MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

PT8810

Advance Information

The RF Line

UHF Power Transistor

5 W — 470 MHz UHF POWER TRANSISTOR

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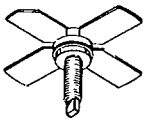
... designed for 12.5 Volt UHF large-signal amplifier applications in industrial and commercial FM equipment.

- 470 MHz
- 5 W — P_{out}
- 12.5 V — V_{CC}
- 8.5 dB Gain



.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}	4	Vdc
Collector Current — Continuous	I_C	1.7	Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	35 0.2	Watts W/°C
Operating Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{stg}	−65 to +200	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C = 50 mA, I_B = 0)	$V_{(BR)CEO}$	16	—	—	Vdc
Collector-Emitter Breakdown Voltage (I_C = 10 mA, V_{BE} = 0)	$V_{(BR)CES}$	36	—	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 2 mA, I_C = 0)	$V_{(BR)EBO}$	4	—	—	Vdc
Collector Cutoff Current (V_{CB} = 15 V, I_E = 0)	I_{CBO}	—	—	1	mAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 200 mA, V_{CE} = 5 V)	h_{FE}	20	—	—	—
DYNAMIC CHARACTERISTICS					
Output Capacitance (V_{CB} = 15 V, I_E = 0, f = 1 MHz)	C_{ob}	—	—	17	pF

(continued)

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

ELECTRICAL CHARACTERISTICS — continued

Characteristic	Symbol	Min	Typ	Max	Unit
FUNCTIONAL TESTS					
Common-Emitter Amplifier Power Gain (V_{CE} = 12.5 V, P_{out} = 5 W, f = 470 MHz)	G_{PE}	8.5	—	—	dB
Collector Efficiency (V_{CE} = 12.5 V, P_{out} = 5 W, f = 470 MHz)	η_C	55	—	—	%
Load Mismatch (V_{CE} = 12.5 V, P_{out} = 5 W, f = 470 MHz, Load VSWR = ∞:1, All Phase Angles)	ψ	No Degradation in Output Power			
Input Impedance Common Emitter (Typ) (V_{CE} = 12.5 V, P_{out} = 5 W, f = 470 MHz)	Z_{in} = 1.6 + j3.5 Ohms				
Load Impedance, Common Emitter (Typ) (V_{CE} = 12.5 V, P_{out} = 5 W, f = 470 MHz)	Z_{load} = 9.5 + j5.7 Ohms				