



Micro Commercial Components

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2N6388

Features

- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: 2N6388

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 Peak	10 15	A
I_B	Base Current	250	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 Derate above 25°C	65 0.52	W W/°C
P_D	Total Device Dissipation Derate above 25°C	2.0 0.016	W W/°C
R_{JC}	Thermal Resistance, Junction to Case	1.92	°C/W
R_{JA}	Thermal Resistance, Junction to Ambient	62.5	°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 (Note 2) ($I_C=200mA$, $I_E=0$)	80	---	Vdc
I_{EO}	Collector Cutoff Current ($V_{CB}=80Vdc$, $I_E=0$)	---	1.0	mA
I_{EX}	Collector Cutoff Current ($V_{CE}=80Vdc$, $V_{EB(off)}=1.5Vdc$) ($V_{CE}=80Vdc$, $V_{EB(off)}=1.5Vdc$, $T_C=125°C$)	---	300 3.0	uA mA
I_{EO}	Emitter Cutoff Current ($V_{EB}=5.0Vdc$, $I_C=0$)	---	5.0	mA

ON CHARACTERISTICS⁽¹⁾

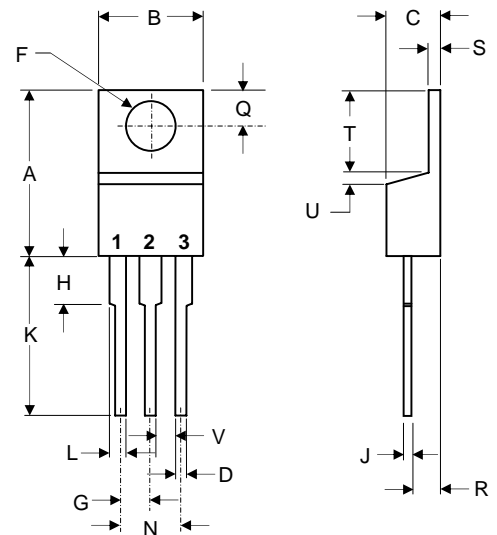
h_{FE}	DC Current Gain ($V_{CE}=3.0Vdc$, $I_C=5.0A$) ($V_{CE}=3.0Vdc$, $I_C=10A$)	1000 100	20000 ---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=5.0A$, $I_B=0.01A$) ($I_C=10A$, $I_B=0.1A$)	---	2.0 3.0	Vdc
$V_{BE(on)}$	Base-Emitter On Voltage ($I_C=5.0A$, $V_{CE}=3.0Vdc$) ($I_C=10A$, $V_{CE}=3.0Vdc$)	---	2.8 4.5	Vdc

*Indicates JEDEC Registered Data

Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7.
2. Pulse Test: Pulse Width<300us, Duty Cycle<2.0%

NPN Darlington Power Transistor

TO-220



PIN 1. BASE
PIN 2. COLLECTOR
PIN 3. EMITTER

DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	.560	.625	14.22	15.88	
B	.380	.420	9.65	10.67	
C	.140	.190	3.56	4.82	
D	.020	.045	0.51	1.14	
F	.139	.161	3.53	4.09	∅
G	.190	.110	2.29	2.79	
H	---	.250	---	6.35	
J	.012	.025	0.30	0.64	
K	.500	.580	12.70	14.73	
L	.045	.060	1.14	1.52	
N	.190	.210	4.83	5.33	
Q	.100	.135	2.54	3.43	
R	.080	.115	2.04	2.92	
S	.045	.055	1.14	1.39	
T	.230	.270	5.84	6.86	
U	---	.050	---	1.27	
V	.045	---	1.15	---	

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Symbol	Parameter	Min	Max	Units
DYNAMIC CHARACTERISTICS				
C_{cb}	Output Capacitance ($V_{CB}=10Vdc, f=1.0MHz$)	---	200	pF
h_{fe}	Small-Signal Current Gain ($I_C=1.0A_{dc}, V_{CE}=5.0Vdc, f=1.0MHz$)	1000	---	---
$ h_{fe} $	Small-Signal Current Gain ($I_C=1.0A_{dc}, V_{CE}=5.0Vdc, f=1.0KHz$)	20	---	---

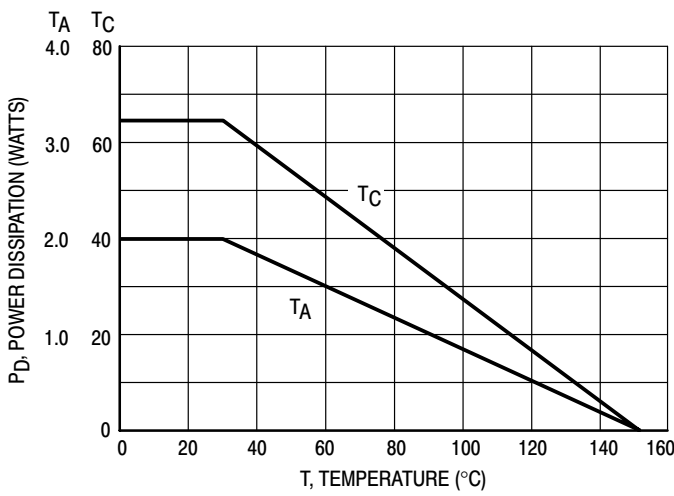


Figure 1. Power Derating

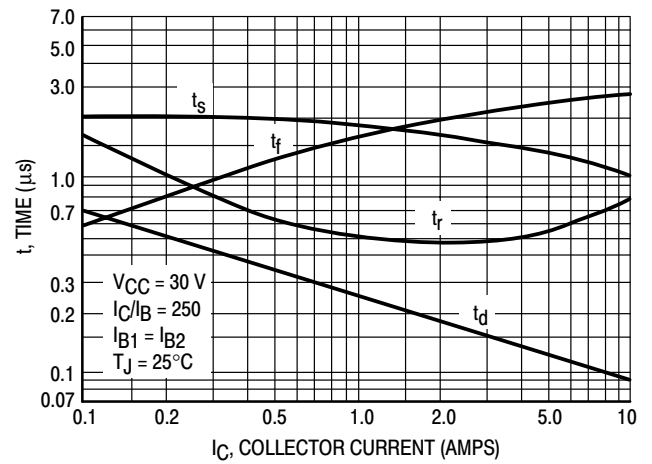


Figure 2. Switching Times

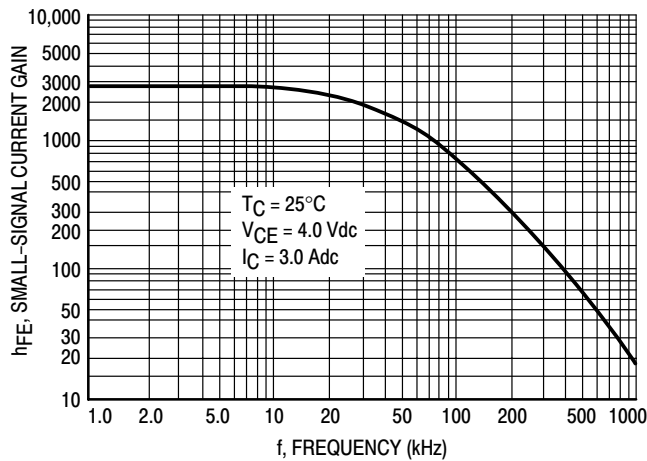


Figure 3. Small-Signal Current Gain

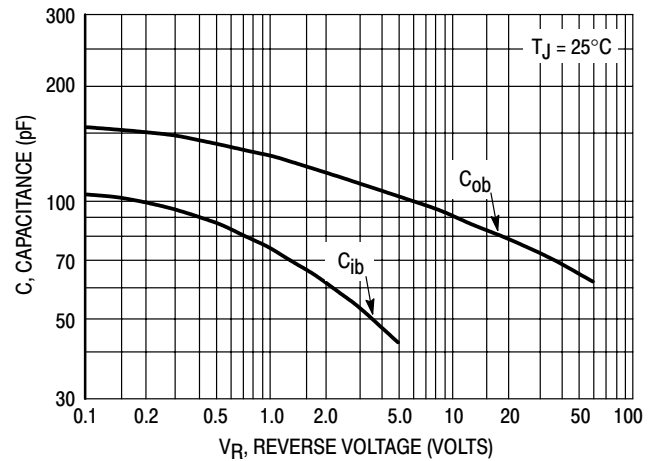


Figure 4. Capacitance

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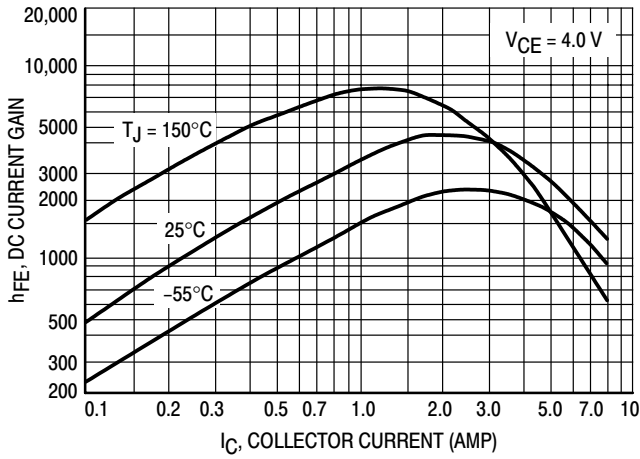


Figure 5. DC Current Gain

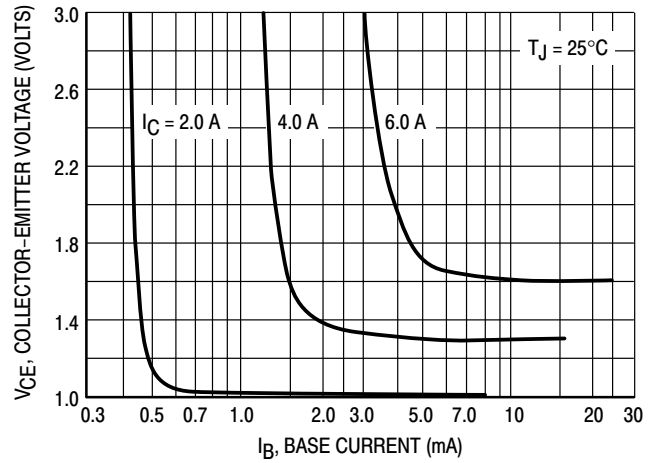


Figure 6. Collector Saturation Region

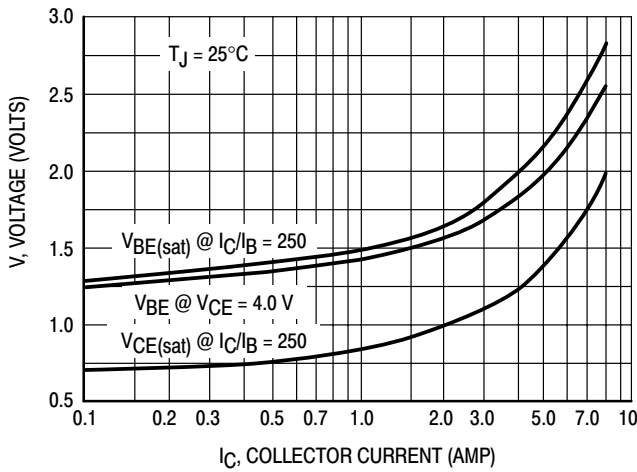


Figure 7. "On" Voltages

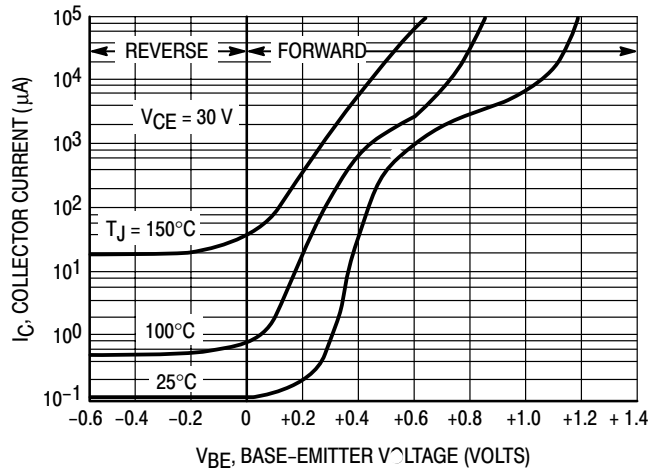


Figure 8. Collector Cut-Off Region



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Ordering Information :

Device	Packing
Part Number-BP	Bulk; 1Kpcs/Box

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