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## 2N3702

### Silicon PNP Transistor Audio Power Amplifier TO-92 Type Package

**μAbsolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Collector-Base Voltage, $V_{CBO}$ .....	40V
Collector-Emitter Voltage, $V_{CEO}$ .....	25V
Emitter-Base Voltage, $V_{EBO}$ .....	5V
Collector Current, $I_C$ .....	500mA
Collector Dissipation, $P_C$ .....	625mW
Derate above $+25^\circ\text{C}$ .....	5mW/ $^\circ\text{C}$
Operating Junction Temperature Range, $T_J$ .....	$-55^\circ$ to $+150^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-55^\circ$ to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	83.3 $^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Ambient, $R_{thJA}$ .....	200 $^\circ\text{C}/\text{W}$

Note 1. These ratings are limiting values above which the serviceability of the device may be impaired and are based on maximum temperature of  $+150^\circ\text{C}$ .

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\text{mA}, I_E = 0$	40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\mu\text{A}, I_B = 0$ , Note 2	25	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 20\text{V}, I_E = 0$	-	-	100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 3\text{V}, I_C = 0$	-	-	100	nA
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 50\text{mA}$ , Note 2	60	-	300	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$ , Note 2	-	-	0.25	V
Base-Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = 5\text{V}, I_C = 50\text{mA}$ , Note 2	0.6	-	1	V
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}$	-	-	12	pF
Current Gain - Bandwidth Product	$f_T$	$I_C = 50\text{mA}, V_{CE} = 5\text{V}$	100	-	-	MHz

Note 2. Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

