New Jersey Semi-Conductor Products, Inc.

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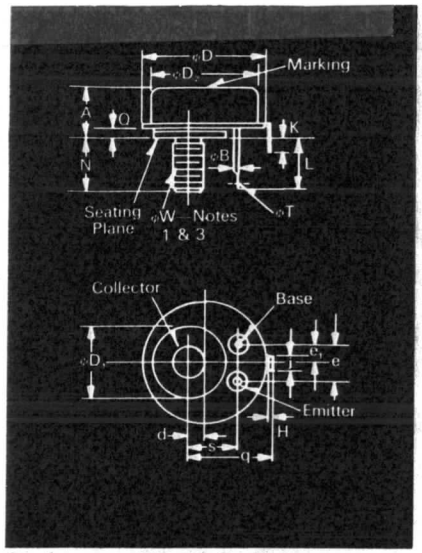
NPN POWER TRANSISTROS 2N1015/2N1016

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 molydenum construction
- 25 volt V_{EBO}
- Low $V_{CE\ (sat)}$
- Lifetime Guarantee

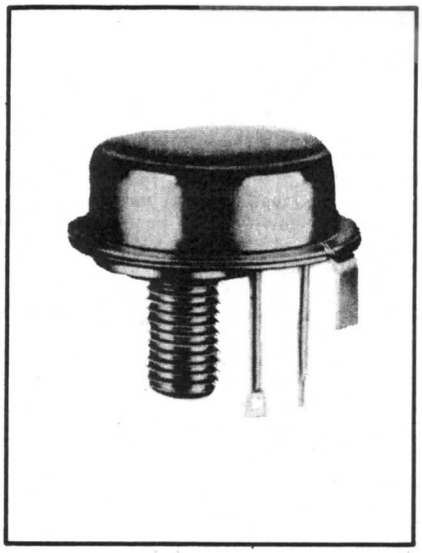
Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	.500	.560	12.70	14.22
φB	.045	.060	1.14	1.52
d	.140	.170	3.56	4.32
φD	1.240	1.280	31.50	32.51
ϕD_1	.730	.770	18.54	19.56
ϕD_2		1.125		28.58
e	.360	.400	9.14	10.16
e_1	.180	.200	4.57	5.08
H	.014	.025	.36	.64
j	.140	.170	3.56	4.32
K	.130	.190	3.30	4.83
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°C unless specified

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

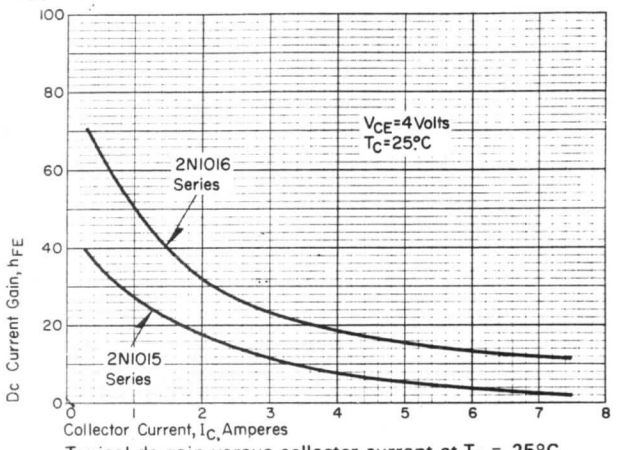
* JEDEC Registered Parameters

Electrical Characteristics T_C=25°C unless otherwise specified

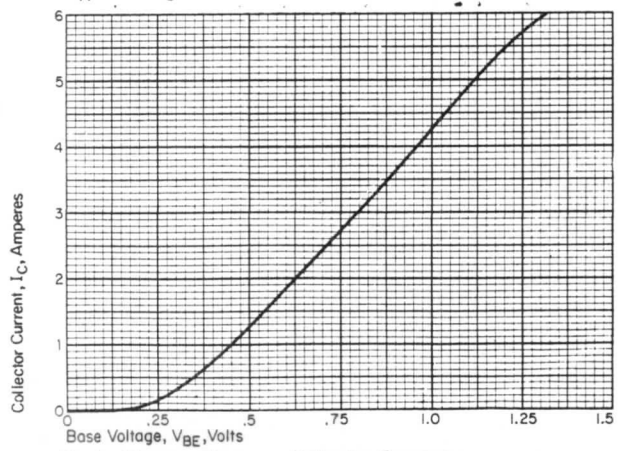
	Symbol	Minimum	Typical	Max.	Units
2N1015/2N1016					
Collector current at $V_{CEX}=V_{CE}$ (from max. ratings), T_J=150°C, $V_{BE}=-1.5$ Vdc	I_{CEX}	..	2	*20	mAdc
Emitter current at V_{EB}=25 Vdc, I_C=0, T_J=150°C	I_{EBO}	..	3	*20	mAdc
Switching time, delay plus rise time	t_d+t_r	...	3	....	μsec
Storage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

*JEDC registered parameters.

Typical Characteristics



Typical dc gain versus collector current at T_c = 25°C.



Typical base voltage vs. Collector Current characteristics at T_c = 25°C.

SAFE OPERATING AREA