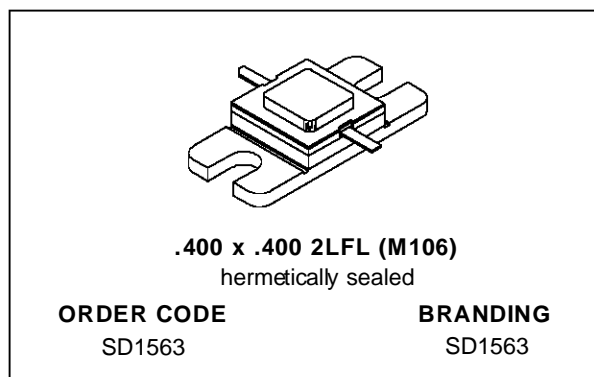
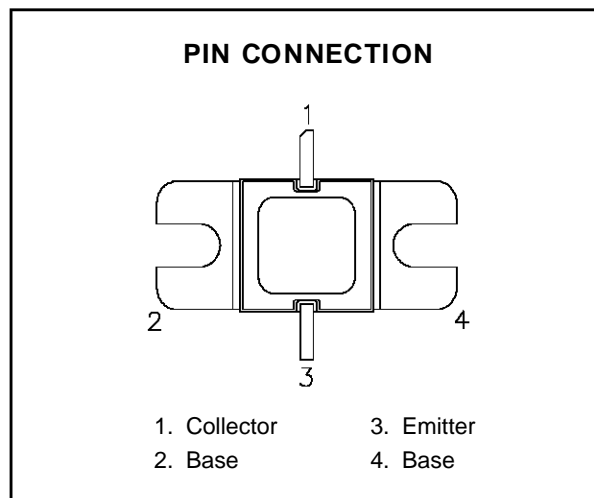


**RF & MICROWAVE TRANSISTORS  
UHF PULSED APPLICATIONS**

- 350 WATTS @ 10 $\mu$ SEC PULSE WIDTH, 10% DUTY CYCLE
- 300 WATTS @ 250 $\mu$ SEC PULSE WIDTH, 10% DUTY CYCLE
- 9.5 dB MIN. GAIN
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTING AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- INFINITE VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS


**DESCRIPTION**

The SD1563 is a gold metallized silicon NPN pulse power transistor. The SD1563 is designed for applications requiring high peak power and low duty cycles within the frequency range of 400 - 500 MHz.


**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	21.6	A
$P_{DISS}$	Power Dissipation	875	W
$T_J$	Junction Temperature	+200	$^{\circ}C$
$T_{STG}$	Storage Temperature	- 65 to +150	$^{\circ}C$

**THERMAL DATA**

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.2	$^{\circ}C/W$
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## SD1563

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

#### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{\text{CBO}}$	$I_{\text{C}} = 50 \text{ mA}$	$I_{\text{E}} = 0 \text{ mA}$	65	—	—	V
$BV_{\text{CES}}$	$I_{\text{C}} = 50 \text{ mA}$	$V_{\text{BE}} = 0 \text{ V}$	65	—	—	V
$BV_{\text{CEO}}$	$I_{\text{C}} = 50 \text{ mA}$	$I_{\text{B}} = 0 \text{ mA}$	28	—	—	V
$BV_{\text{EBO}}$	$I_{\text{E}} = 10 \text{ mA}$	$I_{\text{C}} = 0 \text{ mA}$	3.5	—	—	V
$I_{\text{CES}}$	$V_{\text{CE}} = 30 \text{ V}$	$I_{\text{E}} = 0 \text{ mA}$	—	—	7.5	mA
$h_{\text{FE}}$	$V_{\text{CE}} = 5 \text{ V}$	$I_{\text{C}} = 5 \text{ A}$	10	—	100	—

#### DYNAMIC

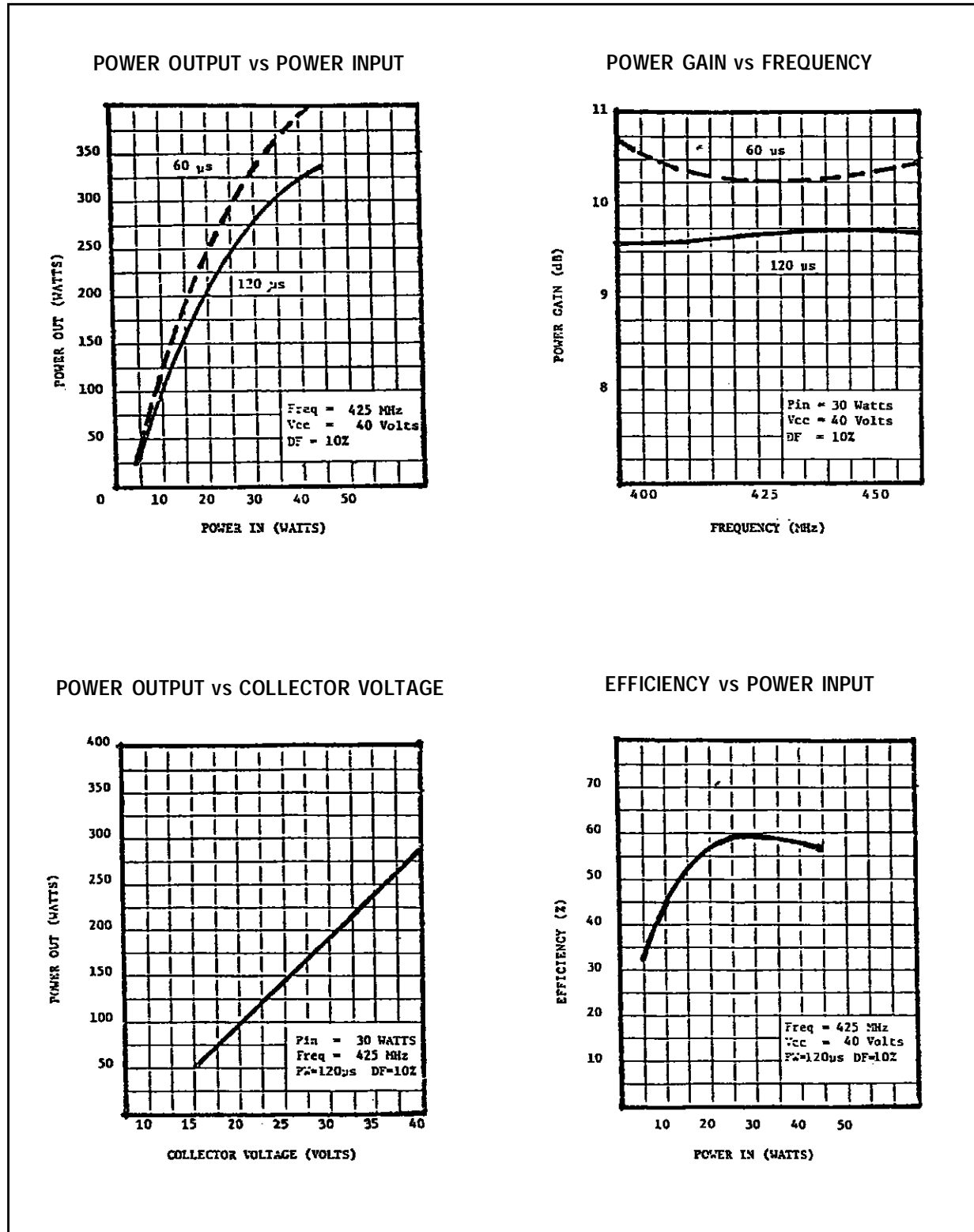
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{\text{OUT}}$	$f = 425 \text{ MHz}$	$P_{\text{IN}} = 33.5 \text{ W}$	$V_{\text{CE}} = 40 \text{ V}$	300	—	—	W
$P_{\text{G}}$	$f = 425 \text{ MHz}$	$P_{\text{OUT}} = 300 \text{ W}$	$V_{\text{CE}} = 40 \text{ V}$	9.5	—	—	dB
$\eta_{\text{C}}$	$f = 425 \text{ MHz}$	$P_{\text{IN}} = 25 \text{ W}$	$V_{\text{CE}} = 40 \text{ V}$	55	—	—	%

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

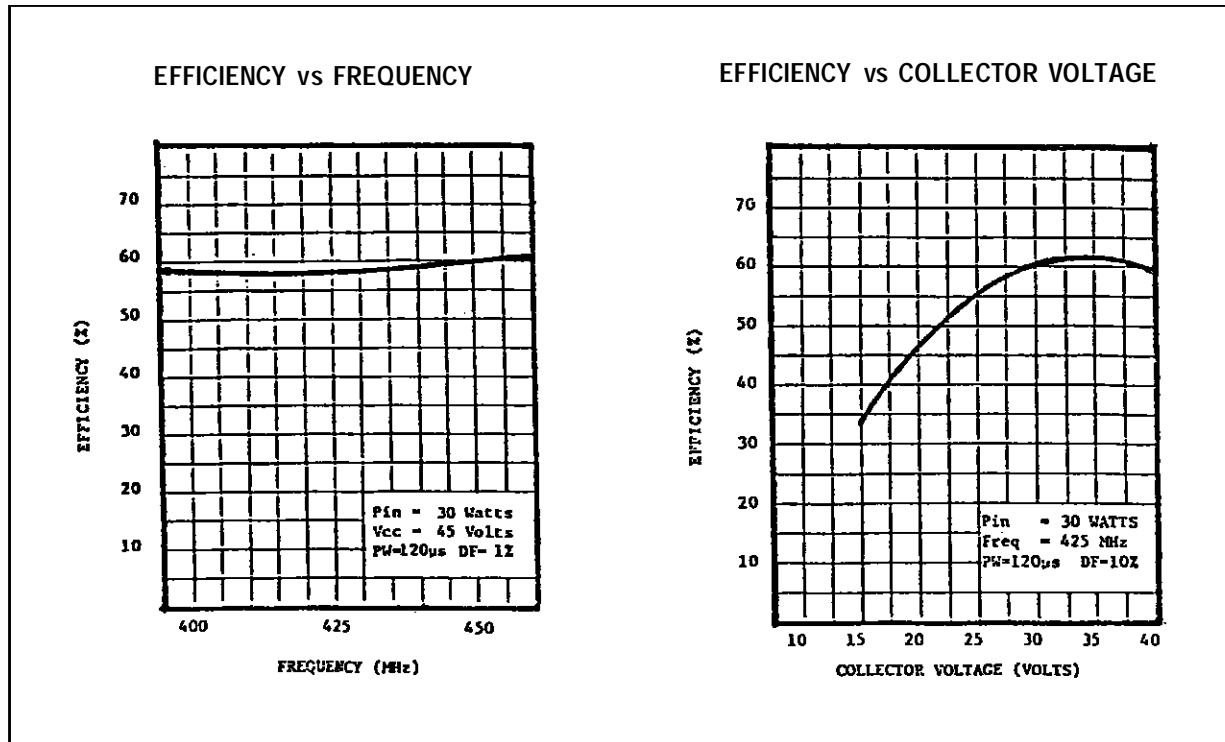
#### TYPICAL PERFORMANCE

$P_{\text{OUT}}$ (W)	P.W. ( $\mu$ Sec)	D.C. (%)	$T_{\text{J}}$ ( $^{\circ}\text{C}$ max.)	$V_{\text{CC}}$
360	10	10	150	40
350	20	10	150	40
325	100	10	150	40
310	500	10	150	40
300	1000	10	150	40

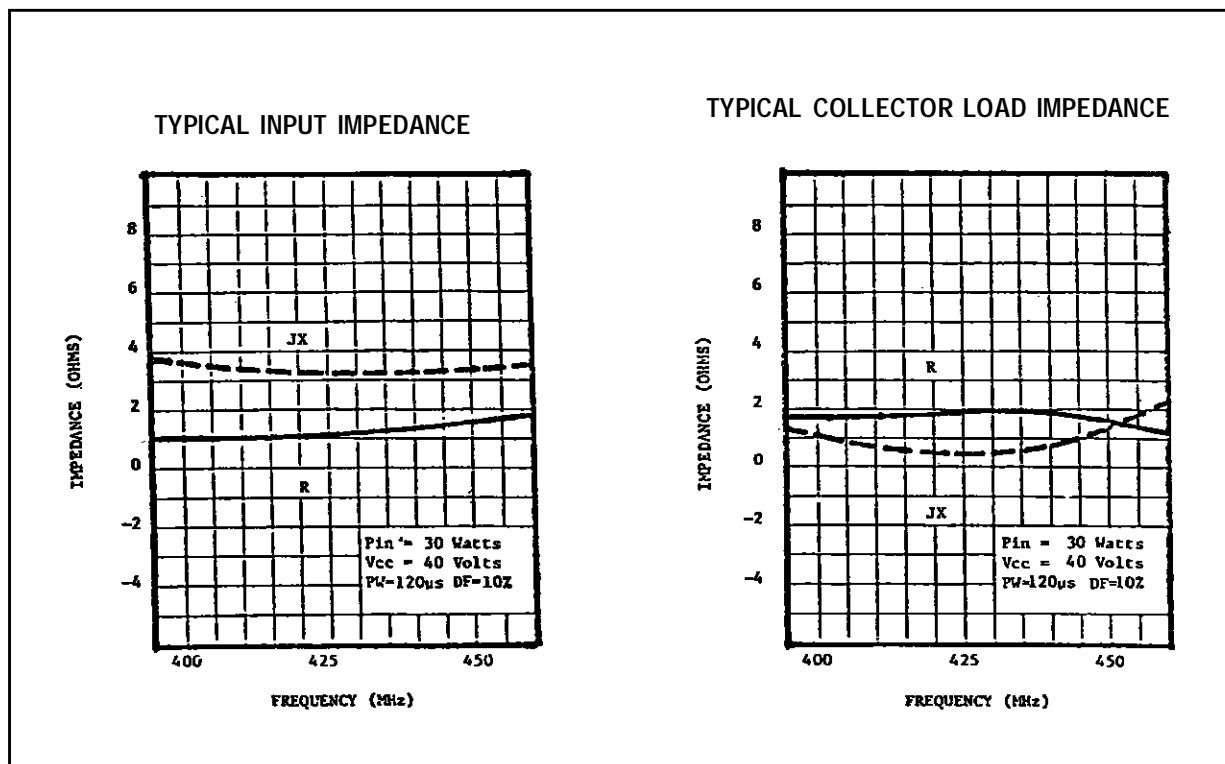
TYPICAL PERFORMANCE (P.W. = 120 $\mu$ Sec)

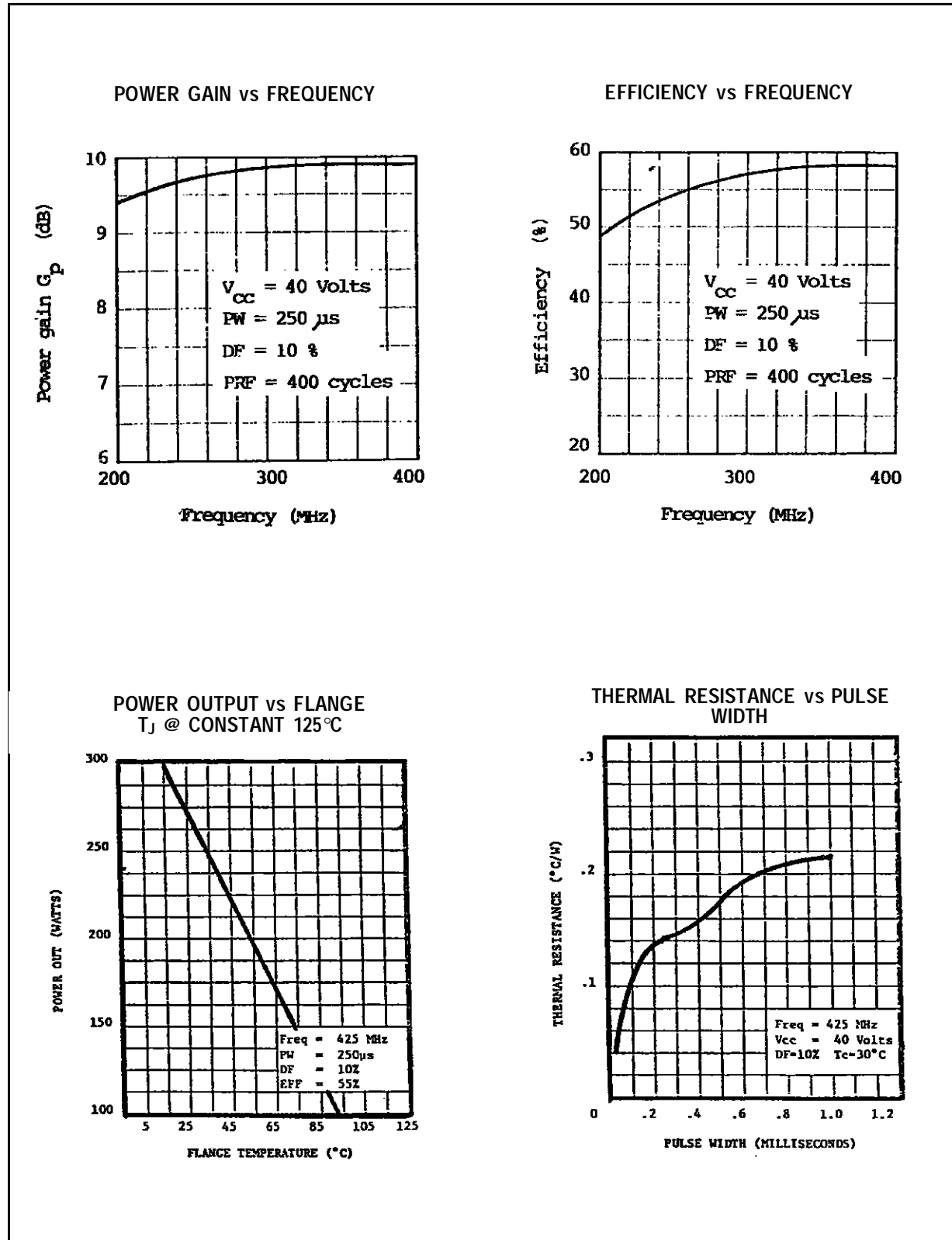


TYPICAL PERFORMANCE (P.W. = 120μSec)

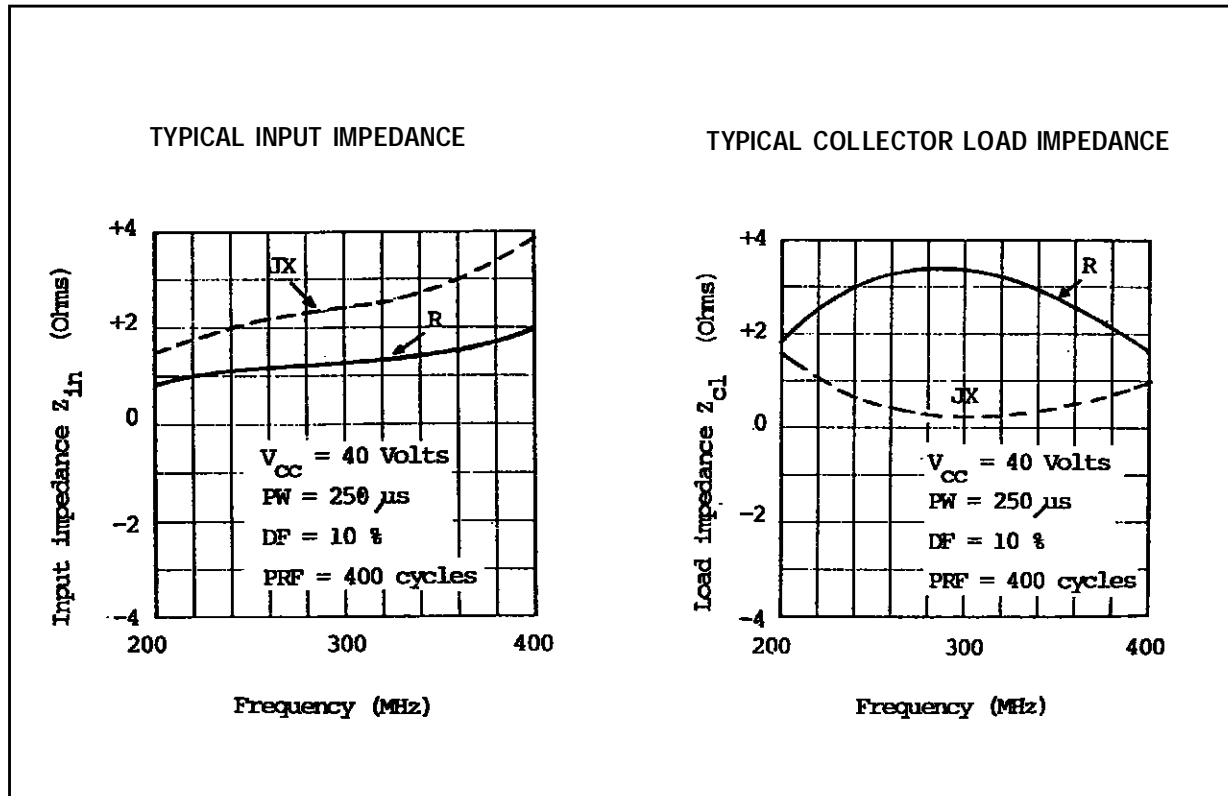


IMPEDANCE DATA (P.W. = 120μSec)

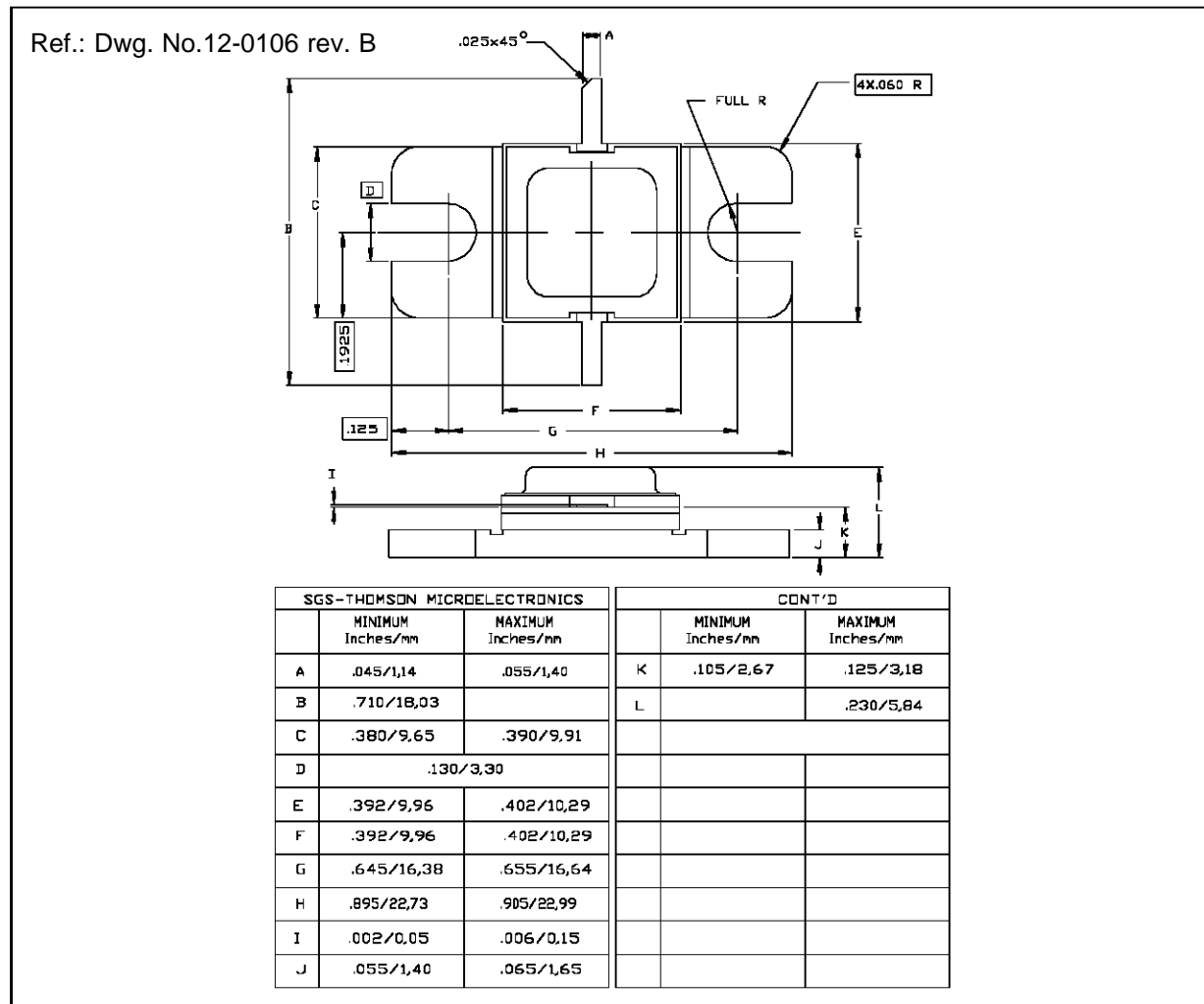


TYPICAL PERFORMANCE (P.W. = 250 $\mu$ Sec)

IMPEDANCE DATA (P.W. = 250 $\mu$ Sec)



## PACKAGE MECHANICAL DATA



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