

Features

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 62.5°C/W Junction to Ambient
- Thermal Resistance: 1.92°C/W Junction to Case

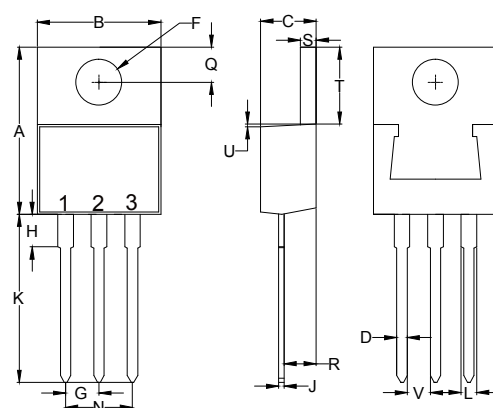
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	10	A
Peak Collector Current	I_{CM}	15	A
Continuous Base Current	I_B	250	mA
Power Dissipation Derate Above 25°C	$T_A=25^\circ\text{C}$	2	W
	$T_C=25^\circ\text{C}$	65	

Note: 1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

Marking: 2N6388

NPN Darlington Power Transistor

TO-220



1.BASE
2.COLLECTOR
3.EMITTER

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.420	9.65	10.67	
C	0.140	0.190	3.56	4.82	
D	0.020	0.045	0.51	1.14	
F	0.139	0.161	3.53	4.09	Φ
G	0.090	0.110	2.29	2.79	
H	-----	0.250	-----	6.35	
J	0.012	0.025	0.30	0.64	
K	0.500	0.580	12.70	14.73	
L	0.045	0.060	1.14	1.52	
N	0.190	0.210	4.83	5.33	
Q	0.100	0.135	2.54	3.43	
R	0.080	0.115	2.04	2.92	
S	0.045	0.055	1.14	1.39	
T	0.230	0.270	5.84	6.86	
U	-----	0.050	-----	1.27	
V	0.045	-----	1.15	-----	

Electrical Characteristics @ $T_A=25^\circ\text{C}$ Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	80			V	$I_C=200\text{mA}$, $I_B=0$
Collector Cutoff Current	I_{CEO}			1	mA	$V_{CE}=80\text{V}$, $I_B=0$
Collector Cutoff Current	I_{CEX}			300	μA	$V_{CE}=80\text{V}$, $V_{EB(off)}=1.5\text{V}$
				3	mA	$V_{CE}=80\text{V}$, $V_{EB(off)}=1.5\text{V}$, $T_C=125^\circ\text{C}$
Emitter Cutoff Current	I_{EBO}			5	mA	$V_{EB}=5\text{V}$, $I_C=0$
DC Current Gain	$h_{FE(1)}$	1000		20000		$V_{CE}=3\text{V}$, $I_C=5\text{A}$
	$h_{FE(2)}$	100				$V_{CE}=3\text{V}$, $I_C=10\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			2.0	V	$I_C=5\text{A}$, $I_B=0.01\text{A}$
				3.0	V	$I_C=10\text{A}$, $I_B=0.1\text{A}$
Base-Emitter On Voltage	$V_{BE(on)}$			2.8	V	$V_{CE}=3\text{V}$, $I_C=5\text{A}$
				4.5	V	$V_{CE}=3\text{V}$, $I_C=10\text{A}$
Collector Output Capacitance	C_{ob}			200	pF	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$
Small-Signal Current Gain	h_{fe}	1000				$I_C=1.0\text{A}$, $V_{CE}=5.0\text{V}$, $f=1.0\text{MHz}$
Small-Signal Current Gain	$ h_{fe} $	20				$I_C=1.0\text{A}$, $V_{CE}=5.0\text{V}$, $f=1.0\text{KHz}$

Curve Characteristics

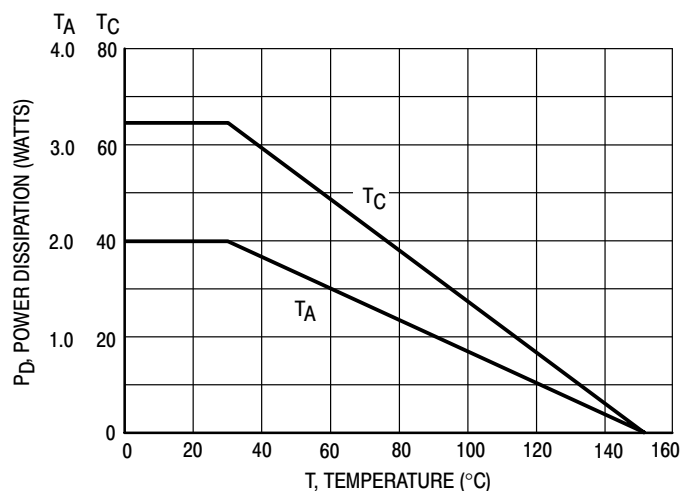


Figure 1. Power Derating

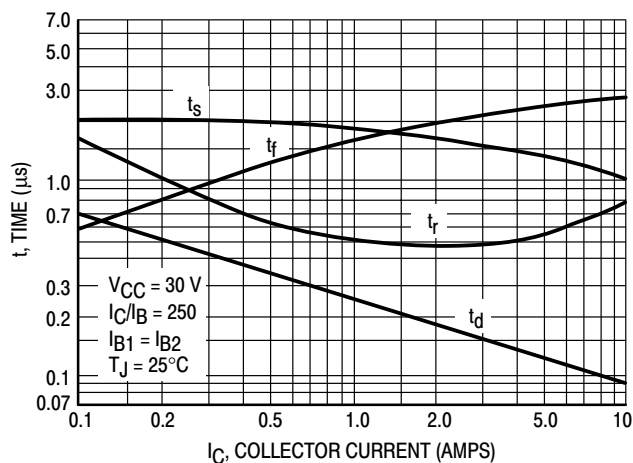


Figure 2. Switching Times

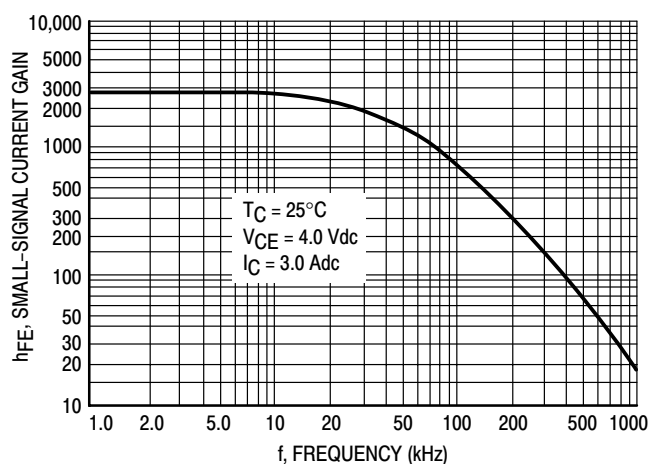


Figure 3. Small-Signal Current Gain

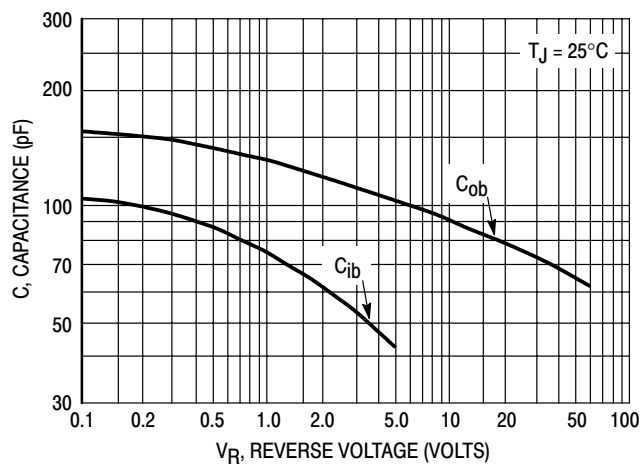


Figure 4. Capacitance

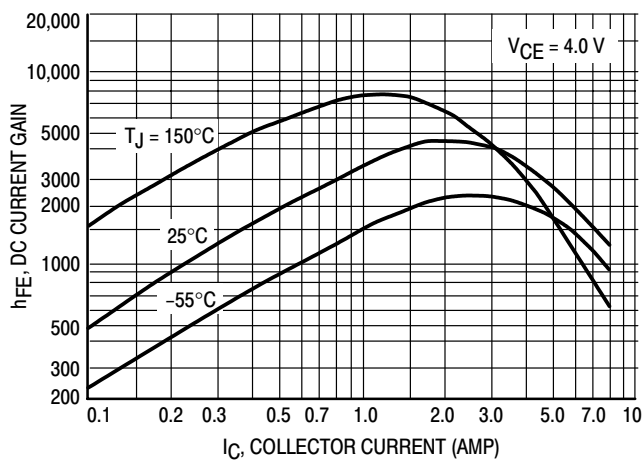


Figure 5. DC Current Gain

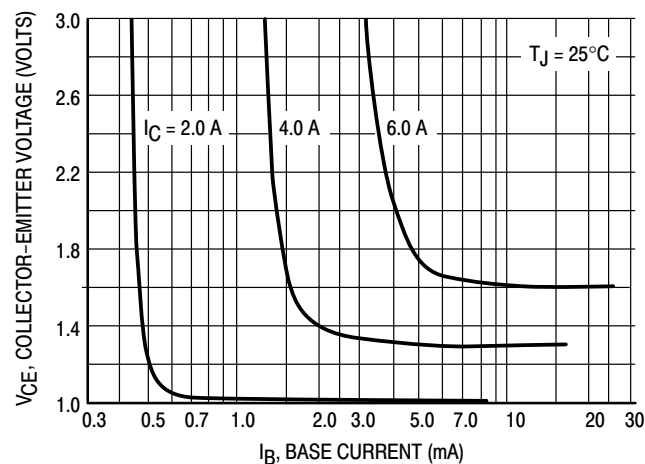


Figure 6. Collector Saturation Region

Curve Characteristics

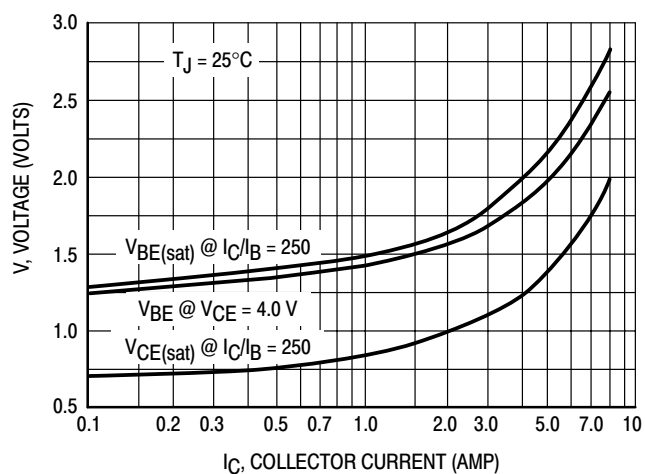


Figure 7. "On" Voltages

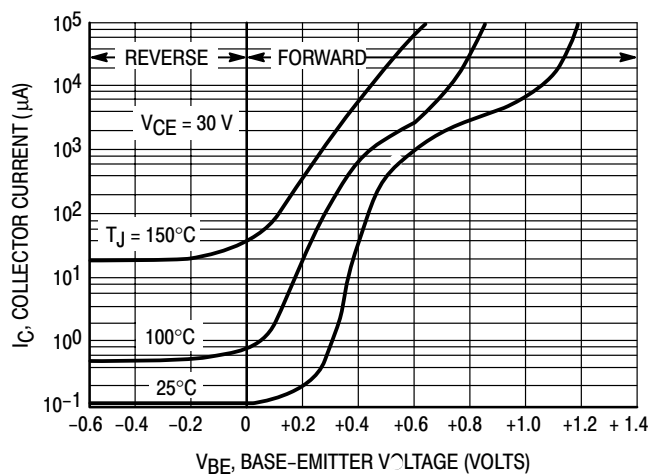


Figure 8. Collector Cut-Off Region

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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