THE DATASHEET OF

2N5882

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2N5882
Silicon NPN Power Transistor
High Power Audio Amplifier
TO–3 Type Package

Description:

The 2N5882 is a silicon NPN transistor in a TO–3 type package designed for use in general purpose power amplifier and switching applications.

Features:

- Low Collector–Emitter Saturation Voltage: $V_{CE(sat)}$ = 1V (Max) at I_C = 7A
- Excellent DC Current Gain: h_{FE} = 20 – 100 @ I_C = 6A

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 80V
Collector–Base Voltage, V_{CBO} 80V
Emitter–Base Voltage, V_{EBO} 5V
Collector Current, I_C
  Continuous 15A
  Peak 30A
Base Current, I_B 5A
Total Device Dissipation (T_C = +25°C), P_D 160W
  Derate Above 25°C . . . . . .915W/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +200°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1.1°C/W

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_C = 200mA, I_B = 0, Note 1	80	–	–	V
Collector Cutoff Current	I_{CEO}	V_{CE} = 40V, I_B = 0	–	–	1.0	mA
	I_{CBO}	V_{CB} = 80V, I_E = 0	–	–	0.5	mA
	I_{CBX}	V_{CE} = 80V, $V_{BE(off)}$ = 1.5V	–	–	0.5	mA
		V_{CE} = 80V, $V_{BE(off)}$ = 1.5V, T_C = +150°C	–	–	5	mA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, I_C = 0	–	–	1.0	mA

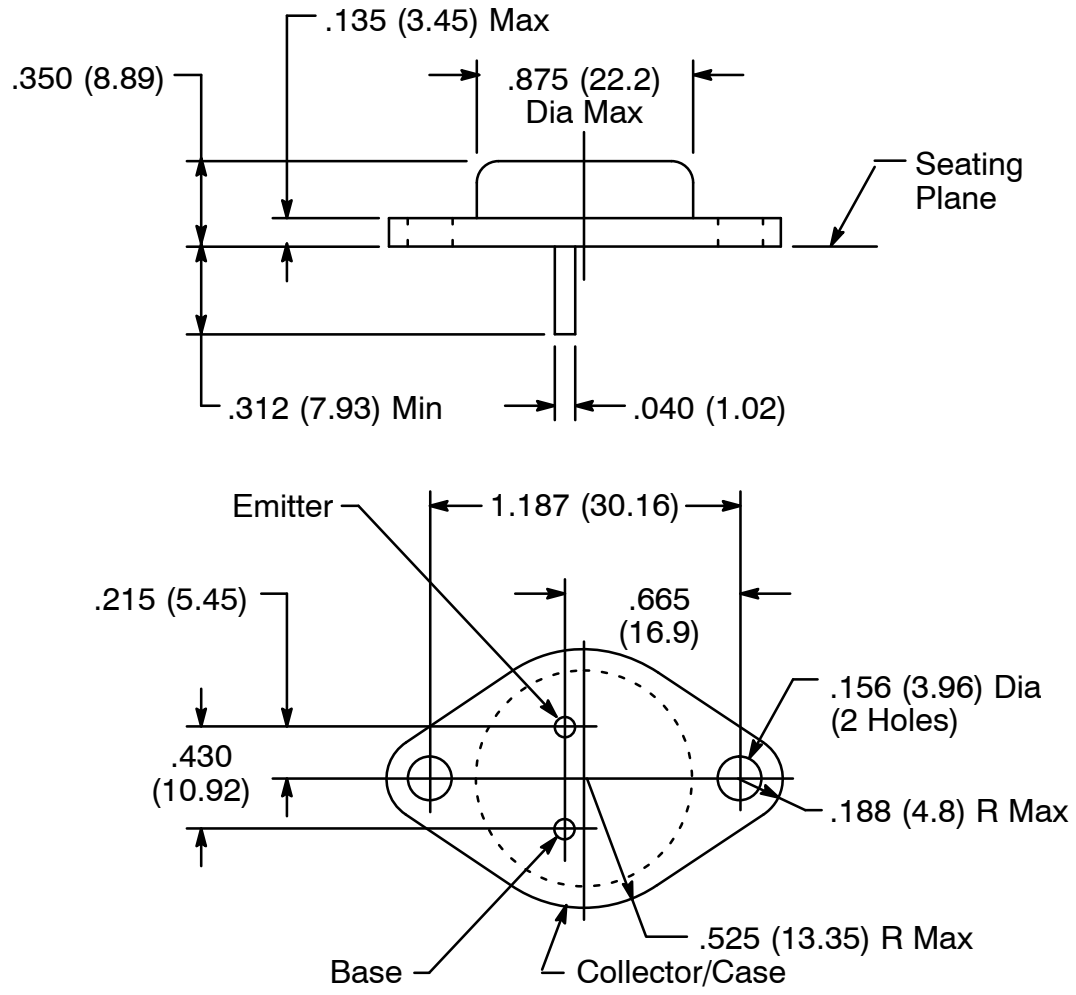
Note 1. Pulse Test: Pulse Width ≤ 300μs. Duty Cycle ≤ 2%.

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 = 2A, V_{CE} = 4V	35	–	–	
		I_C = 6A, V_{CE} = 4V	20	–	100	
		I_C = 15A, V_{CE} = 4V	4.0	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 7A, I_B = 0.7A	–	–	1.0	V
		I_C = 15A, I_B = 3.75A	–	–	4.0	V
Base–Emitter ON Voltage	$V_{BE(on)}$	I_C = 6A, V_{CE} = 4V	–	–	1.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 15A, I_B = 3.75A	–	–	2.5	V
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	I_C = 1A, V_{CE} = 10V, f = 1MHz, Note 2	4.0	–	–	MHz
Small–Signal Current Gain	h_{fe}	I_C = 2A, V_{CE} = 4V, f = 1kHz	20	–	–	

Note 1. Pulse Test: Pulse Width ≤ 300μs. Duty Cycle ≤ 2%.

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



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