

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

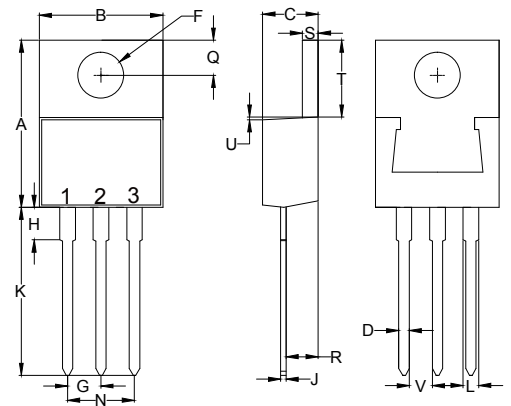
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	10	A
Peak Collector Current	I_{CM}	15	A
Continuous Base Current	I_B	250	mA
Power Dissipation Derate Above 25°C	$T_A=25^\circ\text{C}$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

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°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	80			V	I _C =200mA, I _B =0
Collector Cutoff Current	I _{CEO}			1	mA	V _{CE} =80V, I _B =0
Collector Cutoff Current	I _{CEX}			300	μA	V _{CE} =80V, V _{EB(off)} =1.5V
				3	mA	V _{CE} =80V, V _{EB(off)} =1.5V, T _C =125°C
Emitter Cutoff Current	I _{EBO}			5	mA	V _{EB} =5V, I _C =0
DC Current Gain	h _{FE(1)}	1000		20000		V _{CE} =3V, I _C =5A
	h _{FE(2)}	100				V _{CE} =3V, I _C =10A
Collector-Emitter Saturation Voltage	V _{CE(sat)}			2.0	V	I _C =5A, I _B =0.01A
				3.0	V	I _C =10A, I _B =0.1A
Base-Emitter On Voltage	V _{BE(on)}			2.8	V	V _{CE} =3V, I _C =5A
				4.5	V	V _{CE} =3V, I _C =10A
Collector Output Capacitance	C _{ob}			200	pF	V _{CB} =10V, I _E =0, f=1MHz
Small-Signal Current Gain	h _{fe}	1000				I _C =1.0A, V _{CE} =5.0V, f=1.0MHz
Small-Signal Current Gain	h _{fe}	20				I _C =1.0A, V _{CE} =5.0V, f=1.0KHz

Curve Characteristics

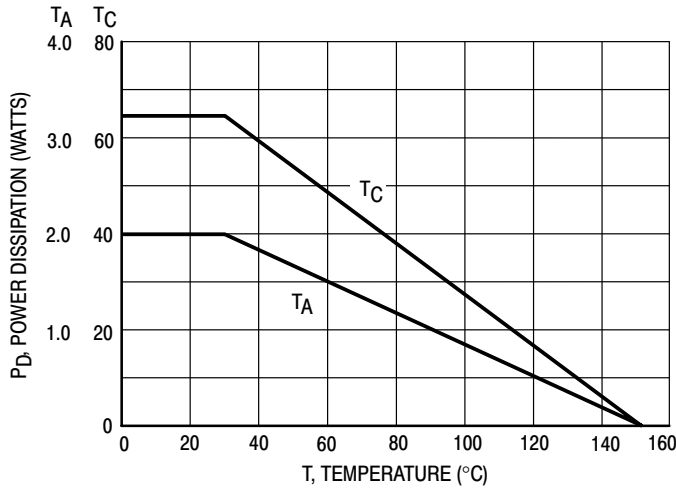


Figure 1. Power Derating

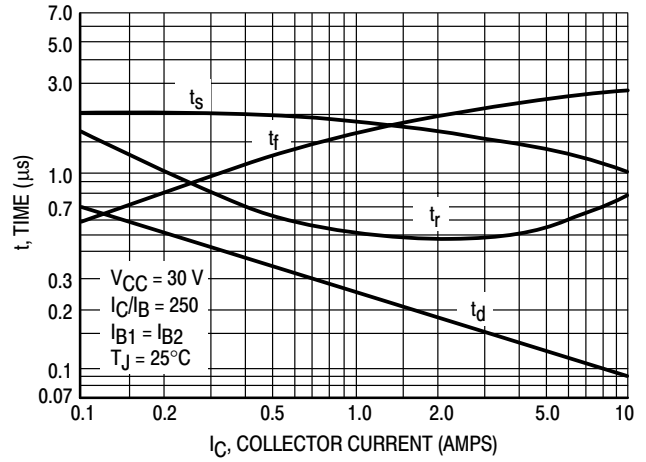


Figure 2. Switching Times

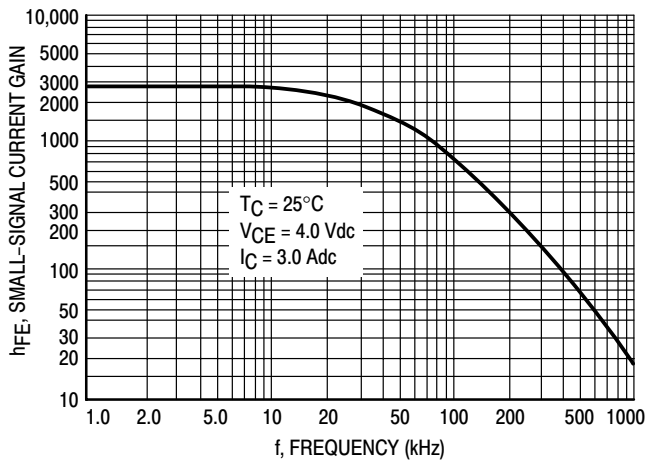


Figure 3. Small-Signal Current Gain

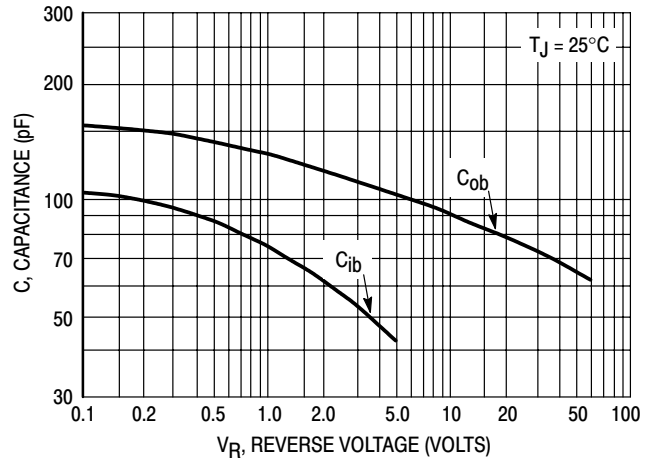


Figure 4. Capacitance

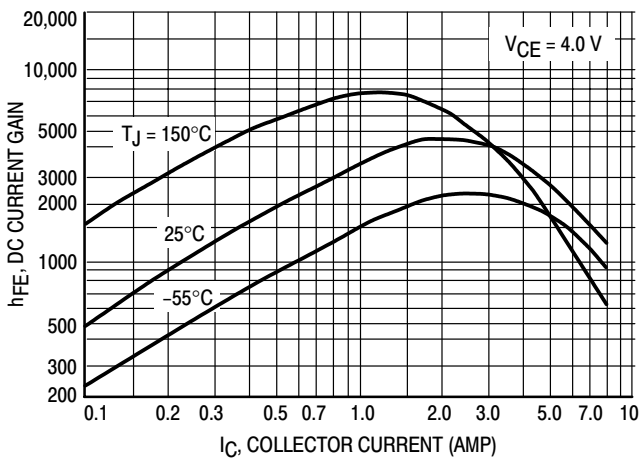


Figure 5. DC Current Gain

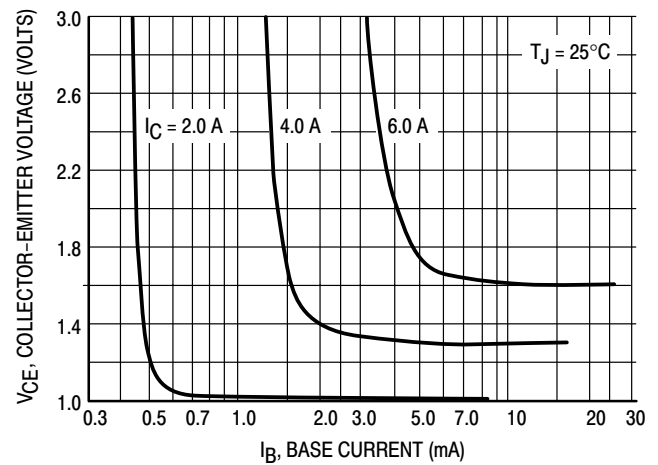


Figure 6. Collector Saturation Region

Curve Characteristics

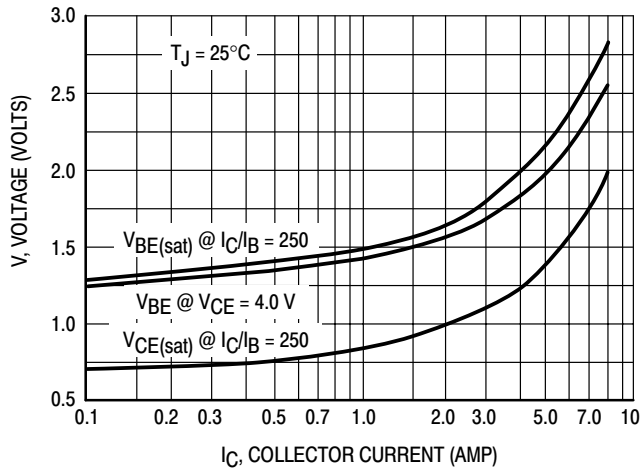


Figure 7. "On" Voltages

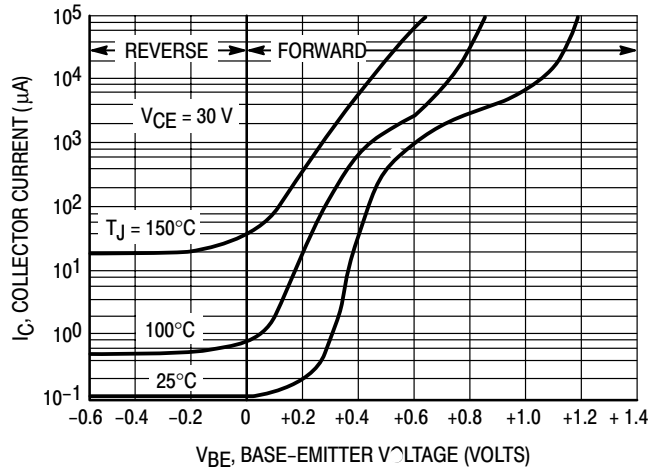


Figure 8. Collector Cut-Off Region

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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