



Micro Commercial Components
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2N5884

Features

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

Maximum Ratings⁽¹⁾

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	25	A
	Peak	50	A
I_B	Base Current	7.5	A
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	200 1.15	W W/°C
R_{JC}	Thermal Resistance, Junction to Case	0.875	°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 ⁽²⁾ ($I_C=200mA$, $I_E=0$)	80	---	Vdc
I_{EO}	Collector Cutoff Current ($V_{CE}=40Vdc$, $I_B=0$)	---	2.0	mA
I_{EX}	Collector Cutoff Current ($V_{CE}=80Vdc$, $V_{BE(off)}=1.5Vdc$) ($V_{CE}=80Vdc$, $V_{BE(off)}=1.5Vdc$, $T_C=150^\circ C$)	---	1.0 10	mA
I_{BO}	Collector Cutoff Current ($V_{CB}=80Vdc$, $I_E=0$)	---	1.0	mA
I_{EO}	Emitter Cutoff Current ($V_{EB}=5.0Vdc$, $I_C=0$)	---	1.0	mA

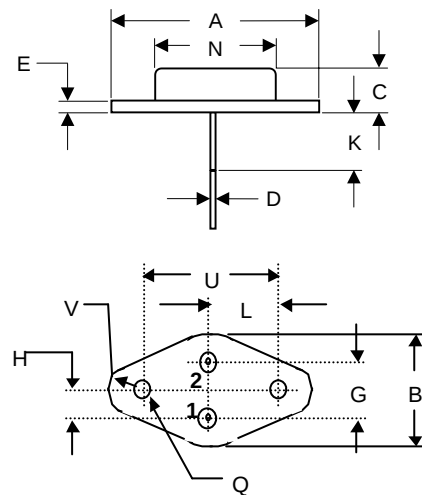
ON CHARACTERISTICS

h_{FE}	DC Current Gain ⁽²⁾ ($V_{CE}=4.0Vdc$, $I_C=3.0mA$) ($V_{CE}=4.0Vdc$, $I_C=10A$) ($V_{CE}=4.0Vdc$, $I_C=25A$)	35 20 4.0	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ⁽²⁾ ($I_C=15mA$, $I_B=1.5mA$) ($I_C=25mA$, $I_B=6.25mA$)	---	1.0 4.0	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ⁽²⁾ ($I_C=25mA$, $I_B=6.25mA$)	---	2.5	Vdc
$V_{BE(on)}$	Base-Emitter On Voltage ⁽²⁾ ($I_C=10mA$, $V_{CE}=4.0Vdc$)	---	1.5	Vdc

- Indicates JEDEC Registered Data.
- Pulse Test: PulseWidth<300us, Duty Cycle<2.0%

PNP Silicon Complementary Power Transistor

TO-3



PIN 1. BASE
PIN 2. EMITTER
CASE. COLLECTOR

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	1.550	REF	39.37	REF	
B	---	1.050	---	26.67	
C	.250	.335	6.35	8.51	
D	.038	.043	0.97	1.09	
E	.055	.070	1.40	1.77	
G	.430	BSC	10.92	BSC	
H	.215	BSC	5.46	BSC	
K	.440	.480	11.18	12.19	
L	.665	BSC	16.89	BSC	
N	---	.830	---	21.08	
Q	.151	.165	3.84	4.19	Ø
U	1.187	BSC	30.15	BSC	
V	.131	.188	3.33	4.77	

Symbol	Parameter	Min	Max	Units
DYNAMIC CHARACTERISTICS				
f_T	Current-Gain-Bandwidth Product ⁽³⁾ ($I_C=1.0\text{A dc}$, $V_{CE}=10\text{Vdc}$, $f=1.0\text{MHz}$)	4.0	---	MHz
C_{ob}	Output Capacitance ($V_{CB}=10\text{Vdc}$, $I_E=0$, $f=1.0\text{MHz}$)	---	1000	pF
h_{fe}	Small-Signal Current Gain ($I_C=3.0\text{A dc}$, $V_{CE}=4.0\text{Vdc}$, $f=1.0\text{KHz}$)	20	---	---
SWITCHING CHARACTERISTICS				
t_r	Rise Time	($V_{CC}=30\text{Vdc}$, $I_C=10\text{A dc}$, $I_{B1}=I_{B2}=1.0\text{A dc}$)	0.7	us
t_s	Storage Time		1.0	us
t_f	Fall Time		0.8	us

3. $f_T = |h_{fe}| \times f_{\text{test}}$

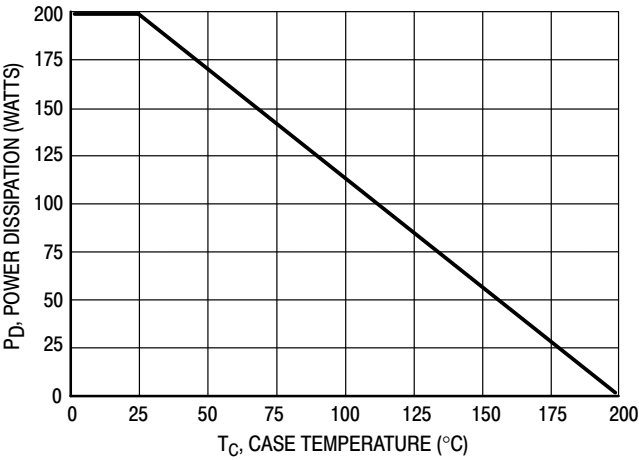


Figure 1. Power Derating

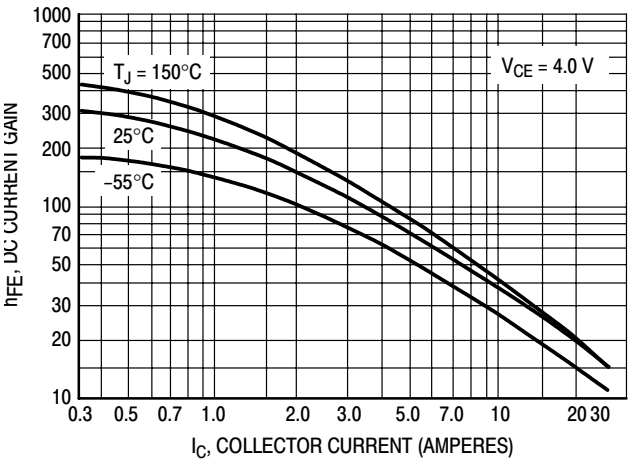


Figure 2. DC Current Gain

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•M•C•C•

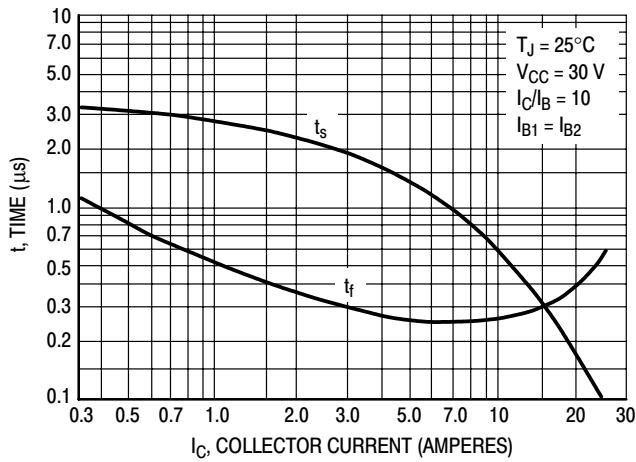


Figure 3. Turn-Off Time

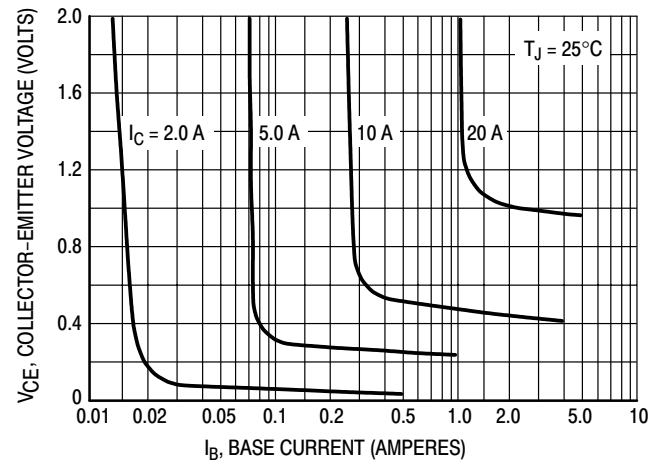


Figure 4. Collector Saturation Region

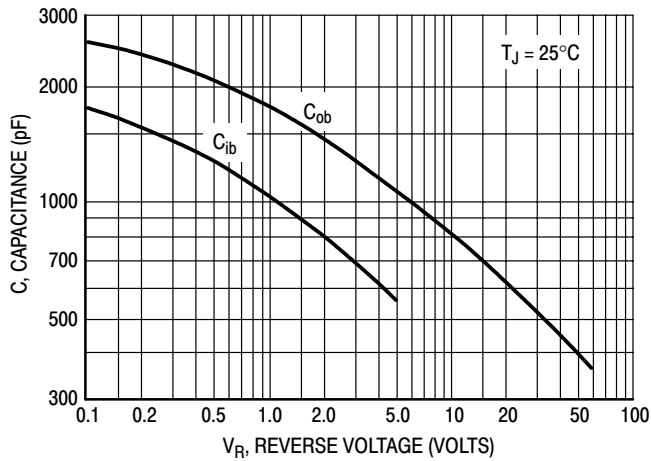


Figure 5. Capacitance

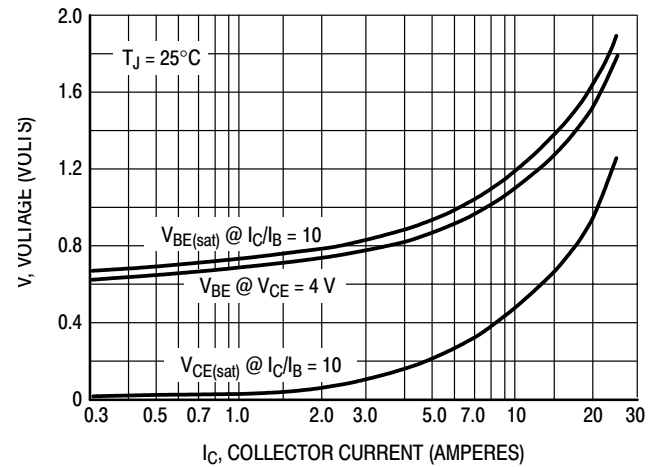


Figure 6. "On" Voltages