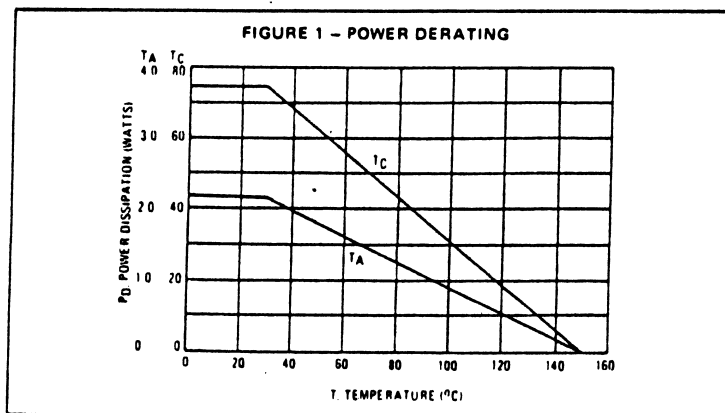
*MAXIMUM RATINGS

Rating	Symbol	2N6040 2N6043 MJE6040	2N6041 2N6044 MJE6041	2N6042 2N6045 MJE6045	Unit
Collector-Emitter Voltage	V _{CEO}	60	80	100	V _{dC}
Collector Base Voltage	V _{CB}	60	80	100	V _{dC}
Emitter-Base Voltage	V _{EB}	5.0			V _{dC}
Collector Current - Continuous	I _C	8.0			A _{dC}
Collector Current - Peak	I _C	16			A _{dC}
Base Current	I _B	120			mA _{dC}
Total Power Dissipation @ T _C = 25°C	P _D	75			Watts
Derate above 25°C	P _D	0.60			W/°C
Total Power Dissipation @ T _A = 25°C	P _D	2.2			Watts
Derate above 25°C	P _D	0.0175			W/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-65 to +150			°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ _{JC}	1.67	°C/W
Thermal Resistance, Junction to Ambient	θ _{JA}	57	°C/W

*Indicates JEDEC Registered Data



Quality Semi-Conductors

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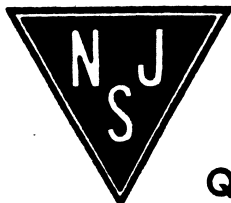
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*ELECTRICAL CHARACTERISTICS $I_T = 25^\circ\text{C}$ unless otherwise noted

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage ($I_C = 100 \text{ mA}$, $I_B = 0$)	$V_{CE(sus)}$	80 80 100	- - -	Vdc
Collector Cutoff Current ($V_{CE} = 80 \text{ Vdc}$, $I_B = 0$) ($V_{CE} = 80 \text{ Vdc}$, $I_B = 0$) ($V_{CE} = 100 \text{ Vdc}$, $I_B = 0$)	I_{CEO}	- - -	20 20 20	μA
Collector Cutoff Current ($V_{CE} = 80 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$) ($V_{CE} = 80 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$) ($V_{CE} = 100 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$) ($V_{CE} = 60 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$, $T_C = 150^\circ\text{C}$) ($V_{CE} = 80 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$, $T_C = 150^\circ\text{C}$) ($V_{CE} = 100 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$, $T_C = 150^\circ\text{C}$)	I_{CEX}	- - - - - -	20 20 20 200 200 200	μA
Collector Cutoff Current ($V_{CB} = 80 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 80 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 100 \text{ Vdc}$, $I_E = 0$)	I_{CBO}	- - -	20 20 20	μA
Emitter Cutoff Current ($V_{BE} = 5.0 \text{ Vdc}$, $I_C = 0$)	I_{EBO}	-	20	mA
ON CHARACTERISTICS				
DC Current Gain ($I_C = 4.0 \text{ A}$, $V_{CE} = 4.0 \text{ Vdc}$) ($I_C = 3.0 \text{ A}$, $V_{CE} = 4.0 \text{ Vdc}$) ($I_C = 8.0 \text{ A}$, $V_{CE} = 4.0 \text{ Vdc}$) All Types	h_{FE}	1000 1000 100	20,000 20,000 -	-
Collector-Emitter Saturation Voltage ($I_C = 4.0 \text{ A}$, $I_B = 16 \text{ mA}$) ($I_C = 3.0 \text{ A}$, $I_B = 12 \text{ mA}$) ($I_C = 8.0 \text{ A}$, $I_B = 80 \text{ mA}$) All Types	$V_{CE(sat)}$	- - -	2.0 2.0 4.0	Vdc
Base-Emitter Saturation Voltage ($I_C = 8.0 \text{ A}$, $I_B = 80 \text{ mA}$)	$V_{BE(sat)}$	-	4.5	Vdc
Base-Emitter On Voltage ($I_C = 4.0 \text{ A}$, $V_{CE} = 4.0 \text{ Vdc}$)	$V_{BE(on)}$	-	2.8	Vdc
DYNAMIC CHARACTERISTICS				
Small-Signal Current Gain ($I_C = 3.0 \text{ A}$, $V_{CE} = 4.0 \text{ Vdc}$, $f = 10 \text{ MHz}$)	h_{fe}	40	-	-
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 0.1 \text{ MHz}$)	C_{ob}	-	300 200	pF
Small-Signal Current Gain ($I_C = 3.0 \text{ A}$, $V_{CE} = 4.0 \text{ Vdc}$, $f = 10 \text{ kHz}$)	h_{fe}	300	-	-

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