

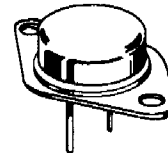
2N6338, 2N6341

High-Power NPN Silicon Transistors

...designed for use in industrial-military power amplifier and switching circuit applications.

- High Collector-Emmitter Sustaining Voltage -
 $V_{CEO(sus)} = 100 \text{ Vdc (Min) - 2N6338}$
 $= 150 \text{ Vdc (Min) - 2N6341}$
- High DC Current Gain -
 $h_{FE} = 30 - 120 @ I_C = 10 \text{ Adc}$
 $= 12 \text{ (Min) } @ I_C = 25 \text{ Adc}$
- Low Collector-Emmitter Saturation Voltage -
 $V_{CE(sat)} = 1.0 \text{ Vdc (Max) } @ I_C = 10 \text{ Adc}$
- Fast Switching Times @ $I_C = 10 \text{ Adc}$
 $t_r = 0.3 \text{ ms (Max)}$
 $t_s = 1.0 \text{ ms (Max)}$
 $t_f = 0.25 \text{ ms (Max)}$

25 AMPERE POWER TRANSISTORS NPN SILICON



*MAXIMUM RATINGS

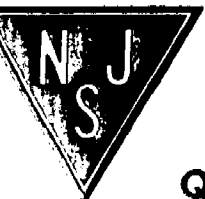
Rating	Symbol	2N6338	2N6341	Unit
Collector-Base Voltage	V_{CB}	120	180	Vdc
Collector-Emmitter Voltage	V_{CEO}	100	150	Vdc
Emmitter-Base Voltage	V_{EB}	6.0		Vdc
Collector Current Continuous Peak	I_C	25 50		A dc
Base Current	I_B	10		A dc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above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

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	0.875	$^\circ\text{C/W}$

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.

*Indicates JEDEC Registered Data.



NJ Semi-Conductors reserves the right to change test conditions, parameters 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.

Quality Semi-Conductors

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

Characteristic	Symbol	Min	Max	Unit	
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage (1) ($I_C = 50\text{ mAdc}$, $I_B = 0$)	2N6338 2N6341	$V_{CEO(sus)}$	100 150	- -	Vdc
Collector Cutoff Current ($V_{CE} = 50\text{ Vdc}$, $I_B = 0$) ($V_{CE} = 75\text{ Vdc}$, $I_B = 0$)	2N6338 2N6341	I_{CEO}	- -	50 50	μAdc
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	μAdc mAdc
Collector Cutoff Current ($V_{CB} = \text{Rated } V_{CB}$, $I_E = 0$)		I_{CBO}	-	10	μAdc
Emitter Cutoff Current ($V_{BE} = 6.0\text{ Vdc}$, $I_C = 0$)		I_{EBO}	-	100	μAdc

ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 0.5\text{ Adc}$, $V_{CE} = 2.0\text{ Vdc}$) ($I_C = 10\text{ Adc}$, $V_{CE} = 2.0\text{ Vdc}$) ($I_C = 25\text{ Adc}$, $V_{CE} = 2.0\text{ Vdc}$)	h_{FE}	50 30 12	- 120 -	-
Collector Emitter Saturation Voltage ($I_C = 10\text{ Adc}$, $I_B = 1.0\text{ Adc}$) ($I_C = 25\text{ Adc}$, $I_B = 2.5\text{ Adc}$)	$V_{CE(sat)}$	- -	1.0 1.8	Vdc
Base-Emitter Saturation Voltage ($I_C = 10\text{ Adc}$, $I_B = 1.0\text{ Adc}$) ($I_C = 25\text{ Adc}$, $I_B = 2.5\text{ Adc}$)	$V_{BE(sat)}$	- -	1.8 2.5	Vdc
Base-Emitter On Voltage ($I_C = 10\text{ Adc}$, $V_{CE} = 2.0\text{ Vdc}$)	$V_{BE(on)}$	-	1.8	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain - Bandwidth Product (2) ($I_C = 1.0\text{ Adc}$, $V_{CE} = 10\text{ Vdc}$, $f_{test} = 10\text{ MHz}$)	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

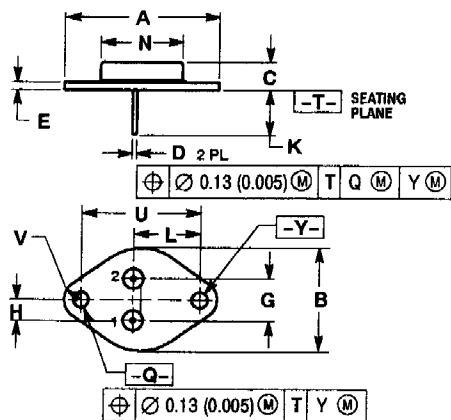
Rise Time ($V_{CC} \approx 80\text{ Vdc}$, $I_C = 10\text{ Adc}$, $I_{B1} = 1.0\text{ Adc}$, $V_{BE(off)} = 6.0\text{ Vdc}$)	t_r	-	0.3	μs
Storage Time ($V_{CC} \approx 80\text{ Vdc}$, $I_C = 10\text{ Adc}$, $I_{B1} = I_{B2} = 1.0\text{ Adc}$)	t_s	-	1.0	μs
Fall Time ($V_{CC} \approx 80\text{ Vdc}$, $I_C = 10\text{ Adc}$, $I_{B1} = I_{B2} = 1.0\text{ Adc}$)	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) $f_T = |h_{fe}| \cdot f_{test}$.

TO-3



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. ALL RULES AND NOTES ASSOCIATED WITH REFERENCED TO-204AA OUTLINE SHALL APPLY.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.550 REF		39.37 REF	
B	---	1.050	---	26.67
C	0.250	0.335	6.35	8.51
D	0.038	0.043	0.97	1.09
E	0.055	0.070	1.40	1.77
G	0.430 BSC		10.92 BSC	
H	0.215 BSC		5.46 BSC	
K	0.440	0.480	11.18	12.19
L	0.685 BSC		16.89 BSC	
N	---	0.830	---	21.08
Q	0.151	0.165	3.84	4.19
U	1.187 BSC		30.15 BSC	
V	0.131	0.188	3.33	4.77

STYLE 1:
PIN 1: BASE
2: EMITTER
CASE: COLLECTOR