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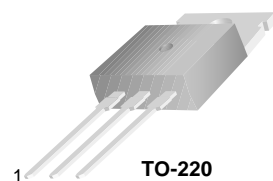


January 2010

D44C8

NPN Power Amplifier

- Sourced from process 4P.



TO-220
1. Base 2. Collector 3. Emitter

Absolute Maximum Ratings $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	60	V
I_C	Collector Current - Continuous	4.0	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ\text{C}$

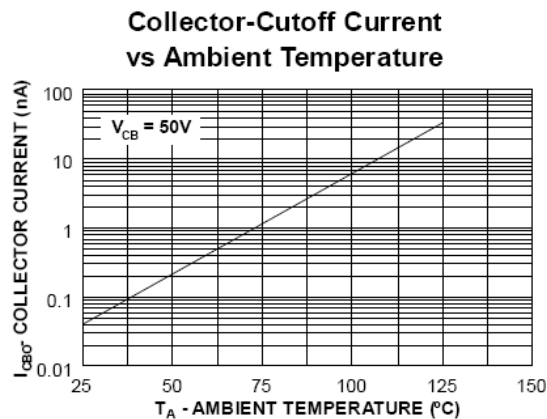
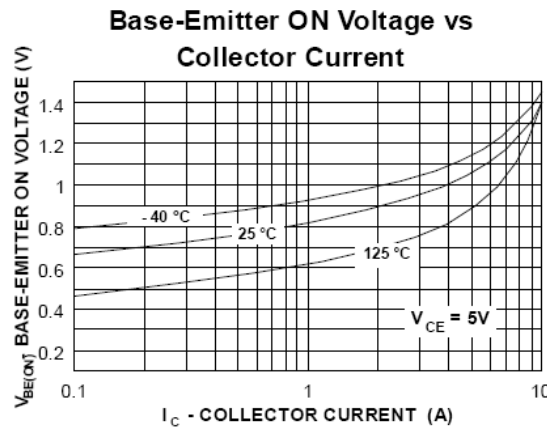
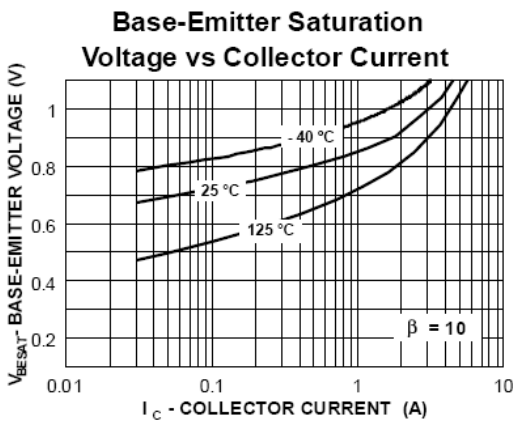
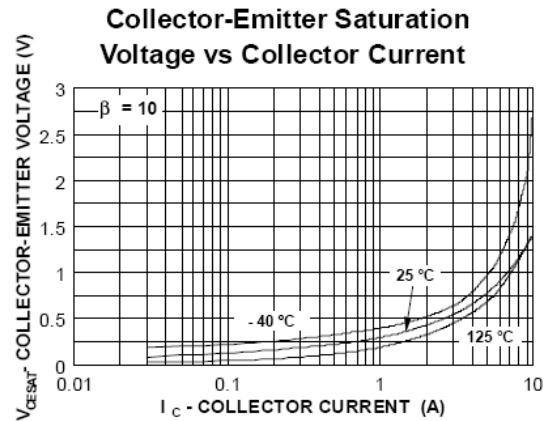
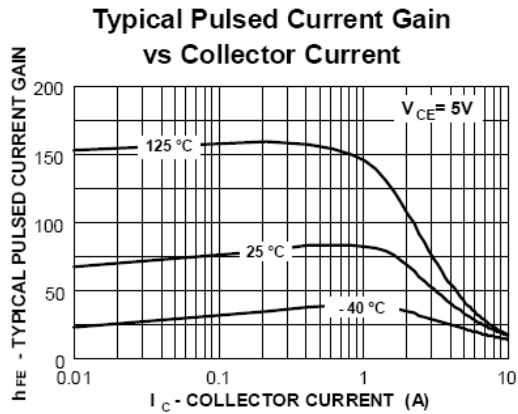
Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 100\text{mA}, I_B = 0$	60			V
I_{CES}	Collector-Emitter-(Base)Short	$V_{CE} = 70\text{V}, I_E = 0$			10	μA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 5.0\text{V}, I_B = 0$			100	μA
On Characteristics						
h_{FE}	DC Current Gain	$V_{CE} = 1.0\text{V}, I_C = 0.2\text{A}$ $V_{CE} = 1.0\text{V}, I_C = 2.0\text{A}$	40 20		120	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 1.0\text{A}, I_B = 50\text{mA}$			0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 1.0\text{A}, I_B = 100\text{mA}$			1.3	V
Small Signal Characteristics						
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}$			100	pF
f_T	Current Gain Bandwidth Product	$I_C = 20\text{mA}, V_{CE} = 4.0\text{V}$			40	MHz
t_{ON}	t_d , Delay Time t_r , Rise Time	$I_C = 1.0\text{A},$ $I_{B1} = I_{B2} = 0.1\text{A},$ $V_{CC} = 30\text{V}, t_p = 25\mu\text{s}$		54 490		ns
t_{OFF}	t_s , Storage Time t_f , Fall Time			636 59		ns

Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	60 480	W $\text{mW}/^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	2.1	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$






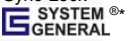
Typical Performance Characteristics





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