ADVANCED POWER TECHNOLOGY RF®

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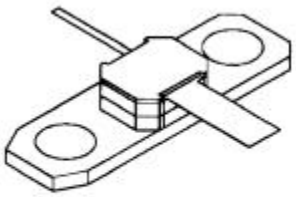
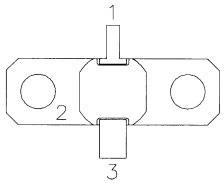
MS2205

RF AND MICROWAVE TRANSISTORS AVIONICS APPLICATIONS



.250 SQ. 2LFL (M105)
hermetically sealed



Features

- DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS
- 6.0 W (typ.) IFF 1030–1090 MHz
- 5.0 W (min.) DME 1025–1150 MHz
- 4.0 W (typ.) TACAN 960–1215 MHz
- GAIN 9 dB (typ.)
- VSWR ∞:1 AT RATED CONDITIONS
- LOW THERMAL RESISTANCE
- EMITTER BALLASTED
- INPUT MATCHED COMMON-BASE CONFIGURATION

DESCRIPTION:

The MS2205 is a gold metallized, silicon NPN power transistor designed for pulsed applications with low duty cycles, such as IFF, DME, and TACAN. It can withstand infinite VSWR under rated conditions. The MS2205 is housed in the .250" input-matched stripline package, resulting in improved broadband performance and low thermal resistance.

ABSOLUTE MAXIMUM RATINGS (T_{CASE} = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	45	V
V_{CES}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current*	1.0	A
P_{DISS}	Total Power Dissipation* (T_C = °C)	21.9	W
T_j	Junction Temperature	+200	°C
T_{stg}	Storage Temperature	-65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	8.0	°C/W

*Applies only to rated RF amplifier operation

ELECTRICAL SPECIFICATIONS (T_{CASE} = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 1 mA	I_E = 0	45	---	---	V
BV_{CEO}	I_C= 5 mA	I_B = 0	45	---	---	V
BV_{CES}	I_C = 5 mA	V_{BE} = 0	45	---	---	V
BV_{EBO}	I_E = 1 mA	I_C =0	3.5	---	---	V
I_{CES}	V_{CE} = 28 V	I_E = 0 mA	---	---	1	mA
h_{FE}	V_{CE} = 5 V	I_C = 100 mA	10	---	200	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 1025–1150 MHz	P_{IN} = .55W	V_{CE} = 28 V	5			W
G_P	f = 1025–1150 MHz	P_{IN} = .55W	V_{CE} = 28 V	9.5			DB

Note: **Pulse width = 10 µSec, Duty Cycle = 1%**
This device is suitable for use under other pulse widths/duty cycle conditions.
Please contact the factory for specific applications assistance.

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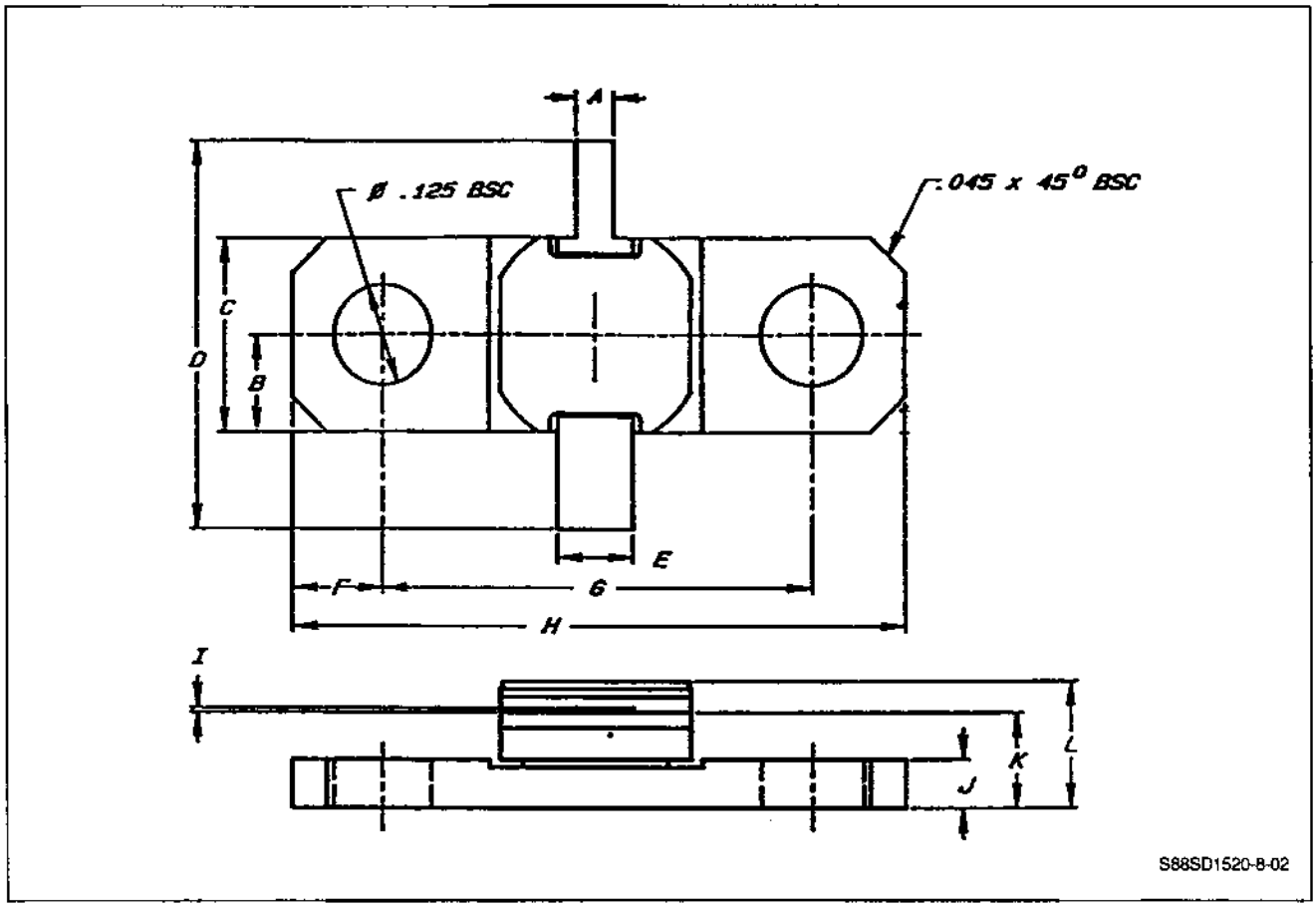
PACKAGE MECHANICAL DATA



	Minimum Inches/mm	Maximum Inches/mm
A	.045/1.14	.055/1.40
B	.125/3.18 BSC	
C	.245/6.22	.255/6.48
D	1.235/31.37	
E	.095/2.41	.105/2.67
F	.119/3.02 BSC	

	Minimum Inches/mm	Maximum Inches/mm
G	.557/14.15	.567/14.40
H	.795/20.19	.805/20.45
I	.002/0.05	.006/0.15
J	.057/1.45	.067/1.70
K	.112/2.84	.132/3.35
L		.175/4.45