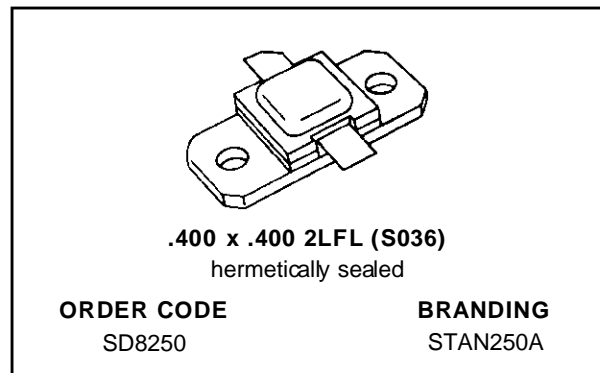


## RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 5:1 VSWR CAPABILITY @ 1.75 dB RF OVERDRIVE
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P<sub>OUT</sub> = 250 W MIN. WITH 8.0 dB GAIN



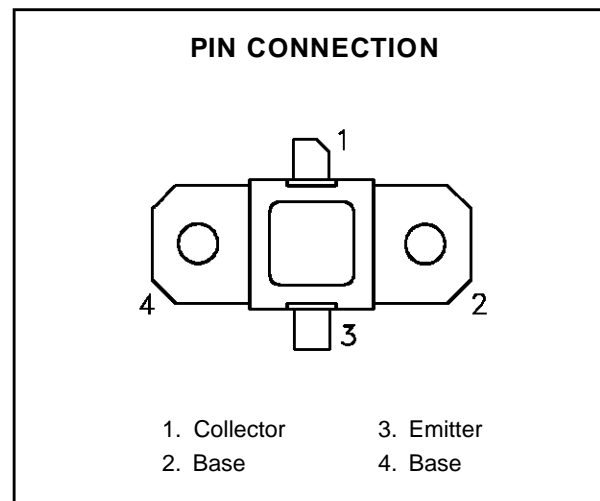
### DESCRIPTION

The SD8250 is a high power Class C transistor specifically designed for TACAN/DME pulsed output and driver applications.

This device is designed for operation under moderate pulse width and duty cycle pulse conditions and is capable of withstanding 5:1 output VSWR at rated RF overdrive.

Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The SD8250 is supplied in the AMPAC™ Hermetic Metal/Ceramic package with internal Input/Output matching structures.



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

Symbol	Parameter	Value	Unit
P <sub>DISS</sub>	Power Dissipation* (T <sub>C</sub> ≤ 90°C)	575	W
I <sub>C</sub>	Device Current*	20	A
V <sub>CC</sub>	Collector-Supply Voltage*	55	V
T <sub>J</sub>	Junction Temperature (Pulsed RF Operation)	250	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +200	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance <sup>(1)</sup>	0.28	°C/W
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\*Applies only to rated RF amplifier operation

(1) Infra-Red Scan of Hot Spot Junction Temperature at Rated RF Operating Conditions

# SD8250

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

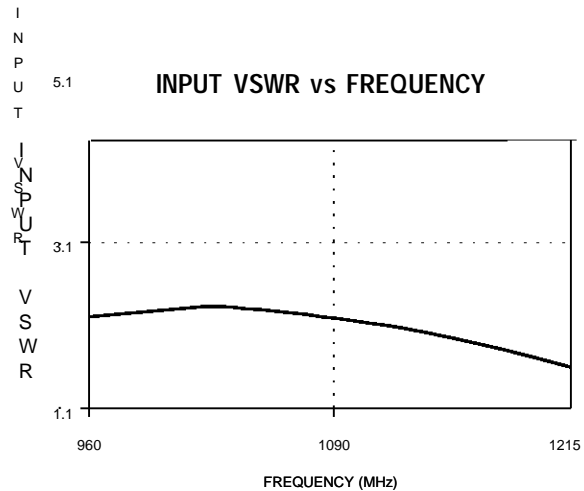
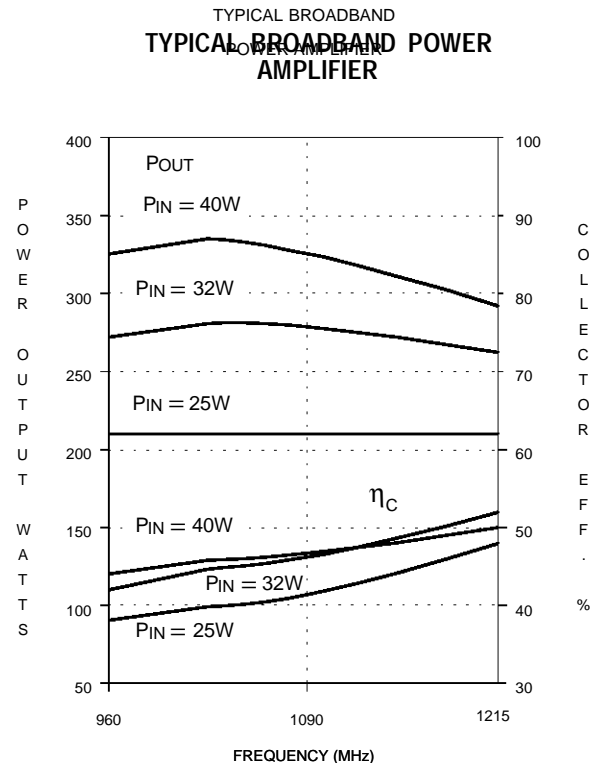
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 35mA	I <sub>E</sub> = 0mA	65	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 15mA	I <sub>C</sub> = 0mA	4.0	—	—	V
BV <sub>CES</sub>	I <sub>C</sub> = 25mA	I <sub>B</sub> = 0mA	60	—	—	V
I <sub>CES</sub>	V <sub>BE</sub> = 0V	V <sub>CE</sub> = 50V	—	—	20	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 1A	10	—	—	—

### DYNAMIC

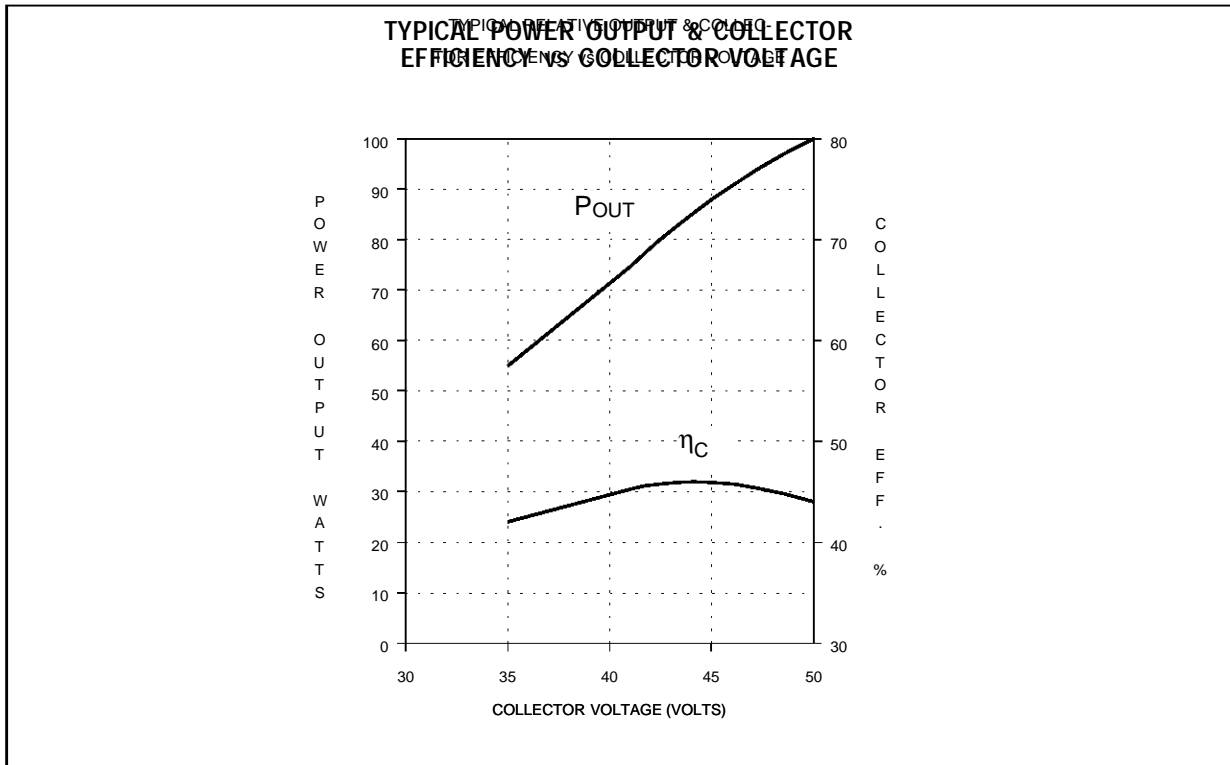
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 960 — 1215 MHz	P <sub>IN</sub> = 40 W	V <sub>CC</sub> = 50 V	250	295	—	W
η <sub>C</sub>	f = 960 — 1215 MHz	P <sub>IN</sub> = 40 W	V <sub>CC</sub> = 50 V	38	44	—	%
P <sub>G</sub>	f = 960 — 1215 MHz	P <sub>IN</sub> = 40 W	V <sub>CC</sub> = 50 V	8.0	8.7	—	dB

Note: Pulse Width = 20μSec  
 Duty Cycle = 5%  
 T<sub>C</sub> = 25°C

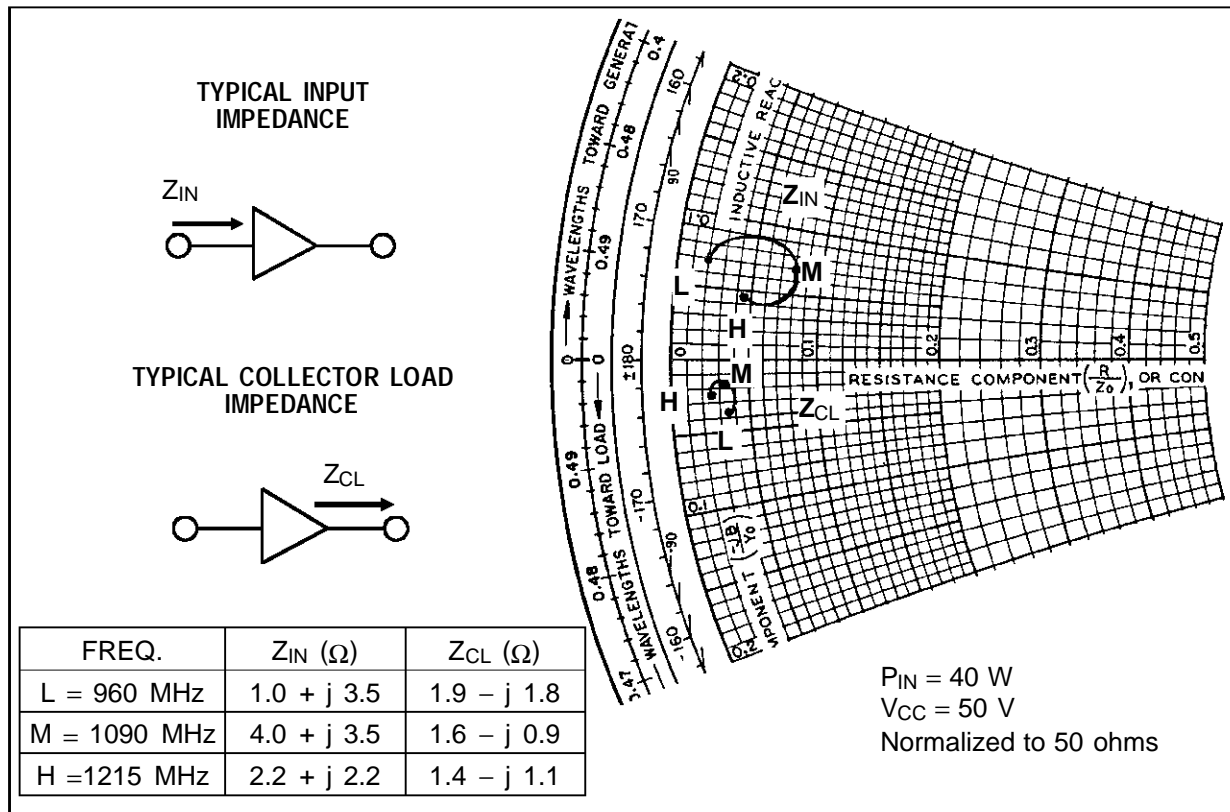
## TYPICAL PERFORMANCE



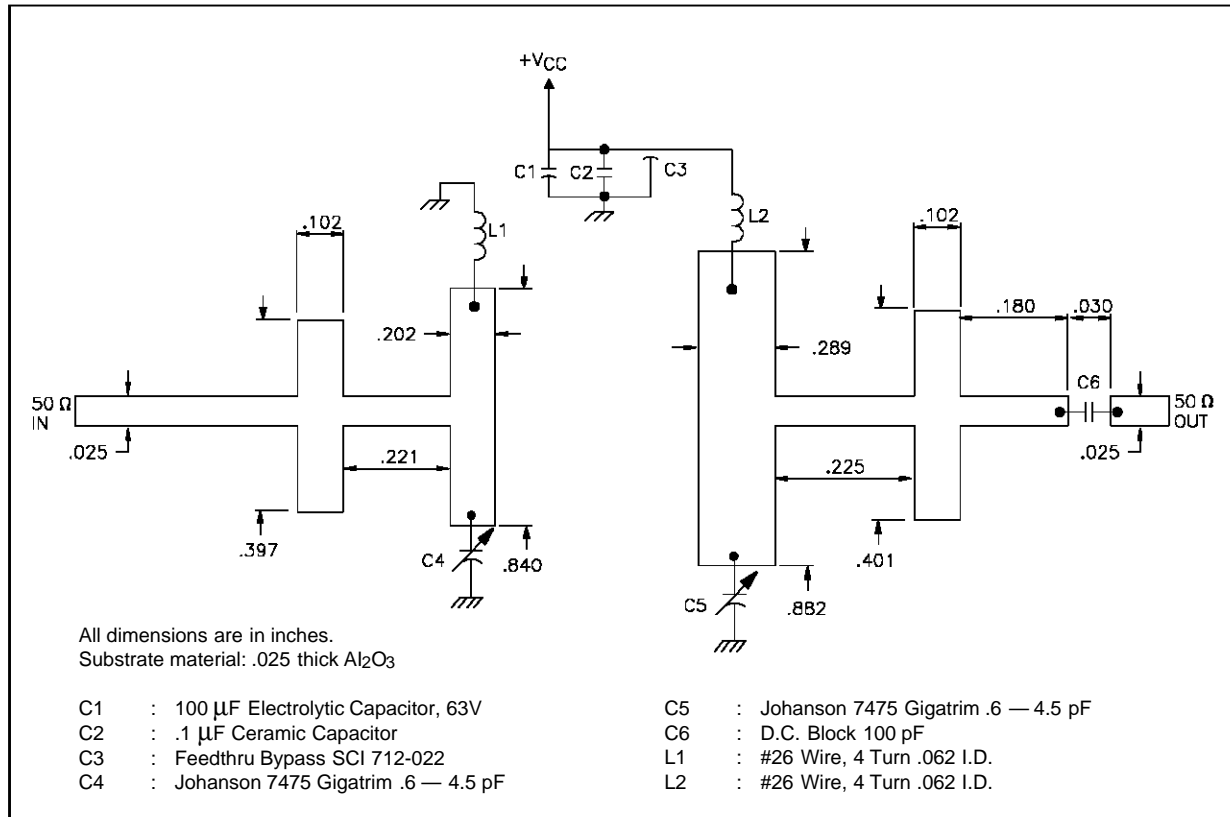
TYPICAL PERFORMANCE (cont'd)



IMPEDANCE DATA

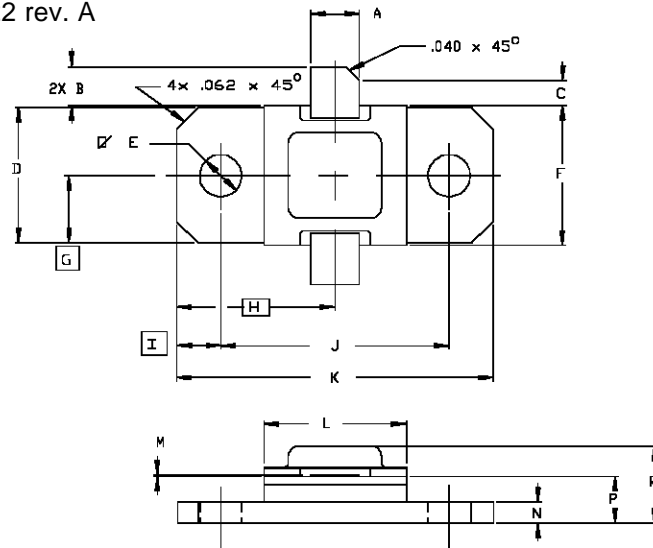


TEST CIRCUIT



## PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0222 rev. A



SGS-THOMSON MICROELECTRONICS		CONT'D			
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.135/3,43	.145/3,68	K	.890/22,61	.910/23,11
B	.100/2,54	.120/3,05	L	.395/10,03	.415/10,54
C	.050/1,27		M	.003/0,08	.006/0,15
D	.376/9,55	.396/10,06	N	.052/1,32	.072/1,83
E	.110/2,79	.130/3,30	P	.118/3,00	.131/3,33
F	.395/10,03	.407/10,34	R		.230/5,84
G		.193/4,90			
H		.450/11,43			
I		.125/3,18			
J	.640/16,26	.660/16,76			

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