



Micro Commercial Components
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2N6036

PNP Darlington Power Transistor

Features

- This device is designed for general purpose amplifier and low-speed switching applications.

Maximum Ratings*

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	80	V
V_{CBO}	Collector-Base Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current, Continuous	4.0	A
	Peak	8.0	
I_B	Base Current	100	mA
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Thermal Characteristics

Symbol	Rating	Max	Unit
P_D	Total Device Dissipation	40	W
	Derate above 25°C	0.32	W/°C
P_D	Total Device Dissipation	1.5	W
	Derate above 25°C	0.012	W/°C
R_{JC}	Thermal Resistance, Junction to Case	3.12	°C/W
R_{JA}	Thermal Resistance, Junction to Ambient	83.3	°C/W

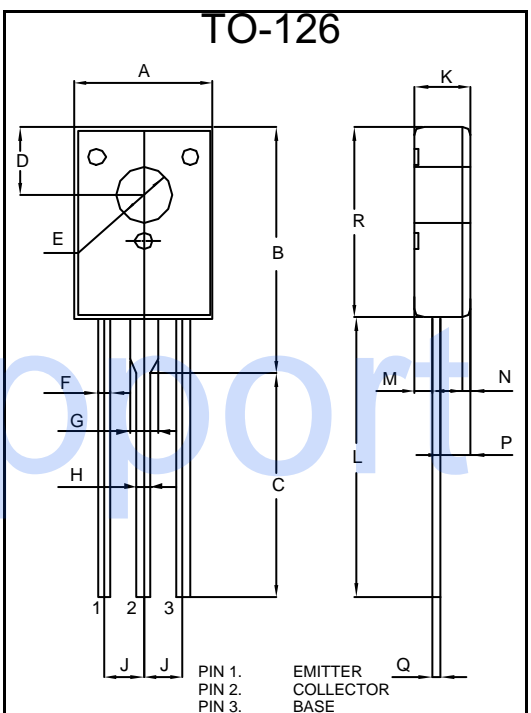
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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OFF CHARACTERISTICS

$V_{CEO(sus)}$	Collector-Emitter Breakdown Voltage ⁽¹⁾ ($I_C=100\text{mA}$, $I_E=0$)	80	---	Vdc
I_{CEO}	Collector Cutoff Current ($V_{CB}=60\text{Vdc}$, $I_E=0$)	---	100	μAdc
I_{CEX}	Collector Cutoff Current ($V_{CE}=80\text{Vdc}$, $V_{EB(off)}=1.5\text{Vdc}$) ($V_{CE}=80\text{Vdc}$, $V_{EB(off)}=1.5\text{Vdc}$, $T_C=125^\circ\text{C}$)	---	100	μA
		---	500	mA
I_{CBO}	Collector-Cutoff Current ($V_{CB}=80\text{Vdc}$, $I_E=0$)	---	0.5	mA
I_{EBO}	Emitter Cutoff Current ($V_{EB}=5.0\text{Vdc}$, $I_C=0$)	---	2.0	mA

*Indicates JEDEC Registered Data



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.30	0.33	7.70	8.30	
B		0.56		14.20	
C	0.50	0.53	12.76	13.36	
D	0.15	0.16	3.80	4.0	
E	0.12	0.13	3.10	3.30	
F	0.025	0.033	0.65	0.85	
G	0.06	0.07	1.50	1.70	
H	0.025	0.033	0.65	0.85	
J	0.08	0.10	2.08	2.48	
K	0.12	0.14	3.05	3.45	
L	0.63	0.64	15.90	16.30	
M		0.04		1.0	
N		0.02		0.5	
P	0.06	0.08	1.55	1.95	
Q	0.018	0.023	0.45	0.60	
R	0.43	0.44	10.80	11.20	

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Symbol	Parameter	Min	Max	Units
DYNAMIC CHARACTERISTICS				
h_{FE}	DC Current Gain			
	($V_{CE}=3.0Vdc, I_C=0.5Adc$)	500	---	---
	($V_{CE}=3.0Vdc, I_C=2.0Adc$)	750	15000	
	($V_{CE}=3.0Vdc, I_C=4.0Adc$)	100	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=2.0Adc, I_B=8.0mAdc$) ($I_C=4.0Adc, I_B=40mAdc$)	---	2.0 3.0	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=4.0Adc, I_B=40mAdc$)	---	4.0	Vdc
$V_{BE(on)}$	Base-Emitter On Voltage ($I_C=2.0Adc, V_{CE}=3.0Vdc$)	---	2.8	Vdc
DYNAMIC CHARACTERISTICS				
$ h_{fe} $	Small-Signal Current-Gain ($I_C=0.75Adc, V_{CE}=10Vdc, f=1.0MHz$)	25	---	---
C_{ob}	Output Capacitance ($V_{CB}=10Vdc, I_E=0, f=0.1MHz$)	---	200	pF

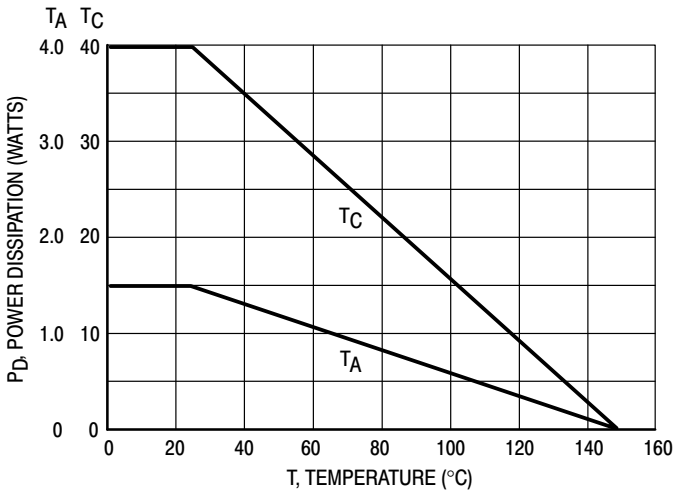


Figure 1. Power Derating

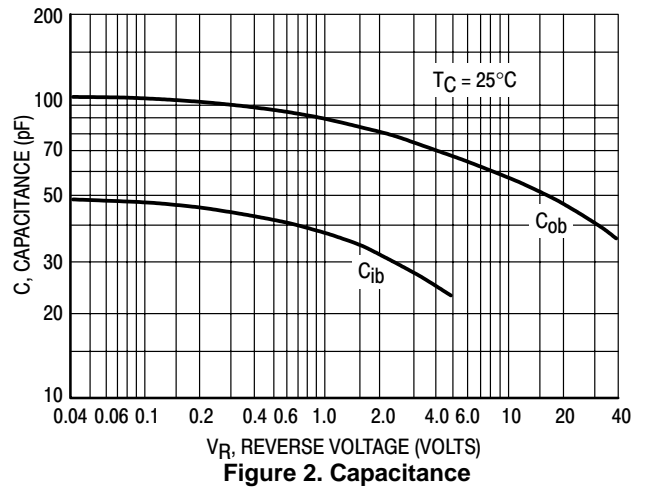


Figure 2. Capacitance

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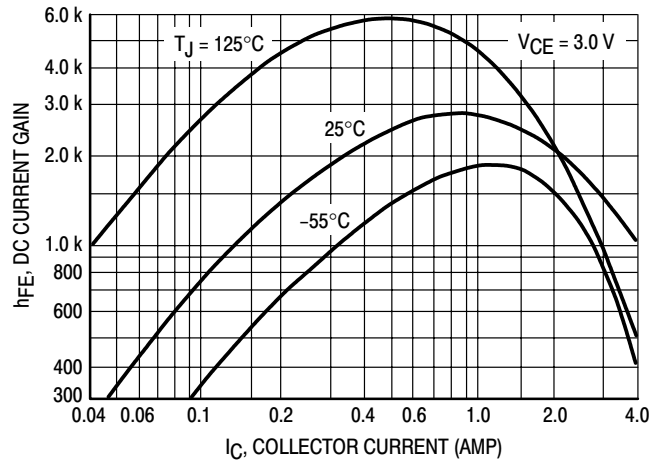
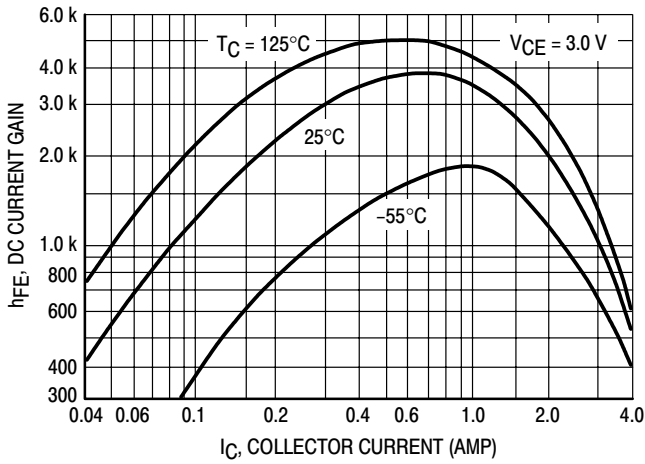


Figure 3. DC Current Gain

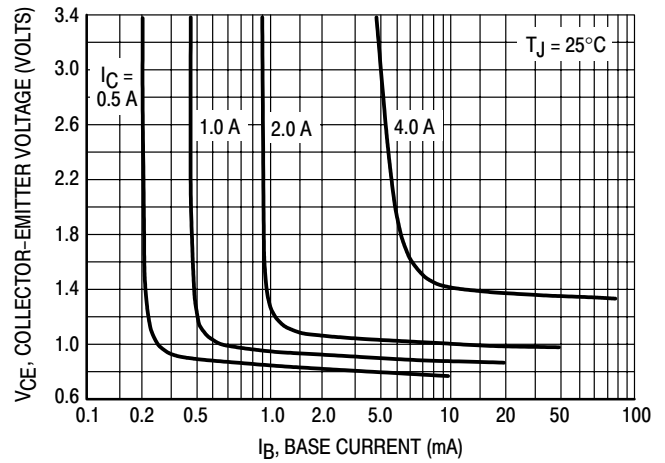
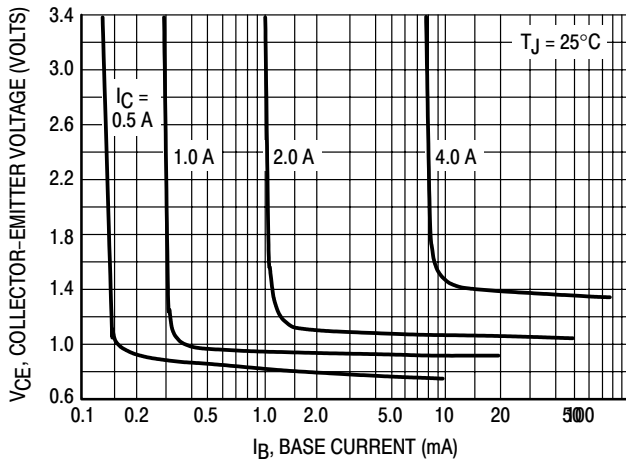


Figure 4. Collector Saturation Region

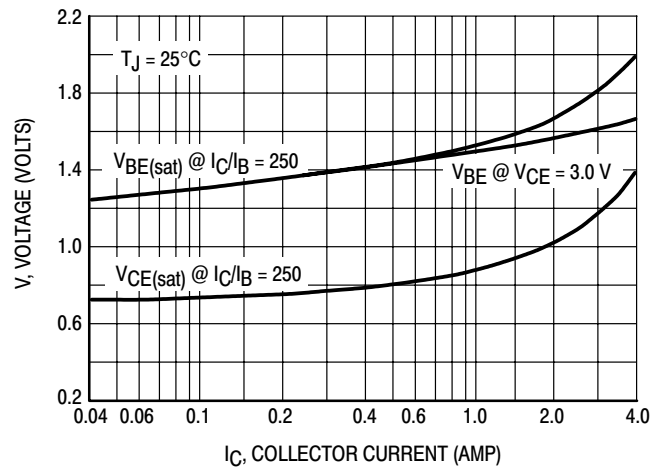
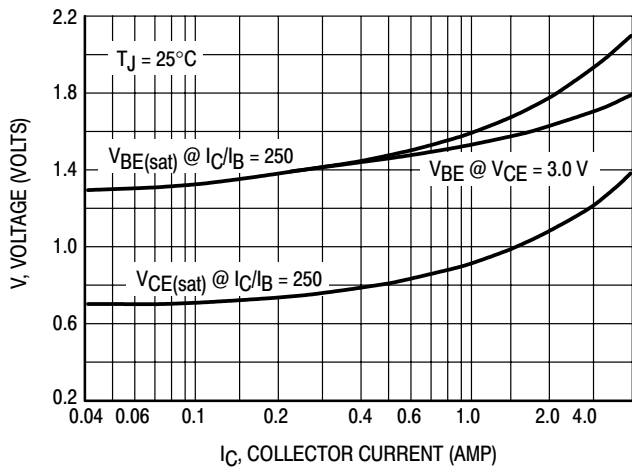


Figure 5. "On" Voltages