

MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

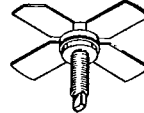
Advance Information

The RF Line

UHF Power Transistor

... designed for 12.5 Volt UHF large-signal amplifier applications in industrial and commercial FM equipment.

- 470 MHz
- 2 W — P_{out}
- 12.5 V — V_{CC}
- 10 dB Gain

PT8809A
2 W — 470 MHz
UHF POWER
TRANSISTOR


.280 SOE
CASE 244C-01, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	16	Vdc
Collector-Base Voltage	V_{CES}	36	Vdc
Emitter-Base Voltage	V_{EBO}	3.5	Vdc
Collector Current — Continuous	I_C	0.8	Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	14.5 0.083	Watts $W/^\circ\text{C}$
Operating Junction Temperature	T_J	200	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	12	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 40\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	16	—	—	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 40\text{ mA}$, $V_{BE} = 0$)	$V_{(BR)CES}$	36	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 1\text{ mA}$, $I_C = 0$)	$V_{(BR)EBO}$	3.5	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 15\text{ V}$, $I_E = 0$)	I_{CBO}	—	—	1	mA

ON CHARACTERISTICS

DC Current Gain ($I_C = 200\text{ mA}$, $V_{CE} = 5\text{ V}$)	h_{FE}	15	—	—	—
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DYNAMIC CHARACTERISTICS

Output Capacitance ($V_{CB} = 15\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$)	C_{ob}	—	—	7	pF
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(continued)

This document contains information on a new product. Specifications and information herein are subject to change without notice.

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PT8809A

MOTOROLA SC XSTRS/R F

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ELECTRICAL CHARACTERISTICS — continued

Characteristic	Symbol	Min	Typ	Max	Unit
FUNCTIONAL TESTS					
Common-Emitter Amplifier Power Gain ($V_{CE} = 12.5 \text{ V}$, $P_{out} = 2 \text{ W}$, $f = 470 \text{ MHz}$)	GpE	10	—	—	dB
Collector Efficiency ($V_{CE} = 12.5 \text{ V}$, $P_{out} = 2 \text{ W}$, $f = 470 \text{ MHz}$)	η_c	60	—	—	%
Load Mismatch ($V_{CE} = 12.5 \text{ V}$, $P_{out} = 2 \text{ W}$, $f = 470 \text{ MHz}$, Load VSWR = $\infty:1$, All Phase Angles)	ψ	No Degradation in Output Power			
Input Impedance Common Emitter (Typ) ($V_{CE} = 12.5 \text{ V}$, $P_{out} = 2 \text{ W}$, $f = 470 \text{ MHz}$)	$Z_{in} = 2 + j3.2 \text{ Ohms}$				
Load Impedance, Common Emitter (Typ) ($V_{CE} = 12.5 \text{ V}$, $P_{out} = 2 \text{ W}$, $f = 470 \text{ MHz}$)	$Z_{load} = 18 + j22 \text{ Ohms}$				

MOTOROLA RF DEVICE DATA

2-1100