

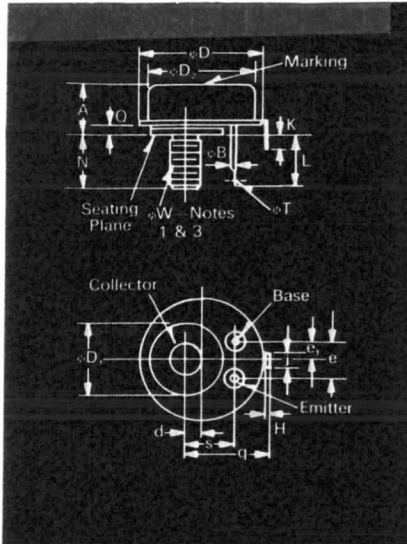
New Jersey Semi-Conductor Products, Inc.

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NPN POWER TRANSISTORS 2N1015/2N1016

7.5 Amperes
 30-250 Volts



Conforms to TO-82 Outline

Features:

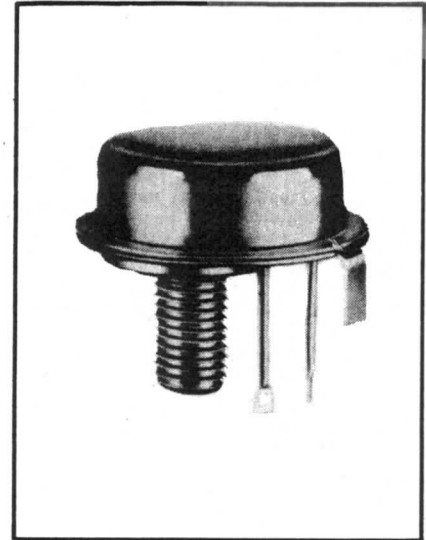
- Gold Alloy Process
- No forward bias secondary breakdown to 100 Volts
- High reverse bias S.O.A. for inductive loads
- Low thermal resistance with copper base
- 150 watt dissipation
- Protection from thermal fatigue with hard solder and molybdenum construction
- 25 volt V_{EBO}
- Low $V_{CE(sat)}$
- Lifetime Guarantee

Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	.500	.560	12.70	14.22
ϕB	.045	.060	1.14	1.52
d	.140	.170	3.56	4.32
ϕD	1.240	1.280	31.50	32.51
ϕD_1	.730	.770	18.54	19.56
ϕD_2		1.125		28.58
e	.360	.400	9.14	10.16
e ₁	.180	.200	4.57	5.08
H	.014	.025	.36	.64
j	.140	.170	3.56	4.32
K	.130	.190	3.30	4.83
L	.550	.590	13.97	14.99
N	.550	.590	13.97	14.99
Q	.810	.850	20.57	21.59
Q	.105	.140	2.67	3.56
S	.480	.520	12.19	13.21
ϕT	.050	.070	1.27	1.78
ϕW	5/16-24 UNF-2A			

Finish—Nickel Plate.
 Approx. Weight—.9 oz. (25 g).
 1. Complete threads to extend to within 2½ threads of seating plane.
 2. Contour and angular orientation of terminals is undefined.
 3. Pitch diameter of 5/16-24 UNF-2A (coated) threads (ASA B1.1-1960).

Applications:

- High Power Switching
- Amplifiers
- Servo Systems
- Regulators
- Modulators



**Maximum Ratings
 Voltage**

JEDEC		V_{CEO} (SOS)
2N1015 +	2N1016 +	30
2N1015A +	2N1016A +	60
2N1015B +	2N1016B +	100
2N1015C +	2N1016C +	150
2N1015D +	2N1016D +	200
2N1015E +	2N1016E +	250

Maximum Ratings and Characteristics
 $T_c = 25^\circ C$ unless specified

	Symbol	JEDEC 2N1015, 2N1016	Units
* Operating and storage temperature		- 65 TO 150	$^\circ C$
Collector-emitter sustaining voltage	$V_{CEO(sus)}$	30 TO 250	Volts
* Emitter-base voltage	V_{EBO}	25	Volts
* Continuous collector current	I_c	7.5	Amps
* Continuous base current	I_b	5	Amps
* Thermal resistance	$R_{\theta JC}$	.87	$^\circ C/W$
* Power dissipation $T_c = 45^\circ C$	P_T	150	Watts
Power dissipation $T_c = 100^\circ C$	P_T	87	Watts

* JEDEC Registered Parameters



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

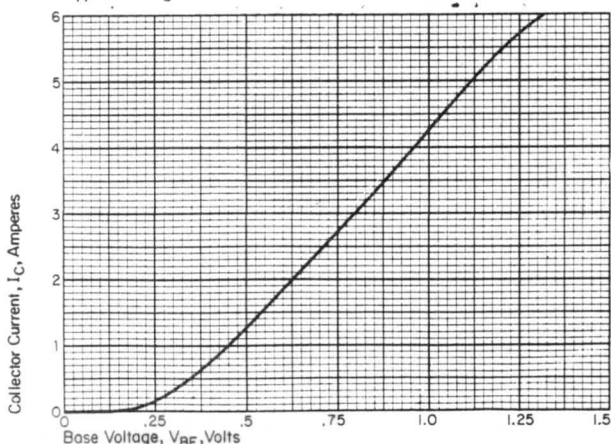
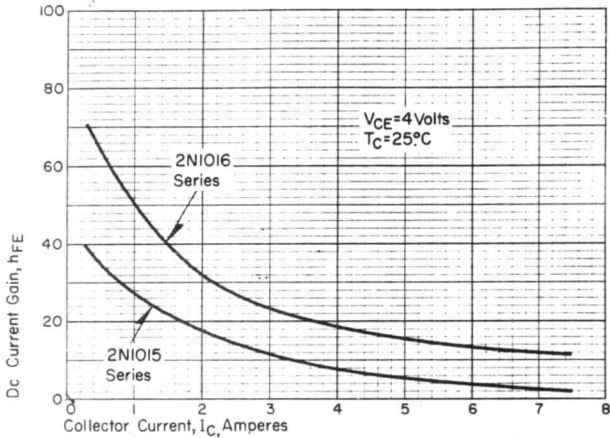
Quality Semi-Conductors

Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise specified

	Symbol	Minimum	Typical	Max.	Units
2N1015/2N1016					
Collector current at $V_{CEX} = V_{CE}$ (from max. ratings), $T_J = 150^\circ\text{C}$, $V_{BE} = -1.5\text{ Vdc}$	I_{CEX}	..	2	*20	mAdc
Emitter current at $V_{EB} = 25\text{ Vdc}$, $I_C = 0$, $T_J = 150^\circ\text{C}$	I_{EBO}	..	3	*20	mAdc
Switching time, delay plus rise time	$t_d + t_r$	..	3	..	μsec
Storage plus fall time	$t_s + t_f$	..	7	..	μsec
Second breakdown, Collector Current, $V_{CE} = 100\text{ V}$, $T_C = 45^\circ\text{C}$					
(one second test), forward bias, Amperes	$I_{s/B}$	..	..	1.5	Adc
Second breakdown energy, base reverse biased, $L = 250\text{ mh}$, $R_B = 50\text{ ohms}$, $V_{BE} = -6.0\text{ volts}$, $I_C = 2.0\text{ Amperes}$, Joules	$E_{s/B}$	..	..	0.5	Joule
Gain-bandwidth, $V_{CE} = 10\text{ volts}$, $I_C = 0.5\text{ Amps}$, KiloHertz	f_t	250	..	..	KHz.
2N1015					
Dc current gain at $V_{CE} = 4\text{ Vdc}$, $I_C = 2\text{ Adc}$	h_{FE}	*10	14	..	..
Base voltage, at $I_C = 2\text{ Adc}$, $I_B = 300\text{ mAdc}$	$V_{BE}(\text{sat})$	..	1.15	..	Vdc
Beta cut-off frequency	f_{hfe}	..	25	..	kHz
2N1016					
Dc current gain at $V_{CE} = 4\text{ Vdc}$, $I_C = 5\text{ Adc}$	h_{FE}	*10	18	..	..
Base voltage, at $I_C = 5\text{ Adc}$, $I_B = 750\text{ mAdc}$	$V_{BE}(\text{sat})$	..	1.25	..	Vdc
Beta cut-off frequency	f_{hfe}	..	30	..	kHz

*JEDC registered parameters.

Typical Characteristics



SAFE OPERATING AREA

