

2N6488

Silicon NPN Transistor Audio Power Amp, Switch TO-220 Type Package

Description:

The 2N6488 is a silicon NPN power transistor in a TO-220 plastic package intended for use in general purpose amplifier and switching applications.

Features:

- DC Current Gain Specified to 15A:
 $h_{FE} = 20 - 150 @ I_C = 5A$
 $= 5 \text{ (Min) } @ I_C = 15A$
- Collector-Emitter Sustaining Voltage: $V_{CEO(sus)} = 80V \text{ (Min)}$
- High Current Gain-Bandwidth Product: $f_T = 5MHz \text{ (Min) } @ I_C = 1A$

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	80V
Collector-Base Voltage, V_{CB}	90V
Emitter-Base Voltage, V_{EB}	5V
Continuous Collector Current, I_C	15A
Base Current, I_B	5A
Total Power Dissipation ($T_C = +25^\circ C$), P_D	75W
Derate Above $+25^\circ C$	0.6W/ $^\circ C$
Total Power Dissipation ($T_A = +25^\circ C$), P_D	1.8W
Derate Above $+25^\circ C$	0.014W/ $^\circ C$
Operating Junction Temperature Range, T_J	-65° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ C$
Thermal Resistance Junction-to-Ambient, R_{thJA}	70 $^\circ C/W$ Max
Thermal Resistance Junction-to-Case, R_{thJC}	1.67 $^\circ C/W$ Max

Electrical Characteristics: ($T_C = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_B = 0, I_C = 200mA$, Note 1	80	—	—	V
	V_{CEX}	$V_{BE} = 1.5V, I_C = 200mA$, Note 1	90	—	—	V
Collector Cutoff Current	I_{CEO}	$I_B = 0, V_{CE} = 40V$	—	—	1.0	mA
	I_{CEX}	$V_{EB(off)} = 1.5V, V_{CE} = 85V$	—	—	500	μA
		$T_C = +150^\circ C$	—	—	5.0	μA
Emitter Cutoff Current	I_{EBO}	$I_C = 0, V_{BE} = 5V$	—	—	1	mA

Note 1. Pulsed; Pulse Duration = 300 μs , Duty Cycle = 1.5%.

Electrical Characteristics (Cont'd): ($T_C = +25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Current Gain	h_{FE}	$I_C = 5\text{A}, V_{CE} = 4\text{V}$	20	–	150	
		$I_C = 15\text{A}, V_{CE} = 4\text{V}$	5	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 0.5\text{A}$	–	–	1.3	V
		$I_C = 10\text{A}, I_B = 2.5\text{A}$	–	–	3.5	V
Base–Emitter ON Voltage	$V_{BE(on)}$	$I_C = 5\text{A}, V_{CE} = 4\text{V}$	–	–	1.3	V
		$I_C = 15\text{A}, V_{CE} = 4\text{V}$	–	–	3.5	V
Current–Gain Bandwidth Product	f_T	$I_C = 1\text{A}, V_{CE} = 4\text{V}, f_{test} = 1\text{MHz},$ Note 1	5	–	–	MHz
Small–Signal Current Gain	h_{fe}	$I_C = 1\text{A}, V_{CE} = 4\text{V}, f = 1\text{kHz}$	25	–	–	

Note 1. Pulsed; Pulse Duration = 300 μs , Duty Cycle = 1.5%.

