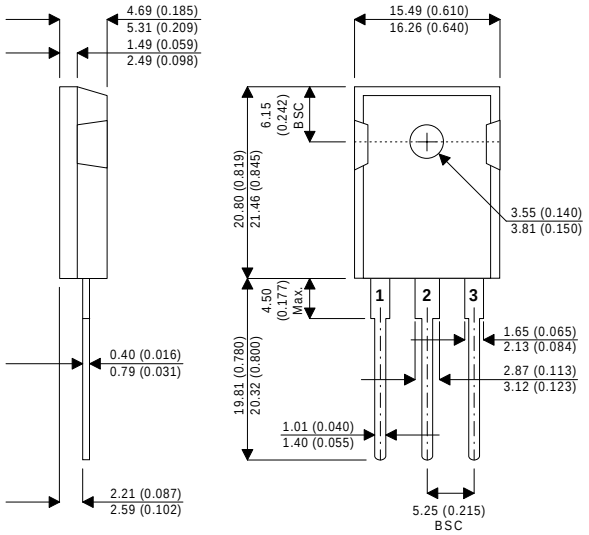
SRF442
SRF443

RF POWER MOSFET

N–CHANNEL
ENHANCEMENT MODE
200W – 100V – 13.56MHz

TO-247AD Package Outline.

Dimensions in mm (inches)



PIN NO	DEVICE	
	SRF442	SRF443
1	GATE	DRAIN
2	SOURCE	SOURCE
3	DRAIN	GATE

Dimensions in Millimeters and (Inches)

NOTE:
The SRF442 and SRF443 comprise a symmetric pair of RF Power Transistors and meet the same electrical specifications. The device pin-outs are the mirror image of each other to allow ease of use as a push-pull pair.

FEATURES

- **Low Cost Common Source RF Package.**
- **Very High Breakdown for Improved Ruggedness.**
- **Low Thermal Resistance.**
- **Nitride Passivated Die for Improved Reliability.**

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{DSS}	Drain – Source Voltage	300	V
V_{DGO}	Drain – Gate Voltage	300	
I_D	Continuous Drain Current	8	A
V_{GS}	Gate – Source Voltage	±30	V
P_D	Total Power Dissipation @ T_{case} = 25°C	167	W
T_J , T_{STG}	Operating and Storage Junction Temperature Range	-55 to 150	°C
T_L	Lead Temperature : 0.063” from Case for 10 Sec.	300	

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STATIC ELECTRICAL RATINGS (T_{case} = 25°C unless otherwise stated)

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain – Source Breakdown Voltage	V_{GS} = 0V , I_D = 250µA	300			V
I_{DSS}	Zero Gate Voltage Drain Current (V_{GS} = 0V)	V_{DS} = V_{DSS}			250	µA
		V_{DS} = 0.8V_{DSS} , T_C = 125°C			1000	
I_{GSS}	Gate – Source Leakage Current	V_{GS} = ±30V , V_{DS} = 0V			±100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS} = V_{GS} , I_D = 200mA	2		5	V
g_{fs}	Forward Transconductance	V_{DS} = 10V, I_D = 5.5A	3.5	4.5		S
$V_{DS(ON)}$	On State Drain Voltage[1]	$I_D^{(ON)}$ = 6.5A V_{GS} = 10V			6	V

DYNAMIC CHARACTERISTICS

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
C_{iss}	Input Capacitance	V_{GS} = 0V		730	900	pF
C_{oss}	Output Capacitance	V_{DS} = 100V		100	140	
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		33	50	

FUNCTIONAL CHARACTERISTICS

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
G_{ps}	Common source Amplifier Power Gain	f = 13.56MHz	20	22		dB
η	Drain Efficiency	I_{DQ} = 50mA V_{DD} = 100V		65		%
ψ	Electrical Ruggedness VSWR 20:1	P_{out} = 200W	No Degradation in Output Power			

THERMAL CHARACTERISTICS

	Characteristic	Min.	Typ.	Max.	Unit
$R_{\theta JC}$	Junction to Case			0.75	°C/W

1) Pulse Test: Pulse Width < 380µS , Duty Cycle < 2%

CAUTION — Electrostatic Sensitive Devices. Anti-Static Procedures Must Be Followed.

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