The RF Line

NPN Silicon RF Power Transistors

MRF896

Motorola Preferred Device

3.0 W, 900 MHz RF POWER TRANSISTORS NPN SILICON

Designed for 24 Volt UHF large-signal, common emitter, Class AB and Class A linear amplifier applications in industrial and commercial FM/AM equipment operating in the range 800–960 MHz.

- Specified 24 Volt, I_{cq} = 8.0 mA (Class AB), 900 MHz Characteristics
  Output Power = 3.0 Watts
  Minimum Gain = 10 dB @ 900 MHz
  Minimum Efficiency = 30% @ 900 MHz, 3.0 Watts
  Maximum Intermodulation Distortion –30 dBc @ 3.0 Watts (PEP)
- Characterized with Series Equivalent Large-Signal Parameters from 800 to 960 MHz
- Silicon Nitride Passivated
- 100% Tested for Load Mismatch Stress at all Phase Angles with 5:1 VSWR @ 26 Vdc, at rated output power
- Gold Metallized, Emitter Ballasted for Long Life and Resistance to Metal Migration
- Circuit board photomaster available upon request by contacting RF Tactical Marketing in Phoenix, AZ.

CASE 305-01, STYLE 1
MRF896

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	30	Vdc
Collector-Emitter Voltage	V_{CES}	55	Vdc
Emitter-Base Voltage	V_{EBO}	4.0	Vdc
Collector-Current — Continuous	I_C	0.45	Adc
Total Device Dissipation @ T_C = 50°C Derate Above 50°C	P_D	17 0.143	Watts W/°C
Storage Temperature Range	T_{stg}	–65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	7.0	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C = 20 mAdc, I_B = 0)	$V_{(BR)CEO}$	30	37	—	Vdc
Collector-Emitter Breakdown Voltage (I_C = 20 mAdc, V_{BE} = 0)	$V_{(BR)CES}$	55	92	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 1.0 mAdc, I_C = 0)	$V_{(BR)EBO}$	4.0	5.0	—	Vdc
Collector Cutoff Current (V_{CE} = 30 Vdc, V_{BE} = 0)	I_{CES}	—	1.0 nA	1.0	mAdc
ON CHARACTERISTICS					
DC Current Gain (I_E = 100 mAdc, V_{CE} = 5.0 Vdc)	h_{FE}	30	60	120	—

Preferred devices are Motorola recommended choices for future use and best overall value.

(continued)

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