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BD911 (NPN) & BD912 (PNP)
Silicon Complementary Transistors
Audio Power Amp, Switch
TO–220 Type Package

Description:

The BD911 (NPN) and BD912 (PNP) are silicon complementary power transistors in a TO–220 plastic package intended for use in power amplifier and switching applications.

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 100V
Collector–Base Voltage, V_{CBO} 100V
Emitter–Base Voltage, V_{EBO} 5V
Collector Current, I_C
  Continuous 15A
  Peak 20A
Base Current, I_B 5A
Total Power Dissipation (T_C = +25°C), P_D 90W
  Derate Above +25°C . . . . . 0.72W/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +150°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Thermal Resistance Junction–to–Case, R_{thJC} . . . . . 1.38°C/W Max

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	I_B = 0, I_C = 50mA, Note 1	100	–	–	V
Collector Cutoff Current	I_{CEO}	I_B = 0, V_{CE} = 50V	–	–	1	mA
	I_{CBO}	I_E = 0, V_{CB} = 100V	–	–	0.5	mA
Emitter Cutoff Current	I_{EBO}	I_C = 0, V_{EB} = 5V	–	–	1	mA

Note 1. Pulse Test; Pulse width = 300μs, Duty Cycle ≤ 2%.

Electrical Characteristics (Cont'd): (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	I_C = 0.5A, V_{CE} = 4V	40	–	250	
		I_C = 5A, V_{CE} = 4V	15	–	150	
		I_C = 10A, V_{CE} = 4V	5	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 5A, I_B = 0.5A	–	–	1	V
		I_C = 10A, I_B = 2.5A	–	–	3	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 10A, I_B = 2.5A	–	–	2.5	V
Base–Emitter ON Voltage	$V_{BE(on)}$	I_C = 5A, V_{CE} = 4V	–	–	1.5	V
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	I_C = 500mA, V_{CE} = 4V, f = 1MHz, Note 2	3	–	–	MHz

Note 1. Pulse Test; Pulse width = 300μs, Duty Cycle ≤ 2%.

Note 2. $f_T = |h_{fe}| \bullet f_{test}$.