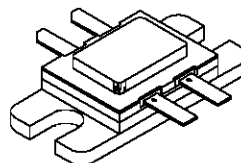


RF & MICROWAVE TRANSISTORS UHF PULSED APPLICATIONS

- 500 WATTS @ 250 μ Sec PULSE WIDTH, 10% DUTY CYCLE
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTING AND LOW RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- INFINITE VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS
- INPUT MATCHED, COMMON BASE CONFIGURATION
- BALANCED CONFIGURATION



.400 x .500 4LFL (M102)
hermetically sealed

ORDER CODE

SD1565

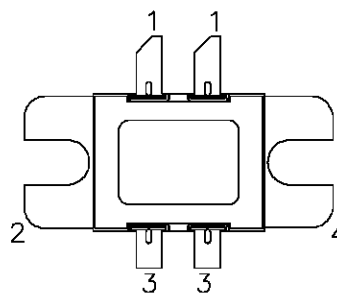
BRANDING

SD1565

DESCRIPTION

The SD1565 is a hermetically sealed, gold metallized silicon NPN pulse power transistor mounted in a common base balanced configuration. The SD1565 is designed for applications requiring high peak power and low duty cycles within the frequency range of 400 - 500 MHz.

PIN CONNECTION



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

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CES}	Collector-Emitter Voltage	65	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	43.2	A
P_{DISS}	Power Dissipation	1167	W
T_J	Junction Temperature	+200	$^{\circ}C$
T_{STG}	Storage Temperature	- 65 to +200	$^{\circ}C$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.15	$^{\circ}C/W$
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ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)**STATIC**

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 50 \text{ mA}$ $I_{\text{E}} = 0 \text{ mA}$	65	—	—	V
BV_{CES}	$I_{\text{C}} = 50 \text{ mA}$ $V_{\text{BE}} = 0 \text{ V}$	65	—	—	V
BV_{EBO}	$I_{\text{E}} = 10 \text{ mA}$ $I_{\text{C}} = 0 \text{ mA}$	3.5	—	—	V
I_{CES}	$V_{\text{CE}} = 30 \text{ V}$ $I_{\text{E}} = 0 \text{ mA}$	—	—	15	mA
h_{FE}	$V_{\text{CE}} = 5 \text{ V}$ $I_{\text{C}} = 5 \text{ A}$	20	—	200	—

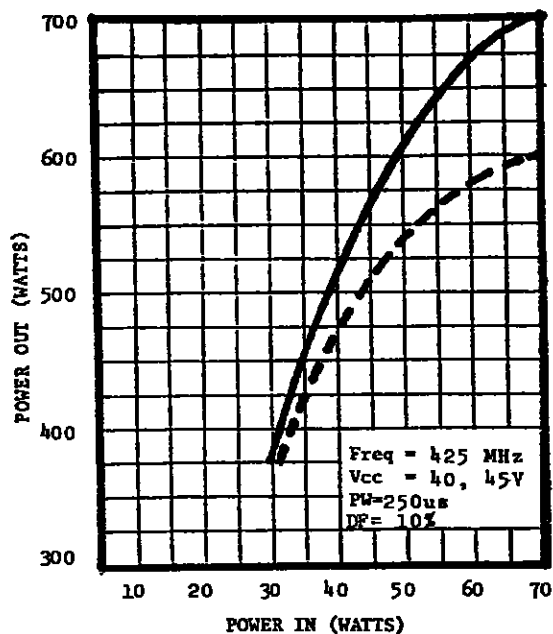
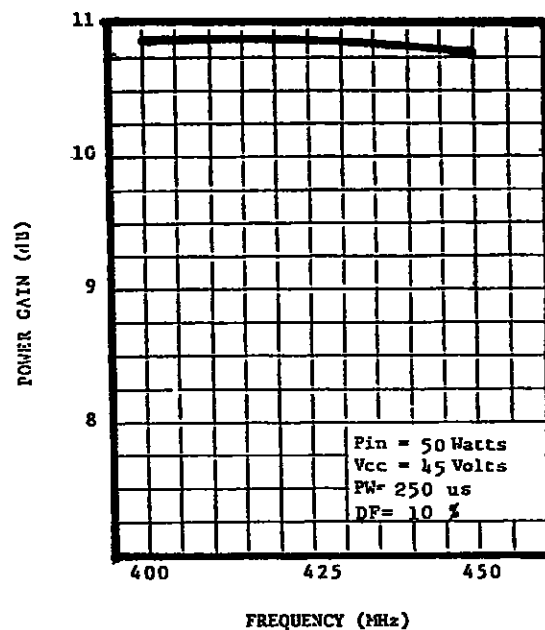
DYNAMIC

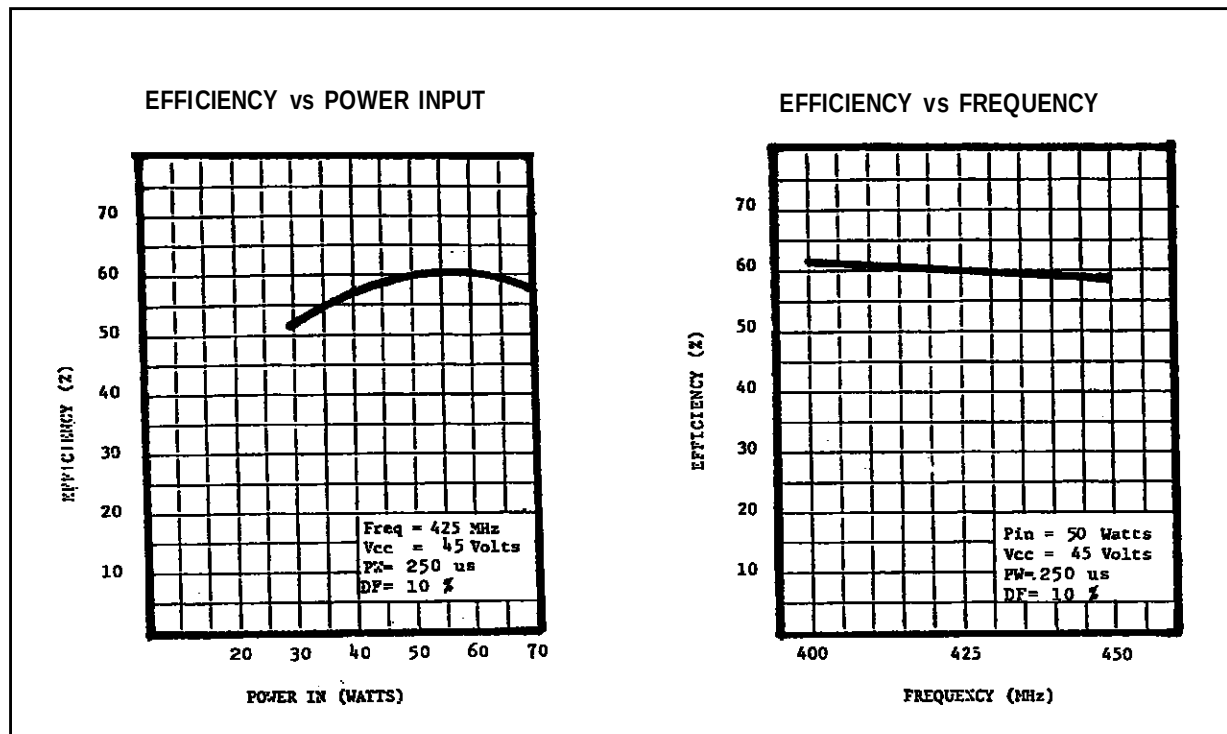
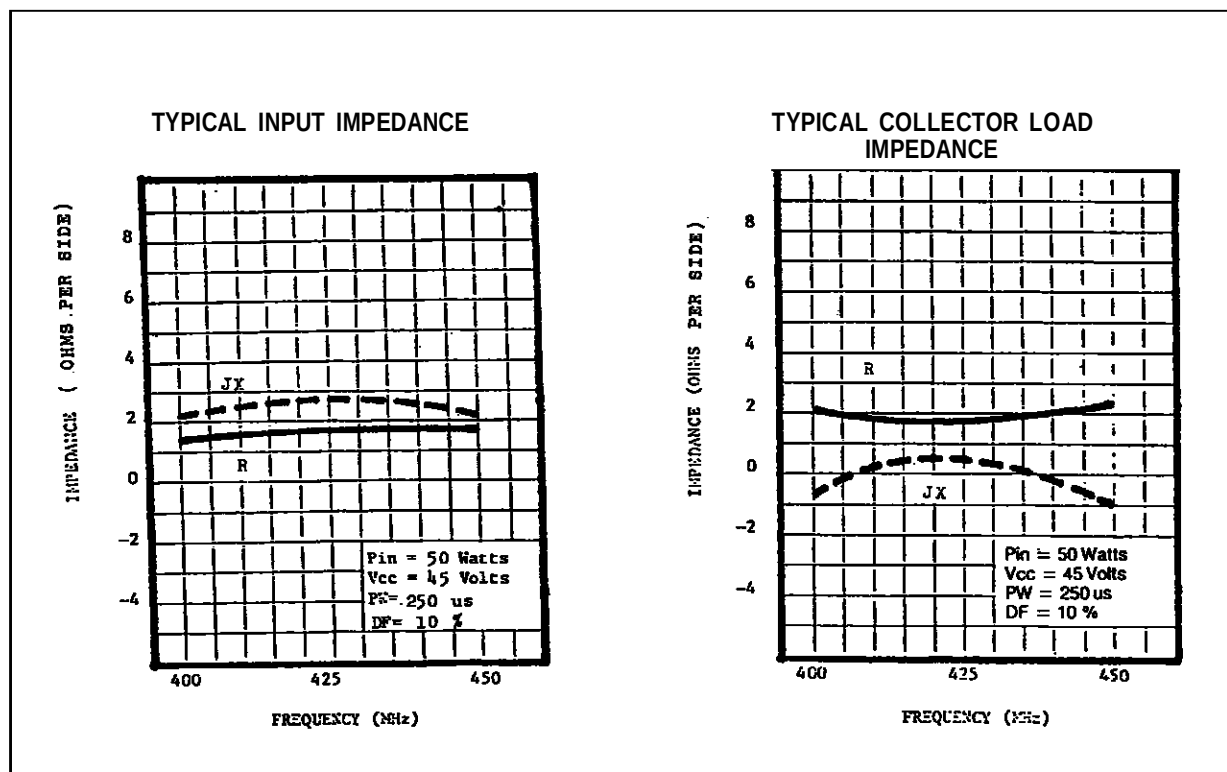
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 425 \text{ MHz}$ $P_{\text{IN}} = 54 \text{ W}$ $V_{\text{CE}} = 40 \text{ V}$	500	—	—	W
P_{G}	$f = 425 \text{ MHz}$ $P_{\text{IN}} = 54 \text{ W}$ $V_{\text{CE}} = 40 \text{ V}$	9.7	—	—	dB
η_{c}	$f = 425 \text{ MHz}$ $P_{\text{IN}} = 54 \text{ W}$ $V_{\text{CE}} = 40 \text{ V}$	50	—	—	%

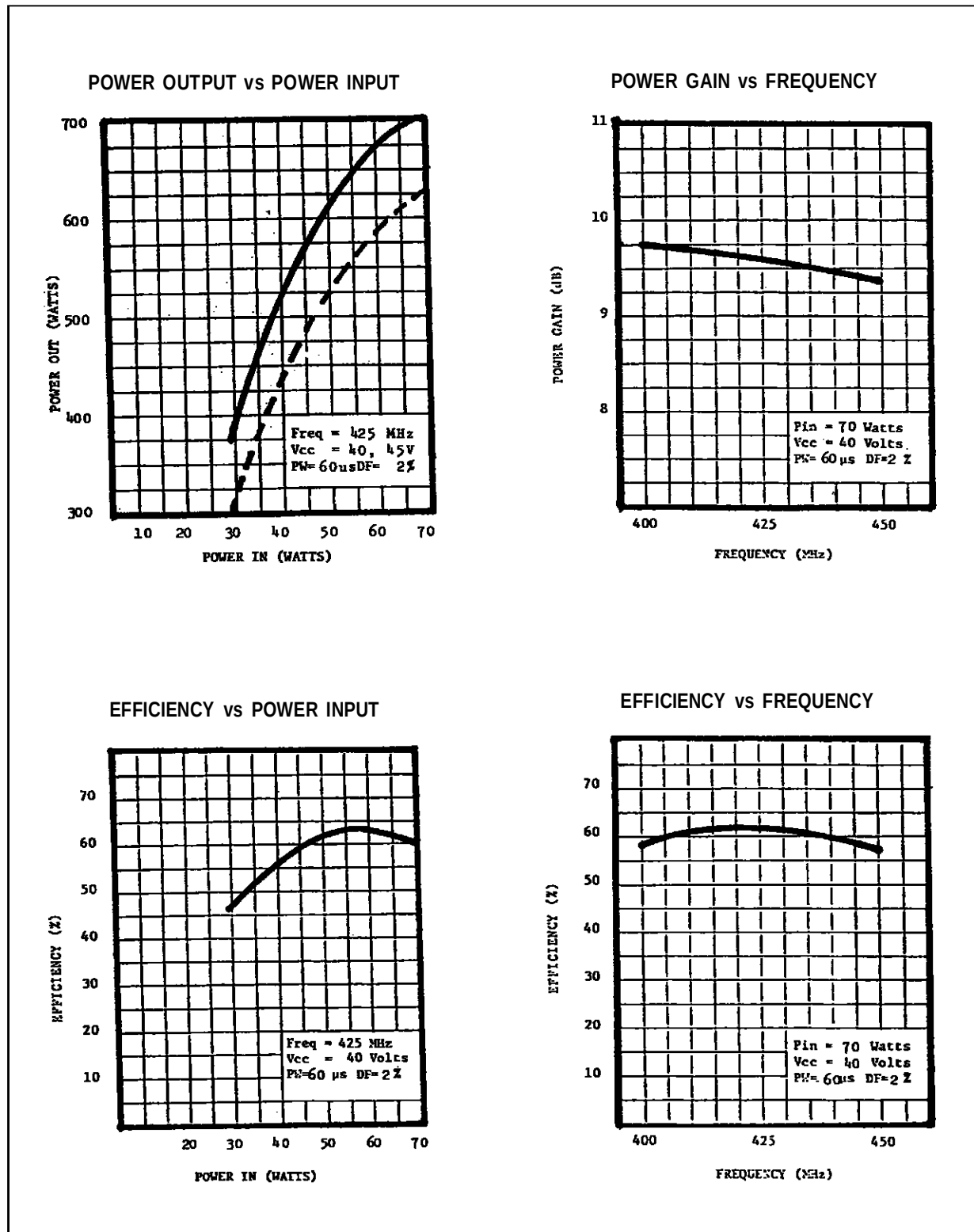
Note: Pulse Width = $250\mu\text{Sec}$, Duty Cycle = 10%

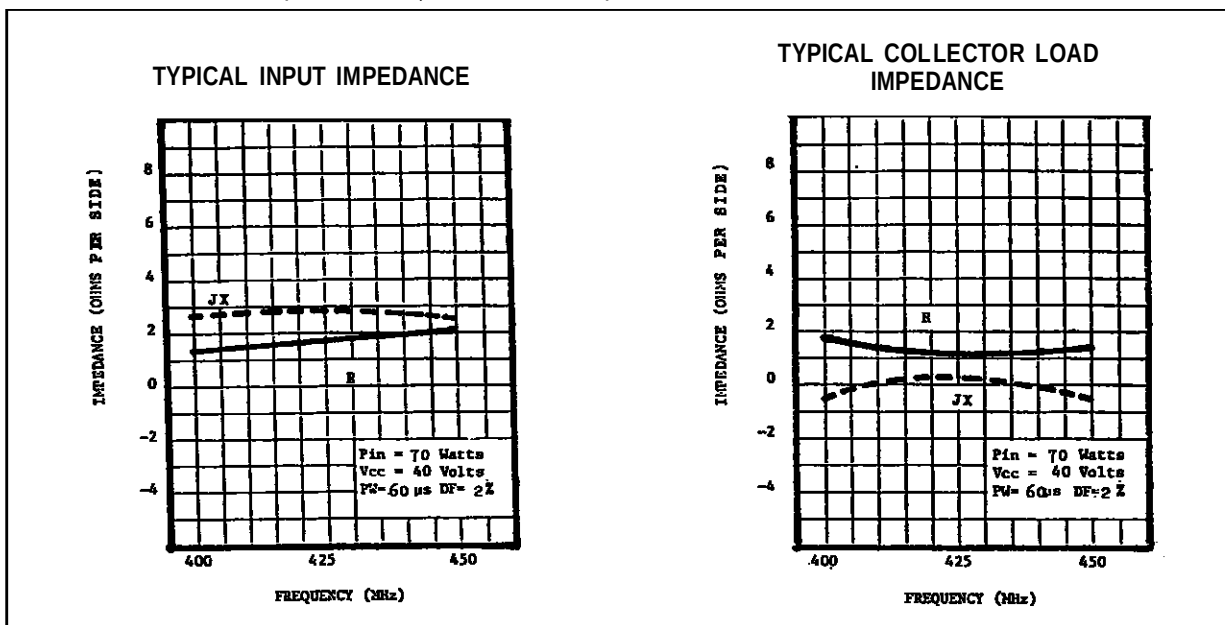
This device is suitable for use under other pulse width/duty cycle conditions.

Please contact the factory for specific applications assistance.

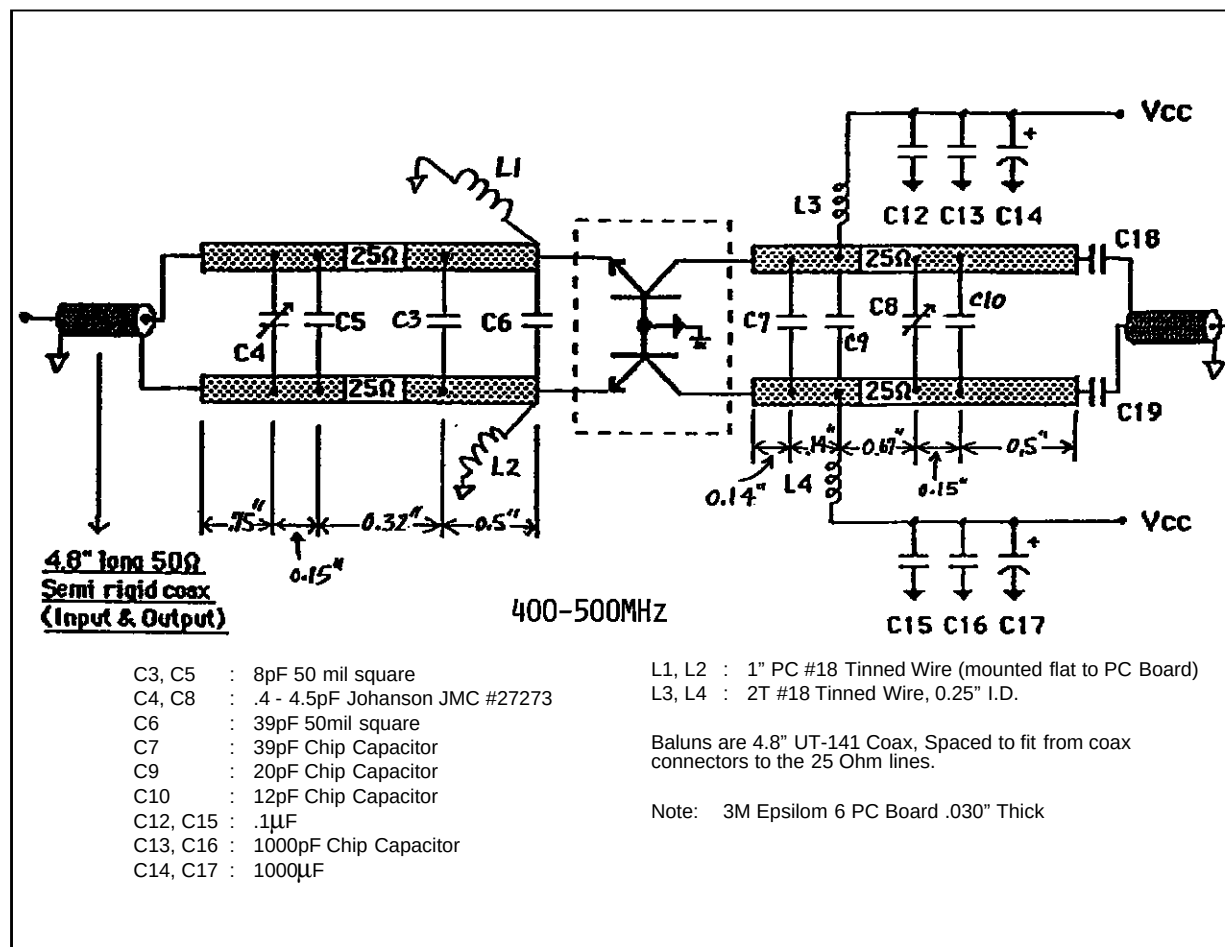
TYPICAL PERFORMANCE (P.W. = $250\mu\text{S}$, D.C. = 10%)**POWER OUTPUT vs POWER INPUT****POWER GAIN vs FREQUENCY**

TYPICAL PERFORMANCE (P.W. = 250 μ S, D.C. = 10%)IMPEDANCE DATA (P.W. = 250 μ S, D.C. = 10%)

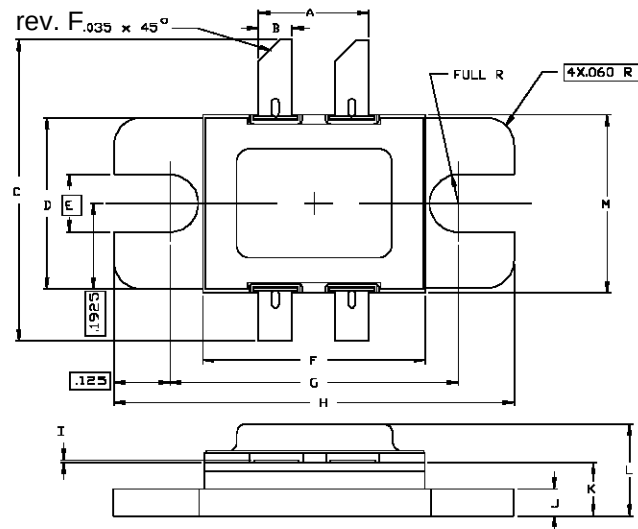
TYPICAL PERFORMANCE (P.W. = 60 μ S, D.C. = 2%)

IMPEDANCE DATA (P.W. = 60 μ S, D.C. = 2%)

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0102 rev. F. $.035 \times 45^\circ$ 

SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.240/6,10	.254/6,45	K	.115/2,92	.130/3,30
B	.070/1,78	.080/2,03	L	---	.230/5,84
C	.780/19,81	.820/20,83	M	.395/10,03	.407/10,34
D	.380/9,65	.390/9,91			
E	.130/3,30				
F	.495/12,57	.507/12,88			
G	.640/16,26	.655/16,64			
H	.890/22,61	.910/23,11			
I	.002/0,05	.006/0,15			
J	.058/1,47	.065/1,65			

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