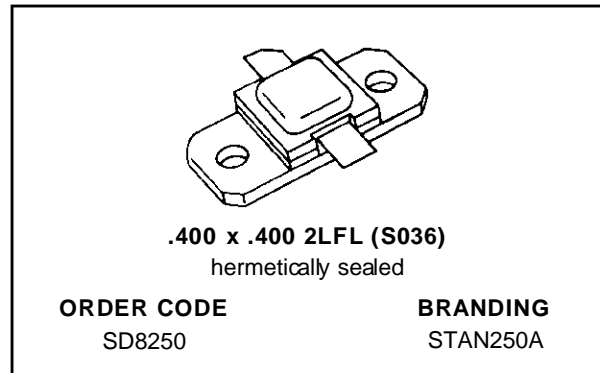


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- 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_{OUT} = 250 W MIN. WITH 8.0 dB GAIN



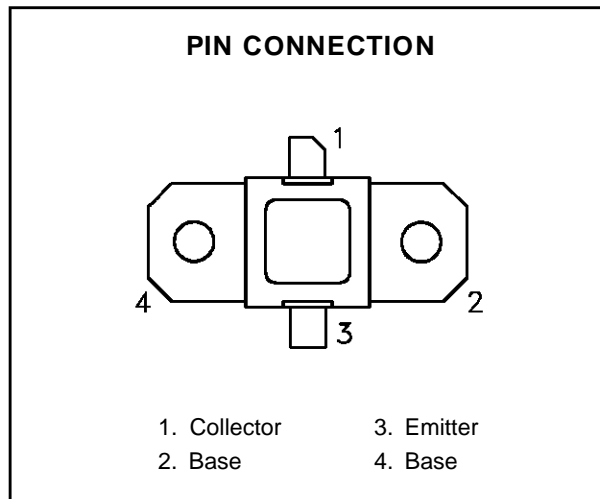
DESCRIPTION

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_{case} = 25°C)

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

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance ⁽¹⁾	0.28	°C/W
----------------------	---	------	------

*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_{case} = 25°C)

STATIC

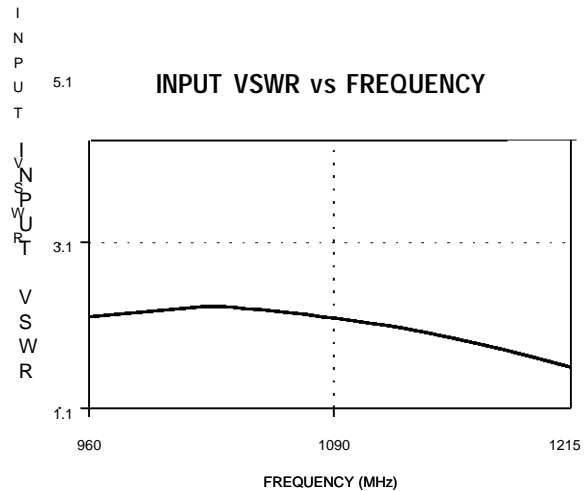
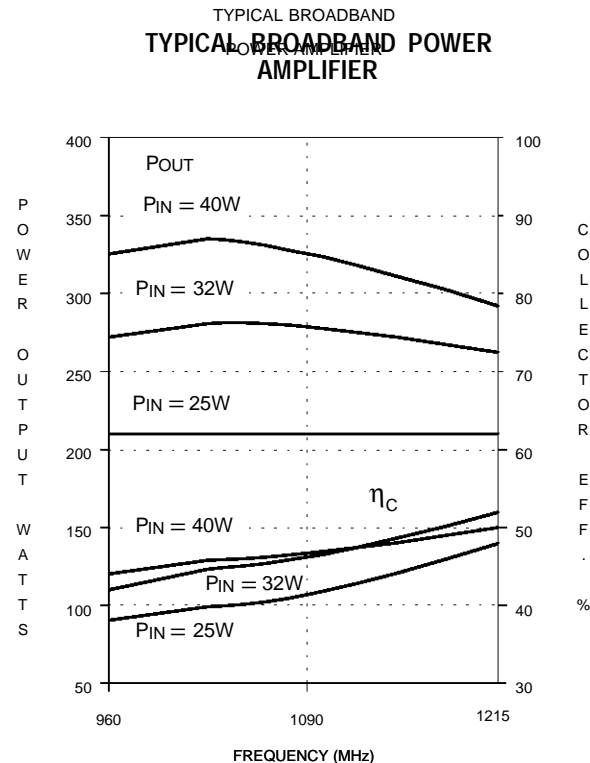
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 35mA	I _E = 0mA	65	—	—	V
BV _{EBO}	I _E = 15mA	I _C = 0mA	4.0	—	—	V
BV _{CES}	I _C = 25mA	I _B = 0mA	60	—	—	V
I _{CES}	V _{BE} = 0V	V _{CE} = 50V	—	—	20	mA
h _{FE}	V _{CE} = 5V	I _C = 1A	10	—	—	—

DYNAMIC

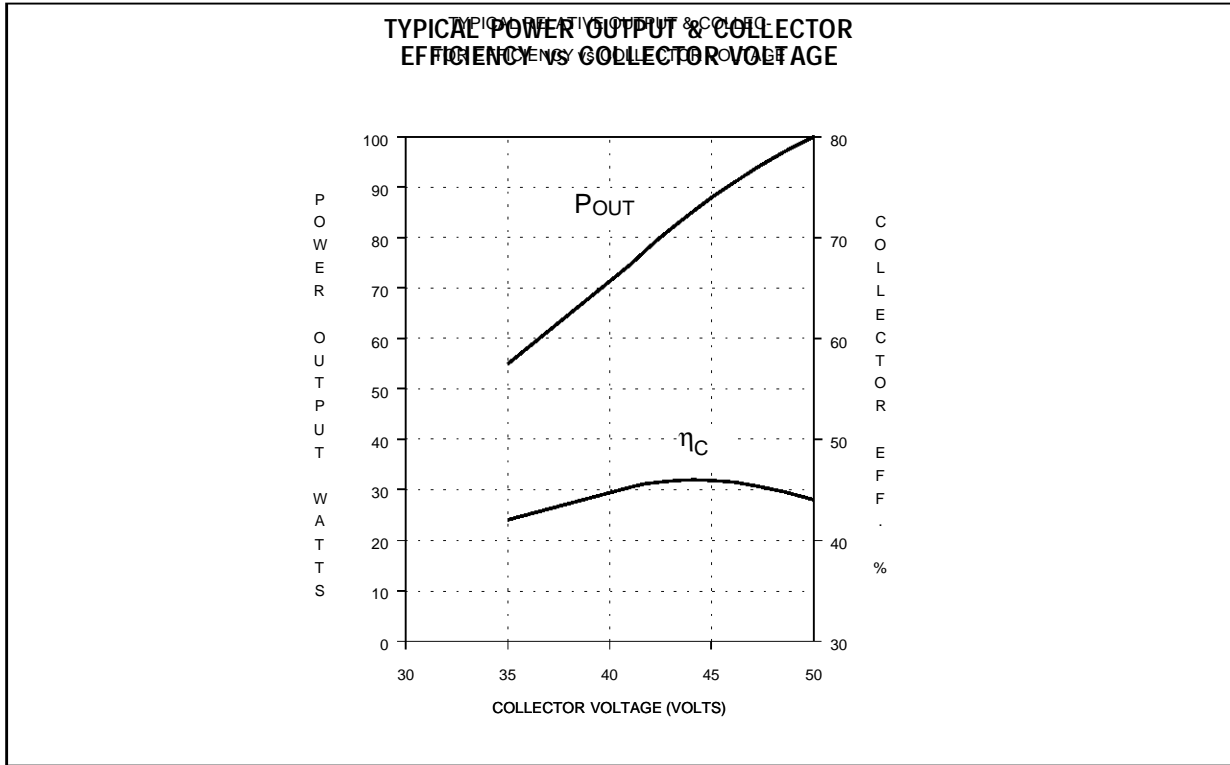
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 960 — 1215 MHz	P _{IN} = 40 W	V _{CC} = 50 V	250	295	—	W
η _C	f = 960 — 1215 MHz	P _{IN} = 40 W	V _{CC} = 50 V	38	44	—	%
P _G	f = 960 — 1215 MHz	P _{IN} = 40 W	V _{CC} = 50 V	8.0	8.7	—	dB

Note: Pulse Width = 20μSec
 Duty Cycle = 5%
 T_C = 25°C

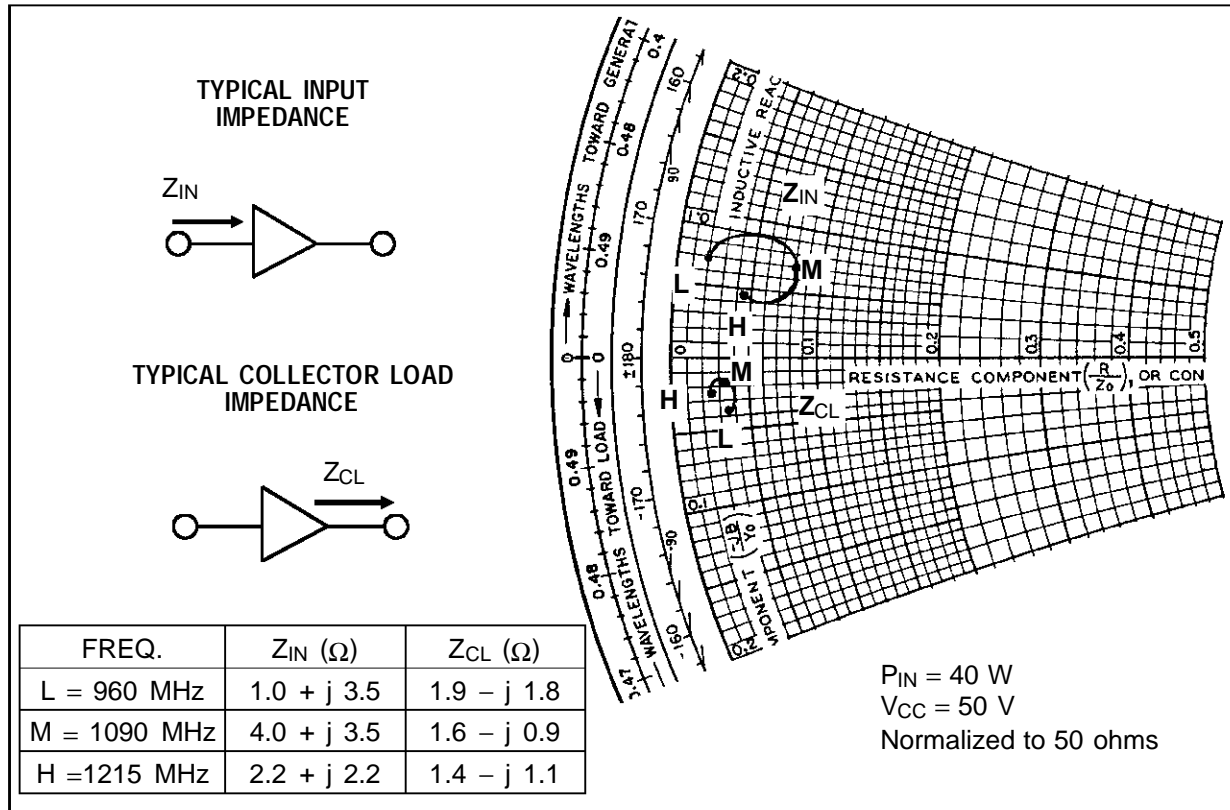
TYPICAL PERFORMANCE



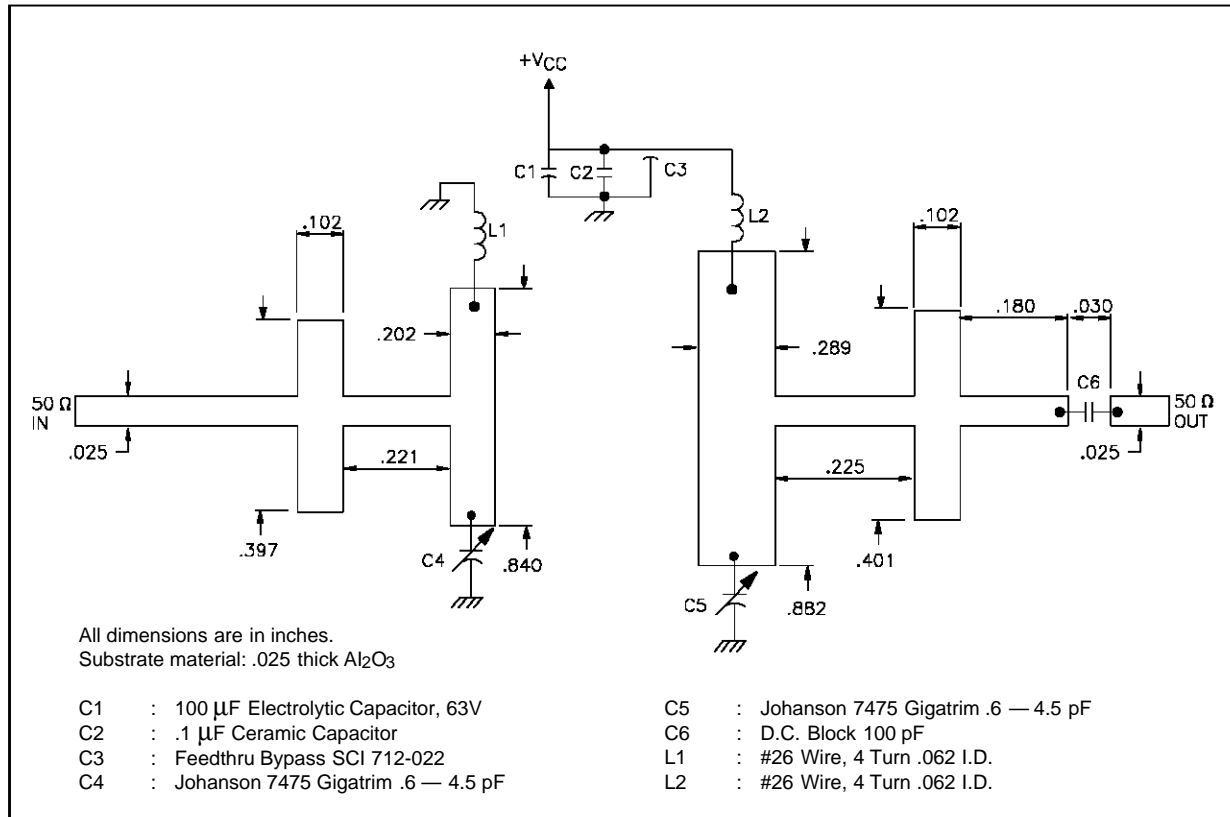
TYPICAL PERFORMANCE (cont'd)



IMPEDANCE DATA

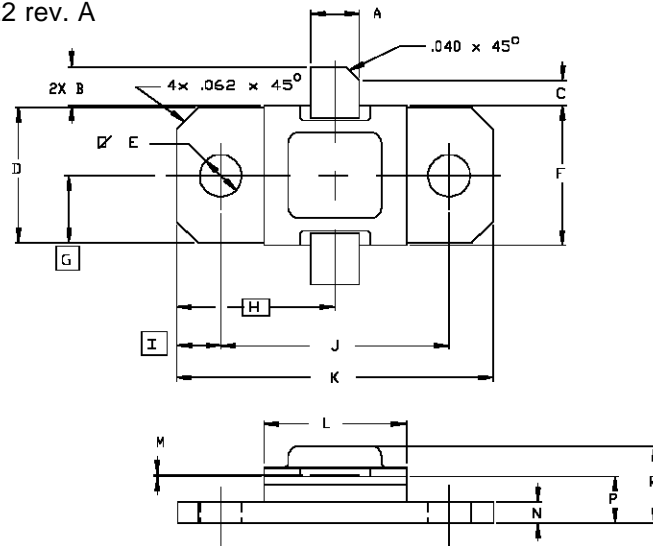


TEST CIRCUIT



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			

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

©1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.