

New Jersey Semi-Conductor Products, Inc.

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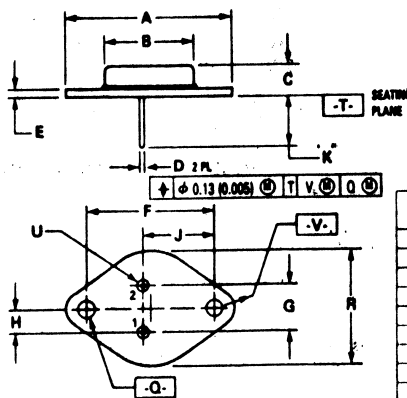
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2N6338
thru
2N6341
25 AMPERE
POWER TRANSISTORS
NPN SILICON

100, 120, 140, 150 VOLTS
200 WATTS

***MAXIMUM RATINGS**

Rating	Symbol	2N6338	2N6339	2N6340	2N6341	Unit
Collector-Base Voltage	V_{CB}	120	140	160	180	Vdc
Collector-Emitter Voltage	V_{CEO}	100	120	140	150	Vdc
Emitter-Base Voltage	V_{EB}	← 6.0 →				Vdc
Collector Current – Continuous Peak	I_C	← 25 →				Adc
		← 50 →				
Base Current	I_B	← 10 →				Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	← 200 →				Watts W/ $^\circ\text{C}$
		← 1.14 →				
Operating and Storage Junction Temperature Range	T_J, T_{stg}	← -65 to +200 →				$^\circ\text{C}$



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	—	39.37	—	1.550
B	—	21.08	—	0.830
C	6.35	8.25	0.250	0.325
D	0.97	1.09	0.038	0.043
E	1.40	1.77	0.055	0.070
F	30.15 BSC		1.187 BSC	
G	10.92 BSC		0.430 BSC	
H	5.46 BSC		0.215 BSC	
J	16.89 BSC		0.668 BSC	
K	11.18	12.19	0.440	0.480
Q	3.84	4.19	0.151	0.165
R	—		26.67	
U	4.83	5.33	0.190	0.210
V	3.84	4.19	0.151	0.165



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.

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

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) ($I_C = 50 \text{ mA dc}, I_B = 0$)	$V_{CE(sus)}$	100 120 140 150	—	Vdc
Collector Cutoff Current ($V_{CE} = 50 \text{ Vdc}, I_B = 0$) ($V_{CE} = 60 \text{ Vdc}, I_B = 0$) ($V_{CE} = 70 \text{ Vdc}, I_B = 0$) ($V_{CE} = 75 \text{ Vdc}, I_B = 0$)	I_{CEO}	— — — —	50 50 50 50	$\mu\text{A dc}$
Collector Cutoff Current ($V_{CE} = \text{Rated } V_{CEO}, V_{EB(off)} = 1.5 \text{ Vdc}$) ($V_{CE} = \text{Rated } V_{CEO}, V_{EB(off)} = 1.5 \text{ Vdc}, T_C = 150^\circ\text{C}$)	I_{CEX}	—	10 1.0	$\mu\text{A dc}$ mA dc
Collector Cutoff Current ($V_{CB} = \text{Rated } V_{CB}, I_E = 0$)	I_{CBO}	—	10	$\mu\text{A dc}$
Emitter Cutoff Current ($V_{BE} = 6.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	—	100	$\mu\text{A dc}$
ON CHARACTERISTICS (1)				
DC Current Gain ($I_C = 0.5 \text{ A dc}, V_{CE} = 2.0 \text{ Vdc}$) ($I_C = 10 \text{ A dc}, V_{CE} = 2.0 \text{ Vdc}$) ($I_C = 25 \text{ A dc}, V_{CE} = 2.0 \text{ Vdc}$)	h_{FE}	50 30 12	120	—
Collector-Emitter Saturation Voltage ($I_C = 10 \text{ A dc}, I_B = 1.0 \text{ A dc}$) ($I_C = 25 \text{ A dc}, I_B = 2.5 \text{ A dc}$)	$V_{CE(sat)}$	— —	1.0 1.8	Vdc
Base-Emitter Saturation Voltage ($I_C = 10 \text{ A dc}, I_B = 1.0 \text{ A dc}$) ($I_C = 25 \text{ A dc}, I_B = 2.5 \text{ A dc}$)	$V_{BE(sat)}$	— —	1.8 2.5	Vdc
Base-Emitter On Voltage ($I_C = 10 \text{ A dc}, V_{CE} = 2.0 \text{ Vdc}$)	$V_{BE(on)}$	—	1.8	Vdc
DYNAMIC CHARACTERISTICS				
Current-Gain-Bandwidth Product (2) ($I_C = 1.0 \text{ A dc}, V_{CE} = 10 \text{ Vdc}, f_{test} = 10 \text{ MHz}$)	f_T	40	—	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 0.1 \text{ MHz}$)	C_{ob}	—	300	pF
SWITCHING CHARACTERISTICS				
Rise Time ($V_{CC} \approx 80 \text{ Vdc}, I_C = 10 \text{ A dc}, I_{B1} = 1.0 \text{ A dc}, V_{BE(off)} = 6.0 \text{ Vdc}$)	t_r	—	0.3	μs
Storage Time ($V_{CC} \approx 80 \text{ Vdc}, I_C = 10 \text{ A dc}, I_{B1} = I_{B2} = 1.0 \text{ A dc}$)	t_s	—	1.0	μs
Fall Time ($V_{CC} \approx 80 \text{ Vdc}, I_C = 10 \text{ A dc}, I_{B1} = I_{B2} = 1.0 \text{ A dc}$)	t_f	—	0.25	μs

*Indicates JEDEC Registered Data.

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

(2) $f_T = h_{FE} f_{test}$.