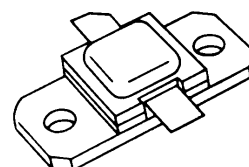


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- 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



.400 x .400 2LFL (S036)
hermetically sealed

ORDER CODE
SD8250

BRANDING
STAN250A

DESCRIPTION

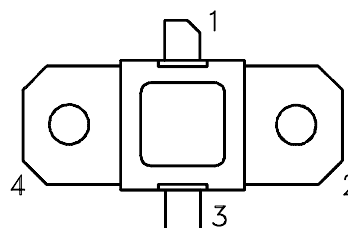
The SD8250 is a high power Class C transistor specifically designed for TACAN/DME pulsed output and driver applications.

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.

PIN CONNECTION



1. Collector 3. Emitter
2. Base 4. Base

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 90^{\circ}\text{C}$)	575	W
I_C	Device Current*	20	A
V_{CC}	Collector-Supply Voltage*	55	V
T_J	Junction Temperature (Pulsed RF Operation)	250	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +200	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance ⁽¹⁾	0.28	$^{\circ}\text{C/W}$
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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

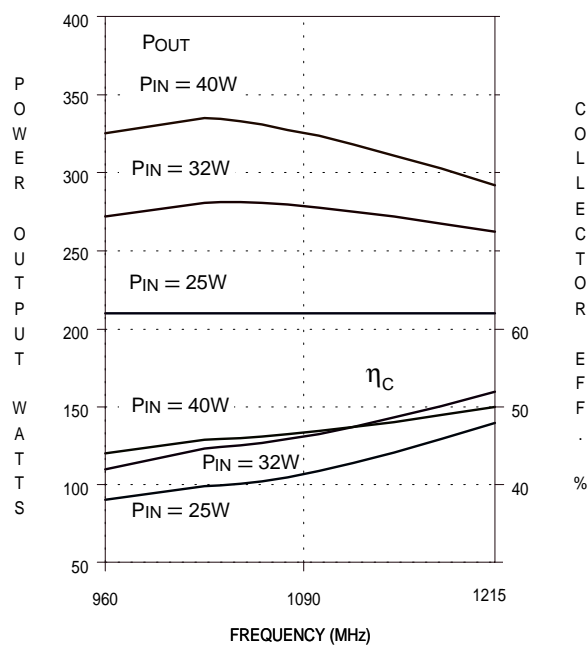
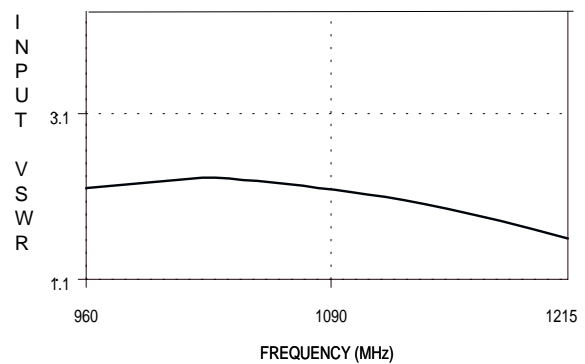
ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)**STATIC**

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 35\text{mA}$ $I_{\text{E}} = 0\text{mA}$	65	—	—	V
BV_{EBO}	$I_{\text{E}} = 15\text{mA}$ $I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
BV_{CES}	$I_{\text{C}} = 25\text{mA}$ $I_{\text{B}} = 0\text{mA}$	60	—	—	V
I_{CES}	$V_{\text{BE}} = 0\text{V}$ $V_{\text{CE}} = 50\text{V}$	—	—	20	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$ $I_{\text{C}} = 1\text{A}$	10	—	—	—

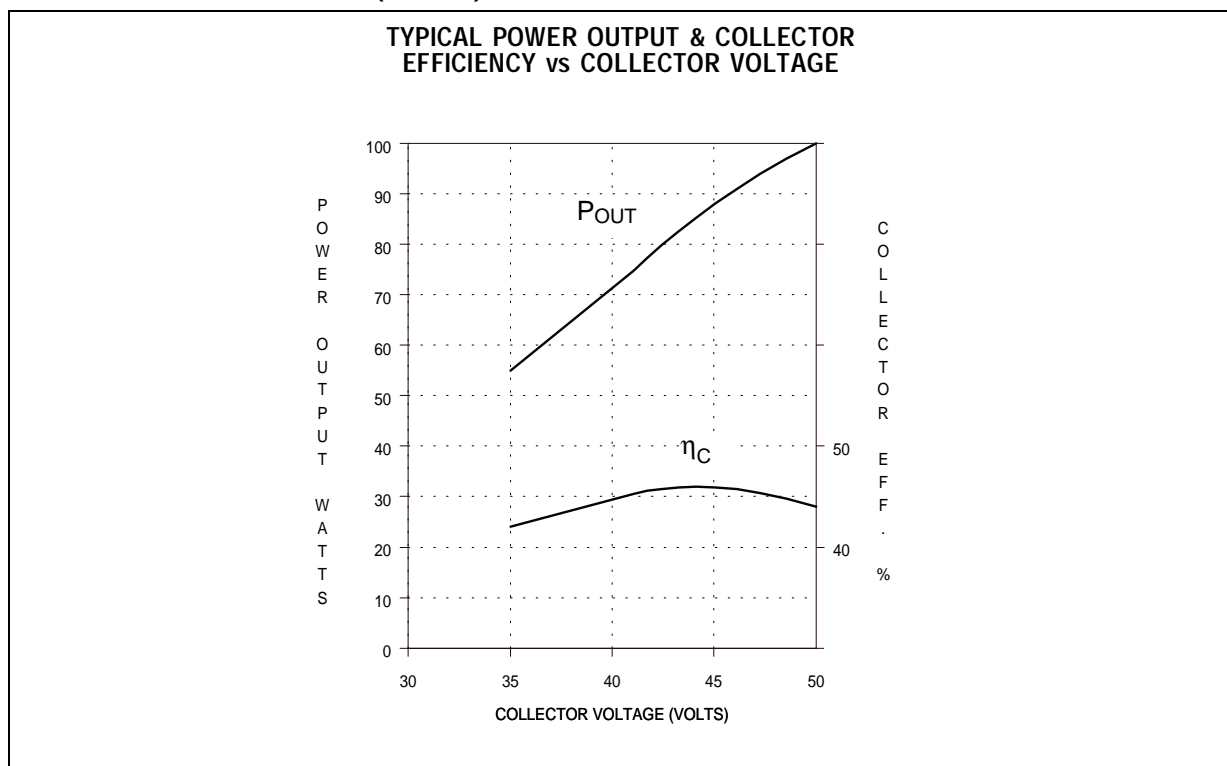
DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 960 - 1215\text{ MHz}$ $P_{\text{IN}} = 40\text{ W}$ $V_{\text{CC}} = 50\text{ V}$	250	295	—	W
η_{C}	$f = 960 - 1215\text{ MHz}$ $P_{\text{IN}} = 40\text{ W}$ $V_{\text{CC}} = 50\text{ V}$	38	44	—	%
P_{G}	$f = 960 - 1215\text{ MHz}$ $P_{\text{IN}} = 40\text{ W}$ $V_{\text{CC}} = 50\text{ V}$	8.0	8.7	—	dB

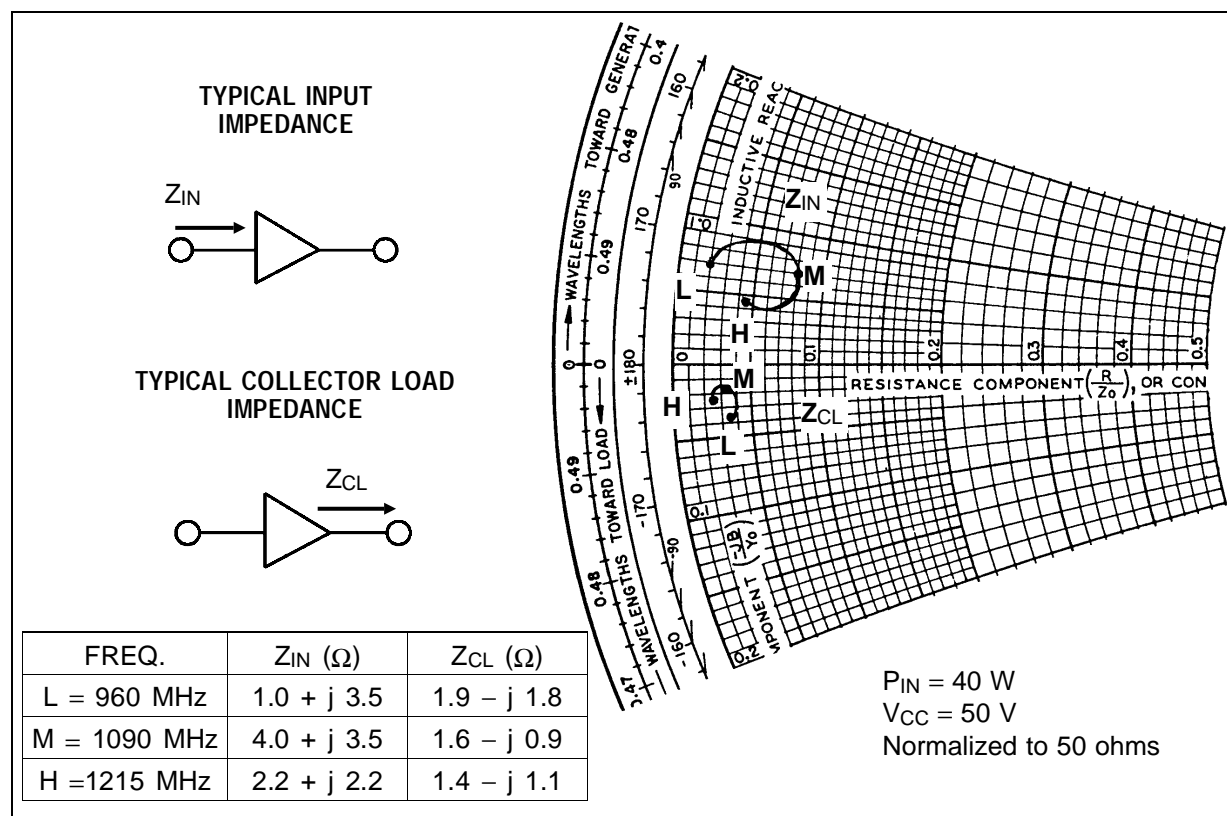
Note: Pulse Width = $20\mu\text{Sec}$
Duty Cycle = 5%
 T_{C} = 25°C

TYPICAL PERFORMANCE**TYPICAL BROADBAND POWER AMPLIFIER****INPUT VSWR vs FREQUENCY**

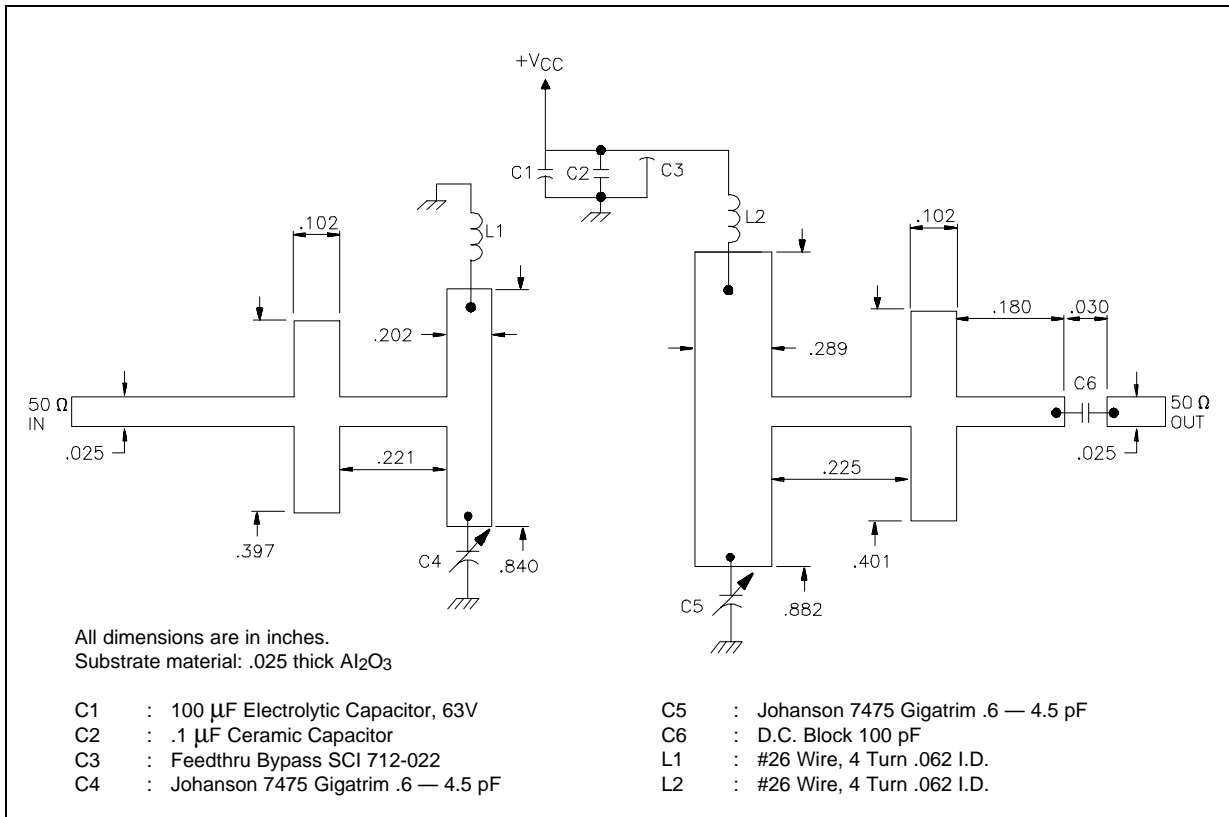
TYPICAL PERFORMANCE (cont'd)



IMPEDANCE DATA

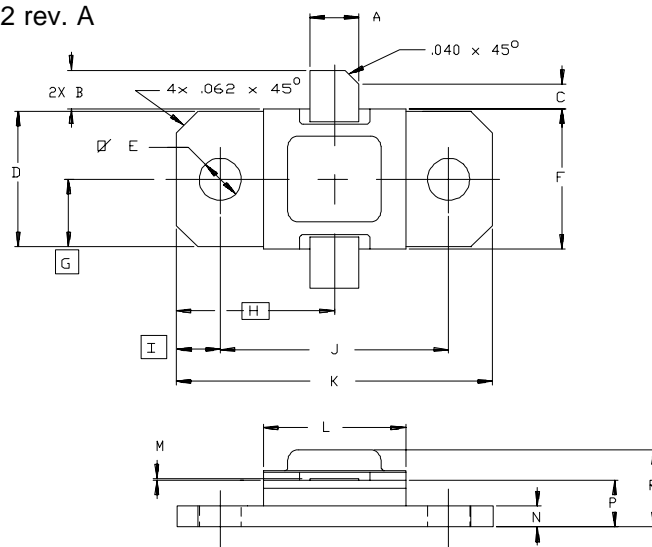


TEST CIRCUIT



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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