

HG RF POWER TRANSISTOR

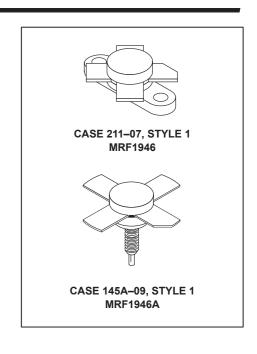
MRF1946A

ROHS Compliance, Silicon NPN POWER TRANSISTOR

- ... designed for 12.5 volt large-signal power amplifiers in commercial and industrial equipment.
- ω High Common Emitter Power Gain
- Specified 12.5 V, 175 MHz Performance
 Output Power = 30 Watts
 Power Gain = 10 dB
 Efficiency = 60%
- ω Diffused Emitter Resistor Ballasting
- ω Characterized to 220 MHz
- ω Load Mismatch at High Line and Overdrive Conditions

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	VCEO	16	Vdc
Collector–Base Voltage	V _{CBO}	36	Vdc
Emitter–Base Voltage	V _{EBO}	4.0	Vdc
Collector Current — Continuous	IC	8.0	Adc
Total Device Dissipation @ T _A = 255C Derate above 255C	PD	100 0.57	Watts W/5C
Storage Temperature Range	T _{stg}	-65 to +150	5C
Junction Temperature	TJ	200	5C



THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.75	5C/W

ELECTRICAL CHARACTERISTICS (T_C = 255C unless otherwise noted.)

Characteristic	Symbol	Min	Тур	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (I _C = 25 mAdc, I _B = 0)	V(BR)CEO	16	_	_	Vdc
Collector–Emitter Breakdown Voltage (I _C = 25 mAdc, V _{BE} = 0)	V _(BR) CES	36	_	_	Vdc
Emitter–Base Breakdown Voltage (I _E = 5.0 mAdc, I _C = 0)	V _{(BR)EBO}	4.0	_	_	Vdc
Collector Cutoff Current (V _{CE} = 15 Vdc, V _{BE} = 0, T _C = 255C)	ICES	_	_	5.0	mAdc
ON CHARACTERISTICS					
DC Current Gain (I _C = 1.0 Adc, V _{CE} = 5.0 Vdc)	hFE	40	75	150	_
DYNAMIC CHARACTERISTICS					
Output Capacitance (V _{CB} = 15 Vdc, I _E = 0, f = 1.0 MHz)	C _{ob}	_	75	100	pF
FUNCTIONAL TESTS			•	•	
Common–Emitter Amplifier Power Gain (V _{CC} = 12.5 Vdc, P _{Out} = 30 W, f = 175 MHz)	G _{pe}	10	11	_	dB
Collector Efficiency (V _{CC} = 12.5 Vdc, P _{out} = 30 W, f = 175 MHz)	η	60	70	_	%
Load Mismatch (V _{CC} = 15.5 Vdc, P _{in} = 2.0 dB Overdrive, Load VSWR = 30:1)	Ψ	No Degradation in Power Output			

Note: Above parameters, ratings, limits and conditions are subject to change.

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