D44C11
Silicon NPN Transistor
Power Amp Driver, Output, Switch
TO−220 Type Package

Description:

The D44C11 silicon NPN transistors in a TO−220 type package designed for various specific and general purpose amplifications such as output and driver stages of amplifiers operating at frequencies from DC to greater than 1.0MHz, series, shunt and switching regulators, low and high frequency inverters/converters and many others.

Features:

- Very Low Collector−Emitter Saturation Voltage
- excellent Linearity
- Fast Switching

Absolute Maximum Ratings:

Collector−Emitter Voltage, V_{CEO} 80V

Collector−Emitter Voltage, V_{CES} 90V

Emitter−Base Voltage, V_{EBO} 5V

Collector Current, I_C
    Continuous 4A
    Peak 6A

Base Current, I_B 1A

Total Power Dissipation (T_C = +25°C), P_D 30W
    Derate Above +25°C . . . . 0.24W/°C

Operating Junction Temperature Range, T_J . . . . −55° to +150°C

Storage Temperature Range, T_{stg} . . . . −55° to +150°C

Thermal Resistance, Junction−to−Case, R_{thJC} . . . . 1.8°C/W

Electrical Characteristics: (T_C = +25°C, Note 3 unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector Cutoff Current	I_{CES}	V_{CE} = 90V	–	–	10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, I_C = 0	–	–	100	μA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	V_{CE} = 1V, I_C = 200mA	100	–	220	
		V_{CE} = 1V, I_C = 2A	20	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 1A, I_B = 50mA	–	–	0.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 1A, I_B = 100mA	–	–	1.3	V
Dynamic Characteristics						
Current–Gain Bandwidth Product	f_T	I_C = 20mA, V_{CE} = 4V, f = 1MHz, Note 2	–	50	–	MHz
Switching Times						
Rise Time	t_r	I_C = 1A, V_{CC} = 20V, I_{B1} = $-I_{B2}$ = 100mA	–	–	0.3	μs
Storage Time	t_s		–	–	0.7	μs
Fall Time	t_f		–	–	0.4	μs

Note 1. Pulse Test: Pulse width = 300μs, Duty Cycle ≤ 2%.
Note 2. $f_T = |h_{fe}| \cdot f_{test}$.