



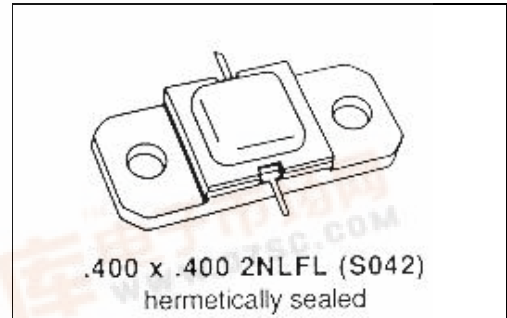
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**MS2209**

**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATION**

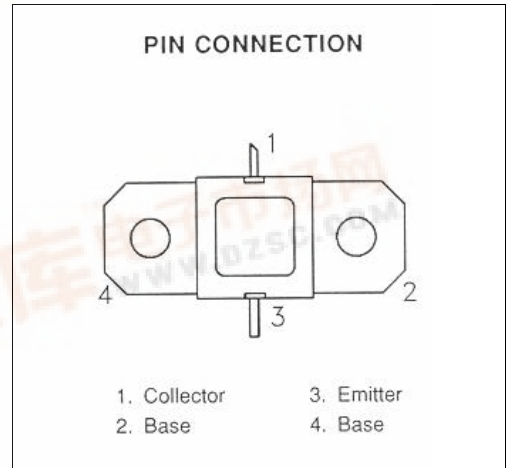
**Features**

- REFRACTORY/GOLD METALIZATION
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- EMITTER SITE BALLASTED



**DESCRIPTION:**

THE MS2209 AVIONICS POWER TRANSISTOR IS A BROADBAND, HIGH PEAK PULSE POWER DEVICE SPECIFICALLY DESIGNED FOR AVIONICS APPLICATIONS REQUIRING BROAD BANDWIDTH WITH MODERATED DUTY CYCLE AND PULSE WIDTH CONSTRAINTS SUCH AS GROUND/SHIP BASED DME/TACAN. THIS DEVICE IS ALSO CAPABLE OF SPECIALIZED APPLICATIONS INCLUDING JTIDS WITH REDUCED POWER UNDER PULSE FORMATS UTILIZING SHORT PULSE WIDTHS AND HIGH BURST OR OVERALL DUTY CYCLES.



**ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)**

Symbol	Parameter	Value	Unit
P <sub>DISS</sub>	Power Dissipation* (T <sub>c</sub> ≤ 100°C)	220	W
I <sub>c</sub>	Device Current *	7.0	A
V <sub>CC</sub>	Collector Supply Voltage*	50	V
T <sub>J</sub>	Junction Temperature	250	°C
T <sub>STG</sub>	Storage Temperature	-65 to +200	°C

**Thermal Data**

R <sub>TH(J-C)</sub>	Junction - Case Thermal Resistance	0.80	°C/W
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\*Applies only to rated RF amplifier operation



**ELECTRICAL SPECIFICATIONS (Tcase = 25°C)**

**STATIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
Bvebo	I <sub>E</sub> = 10 mA	I <sub>C</sub> = 0 mA		3.0	---	---	V
Bvcbo	I <sub>C</sub> = 40 mA	I <sub>E</sub> = 0 mA		65	---	---	V
Bvcer	I <sub>C</sub> = 40 mA	R <sub>BE</sub> = 10Ω		65	---	---	V
Icbo	V <sub>CB</sub> = 50V			---	---	12	mA
HFE	V <sub>CE</sub> = 5.0 V	I <sub>C</sub> = 2 A		20	---	120	B

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>out</sub>	f=960-1215 MHz	P <sub>in</sub> = 13W	V <sub>CC</sub> =50V	90	100	---	W
η <sub>c</sub>	f=960-1215 MHz	P <sub>in</sub> = 13W	V <sub>CC</sub> =50V	38	44	---	%
G <sub>p</sub>	f=960-1215 MHz	P <sub>in</sub> = 13W	V <sub>CC</sub> =50V	8.4	---	---	dB
Conditions	Pulse width=10μsec, Duty Cycle= 10%						

**PACKAGE MECHANICAL DATA**

