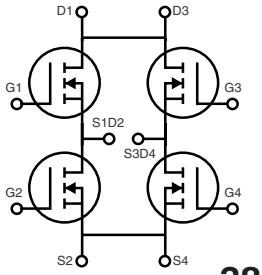
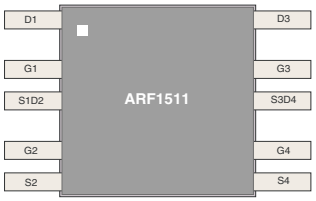
Microsemi
POWER PRODUCTS GROUP

ARF1511





RF POWER MOSFET
FULL-BRIDGE

380V 750W 40MHz

The ARF1511 is four RF power transistor arranged in an H-Bridge configuration. It is intended for off-line 300V operation in high power scientific, medical and, industrial RF power generator and amplifier applications up to 40 MHz.

- **Specified 380 Volt, 27.12 MHz Characteristics:**
  - **Output Power = 750 Watts.**
  - **Gain = 17dB (Class D)**
- **RoHS Compliant**
- **High Performance Power RF Package.**
- **Very High Breakdown for Improved Ruggedness.**
- **Low Thermal Resistance.**
- **Nitride Passivated Die for Improved Reliability.**

MAXIMUM RATINGS

All Ratings: T_C = 25°C unless otherwise specified.

Symbol	Parameter	ARF 1511	UNIT
V_{DSS}	Drain-Source Voltage	500	Volts
I_D	Continuous Drain Current @ T_C = 25°C	20	Amps
V_{GS}	Gate-Source Voltage	±30	Volts
P_D	Total Device Dissipation @ T_C = 25°C	1500	Watts
T_J,T_{STG}	Operating and Storage Junction Temperature Range	-55 to 175	°C
T_L	Lead Temperature: 0.063" from Case for 10 Sec.	300	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage (V_{GS} = 0V, I_D = 250 µA)	500			Volts
$V_{DS(ON)}$	On State Drain Voltage ① ($I_{D(ON)}$ = 10A, V_{GS} = 10V)		5	6	
I_{DSS}	Zero Gate Voltage Drain Current (V_{DS} = 500V, V_{GS} = 0V)			25	µA
	Zero Gate Voltage Drain Current (V_{DS} = 400V, V_{GS} = 0V, T_C = 125°C)			250	
I_{GSS}	Gate-Source Leakage Current (V_{GS} = ±30V, V_{DS} = 0V)			±100	nA
g_{fs}	Forward Transconductance (V_{DS} = 25V, I_D = 10A)	3.3	5.5	8	mhos
$V_{isolation}$	RMS Voltage (60Hz Sinewave from terminals to mounting surface for 1 minute)	TBD			Volts
$V_{GS(TH)}$	Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = 50mA)	3		5	Volts

THERMAL CHARACTERISTICS

Symbol	Characteristic (per package unless otherwise noted)	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction to Case			0.10	°C/W
$R_{\theta JHS}$	Junction to Sink (Use High Efficiency Thermal Joint Compound and Planar Heat Sink Surface.)		0.16		

CAUTION: These Devices are Sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.

DYNAMIC CHARACTERISTICS

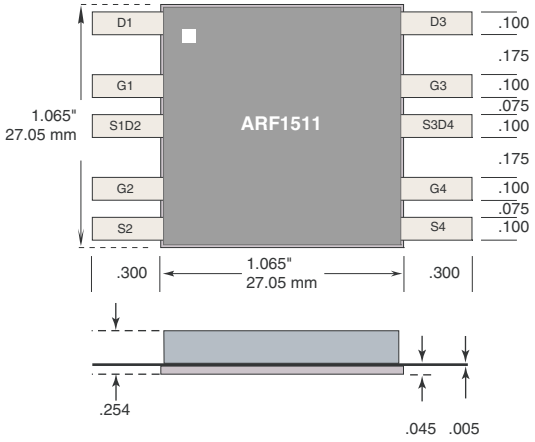
Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
C_{iss}	Input Capacitance	V_{GS} = 0V V_{DS} = 200V f = 1 MHz		1200	1400	pF
C_{oss}	Output Capacitance			150	200	
C_{rss}	Reverse Transfer Capacitance			60	90	
$t_{d(on)}$	Turn-on Delay Time	V_{GS} = 15V V_{DD} = 250V I_D = 20A @ 25°C R_G = 1.6 Ω		7		ns
t_r	Rise Time			6		
$t_{d(off)}$	Turn-off Delay Time			20		
t_f	Fall Time			4.4		
E_{AR}	Repetitive Avalanche Energy ②		10			mJ
E_{AS}	Single Pule Avalanche Energy ③		450			

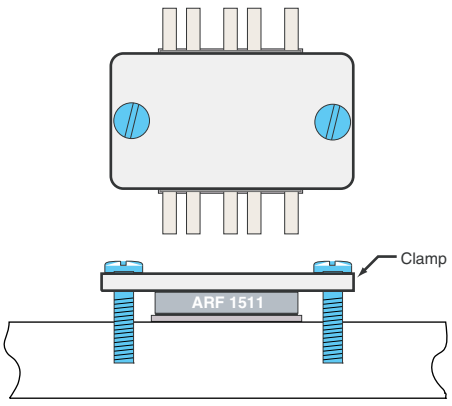
FUNCTIONAL CHARACTERISTICS

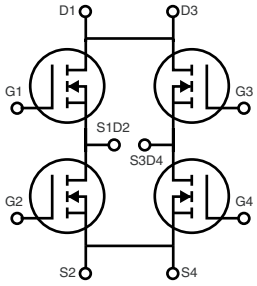
Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
G_{PS}	Common Source Amplifier Power Gain	f = 40.7 MHz V_{GS} = 0V V_{DD} = 380V P_{out} = 750W	13	15		dB
η	Drain Efficiency			75		%
Ψ	Electrical Ruggedness VSWR 6:1		No Degradation in Output Power			

① Pulse Test: Pulse width < 380 µS, Duty Cycle < 2%.
② Repetitive Rating: Pulse width limited by maximum junction temperature.
③ Starting T_j = +25°C, L = 2.25mH, R_G = 25Ω, Peak I_L = 20A

Microsemi reserves the right to change, without notice, the specifications and information contained herein.







HAZARDOUS MATERIAL WARNING

The ceramic portion of the device between leads and mounting surface is beryllium oxide, BeO. Beryllium oxide dust is toxic when inhaled. Care must be taken during handling and mounting to avoid damage to this area. These devices must never be thrown away with general industrial or domestic waste.

Thermal Considerations and Package Mounting:

The rated 1500W power dissipation is only available when the package mounting surface is at 25°C and the junction temperature is 175°C. The thermal resistance between junctions and case mounting surface is 0.10°C/W. When installed, an additional thermal impedance of 0.06°C/W between the package base and the mounting surface is smooth and flat. Thermal joint compound must be used to reduce the effects of small surface irregularities. The heatsink should incorporate a copper heat spreader to obtain best results.

The package is designed to be clamped to a heatsink. A clamped joint maintains the required mounting pressure while allowing for thermal expansion of both the device and the heat sink. A simple clamp, and two 6-32 (M3.5) screws can provide the minimum 125 lb. required mounting force. T=4-6 in-lb. Please refer to App Note 1802 "Mounting Instructions for Flangeless Packages."

ENTEGRECİ

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Elektronik komponent tedarikinde Entegreci

Entegreci, Eskişehir merkezli, Türkiye geneline satış yapan bir elektronik komponent mağazasıdır. Entegreler (IC), mikrodenetleyiciler, transistörler, diyotlar, pasif elemanlar, konnektörler, modüller ve geliştirme kartları tek adetten seri üretim adetlerine kadar satılır. Ürün sayfalarında güncel stok durumunu, fiyatı ve datasheet bağlantısını bulabilirsiniz.

Parça koduyla arama

Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

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Ürün kategorileri

Entegreden kapasitöre tüm elektronik komponent kategorileri.

Kategorilere göz atın

Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

Üreticileri görün

Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

Teklif isteyin

www.entegreci.com | **destek@entegreci.com** | **0850 305 90 34**

Entegreci is an online electronic components store based in Türkiye. Search by manufacturer part number to see stock, prices and datasheets for integrated circuits, microcontrollers, transistors, passive components and connectors, or request a quote for parts that are not listed.

Bu sayfa Entegreci tarafından eklenmiştir. Belgenin önceki sayfaları asıl yayıncısına aittir ve içeriği değiştirilmemiştir; en güncel sürüm için belgenin yayıncısına başvurun.