Micro Commercial Components

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2N6388

NPN Darlington Power Transistor

Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Marking:2N6388

Maximum Ratings*

- Mounting Torgue: 5 in-lbs Maximum

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	^{O}C
T_{STG}	Storage Temperature	-55 to +150	^{O}C

Thermal Characteristics

Symbol	Rating	Max	Unit
P_D	Total Device Dissipation Derate above 25^{O}C	65 0.52	W W/^{O}C
P_D	Total Device Dissipation Derate above 25^{O}C	2.0 0.016	W W/^{O}C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.92	^{O}C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5	^{O}C/W

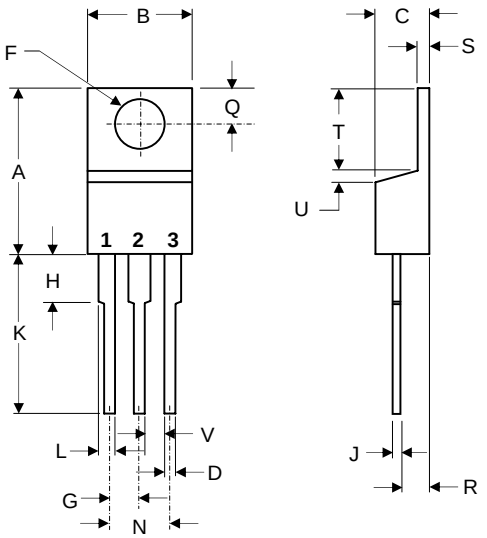
Electrical Characteristics @ 25^{O}C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{CEO(sus)}$	Collector-Emitter Breakdown Voltage (Note 2) (I_C=200mAdc, I_E=0)	80	---	Vdc
I_{CEO}	Collector Cutoff Current (V_{CB}=80Vdc, I_E=0)	---	1.0	mAdc
I_{CEX}	Collector Cutoff Current (V_{CE}=80Vdc, $V_{EB(off)}$=1.5Vdc) (V_{CE}=80Vdc, $V_{EB(off)}$=1.5Vdc, T_C=125 ^{O}C)	--- ---	300 3.0	µA mA
I_{EBO}	Emitter Cutoff Current (V_{EB}=5.0Vdc, I_C=0)	---	5.0	mAdc
ON CHARACTERISTICS(1)				
h_{FE}	DC Current Gain (V_{CE}=3.0Vdc, I_C=5.0Adc) (V_{CE}=3.0Vdc, I_C=10Adc)	1000 100	20000 ---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=5.0Adc, I_B=0.01Adc) (I_C=10Adc, I_B=0.1Adc)	--- ---	2.0 3.0	Vdc
$V_{BE(on)}$	Base-Emitter On Voltage (I_C=5.0Adc, V_{CE}=3.0Vdc) (I_C=10Adc, 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%

TO-220



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

DIM	INCHES MIN	INCHES MAX	MM MIN	MM MAX	NOTE
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	-----	

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=1.0Adc, V_{CE}=5.0Vdc, f=1.0MHz)	1000	---	---
$\|h_{fe}\|$	Small-Signal Current Gain (I_C=1.0Adc, V_{CE}=5.0Vdc, f=1.0KHz)	20	---	---

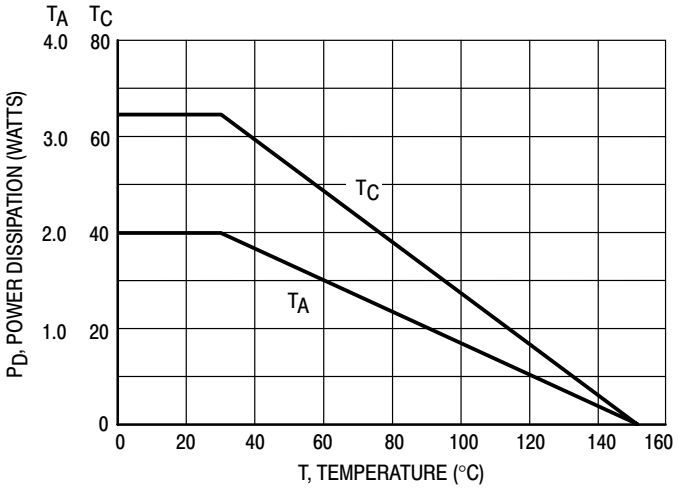


Figure 1. Power Derating

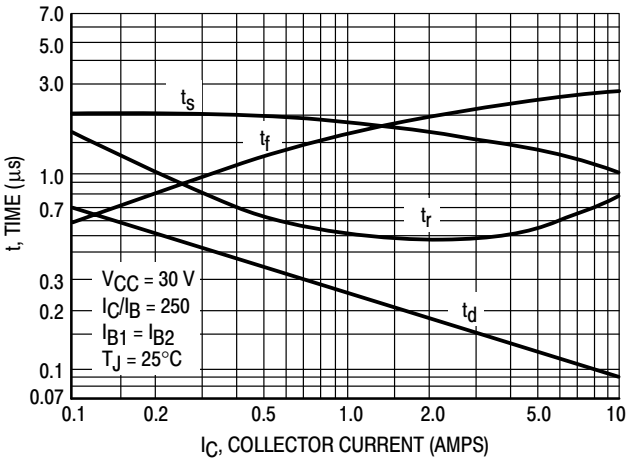


Figure 2. Switching Times

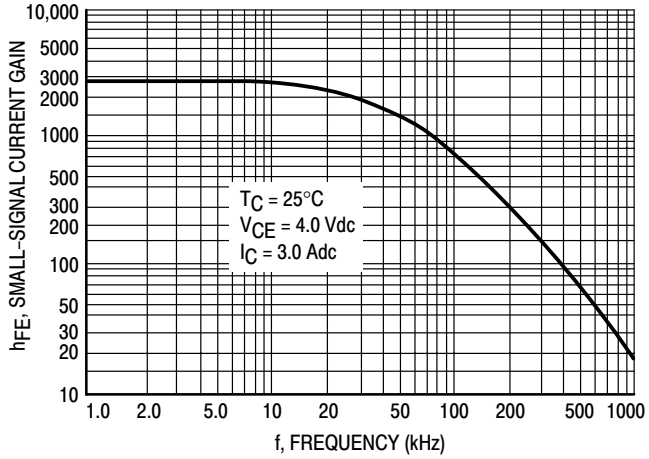


Figure 3. Small–Signal Current Gain

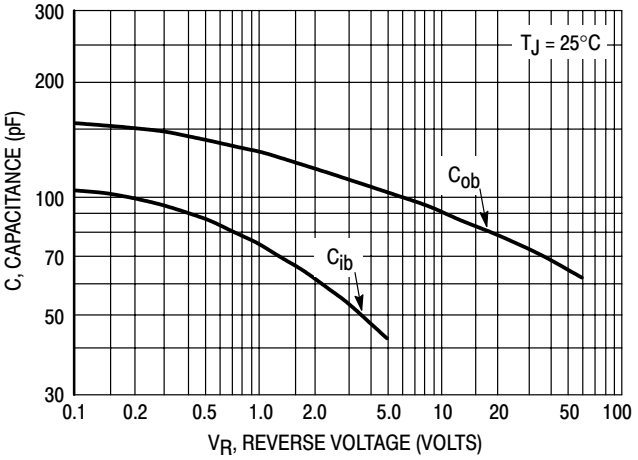


Figure 4. Capacitance

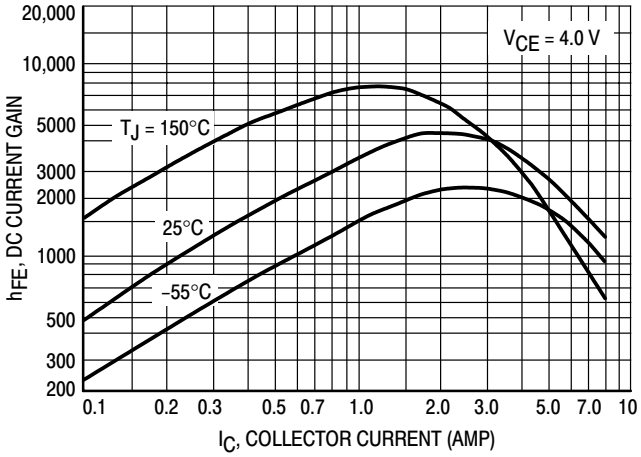


Figure 5. DC Current Gain

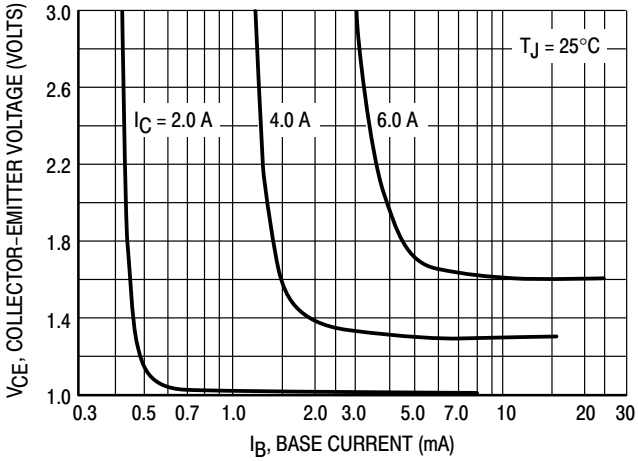


Figure 6. Collector Saturation Region

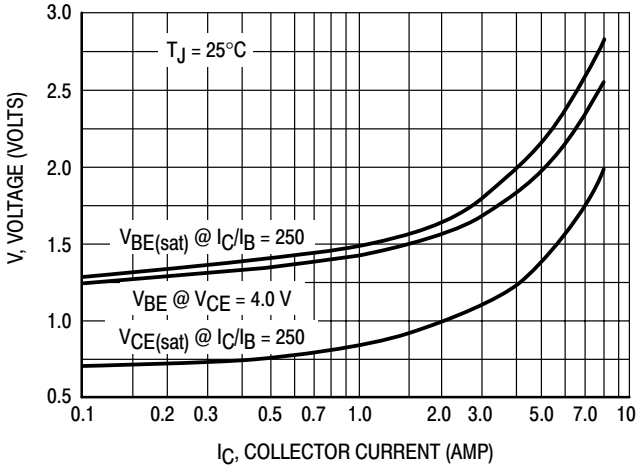


Figure 7. “On” Voltages

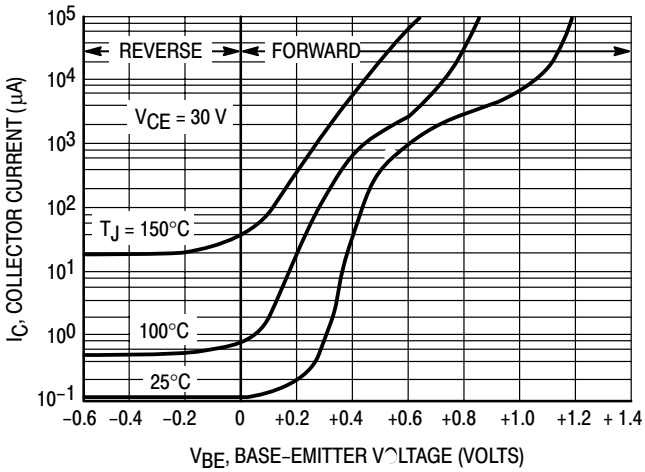


Figure 8. Collector Cut−Off Region

Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-BP-HF

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