

SSM**SOLID STATE MICROWAVE****2N5635****2N5636****2N5637****THOMSON-CSF COMPONENTS CORPORATION**

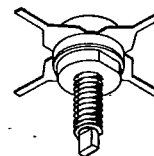
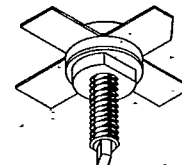
Montgomeryville, PA 18936 ■ (215) 855-8400 ■ TWX 510-661-7299

UHF COMMUNICATIONS TRANSISTOR**DESCRIPTION:**

SSS device type 2N5635 is an epitaxial silicon NPN-planar transistor designed primarily for UHF communications transmitters. This device utilizes ballasted emitter resistors and improved metalization systems to achieve extreme ruggedness under severe operating conditions.

FEATURES:

- 2.5 watts (minimum) with greater than 6.2 dB gain at 28 volts 2N5635-MT71
- 7.5 watts (minimum) with greater than 5.7 dB gain at 28 volts 2N5636-MT71
- 20 watts (minimum) with greater than 4.6 dB gain at 28 volts 2N5637-MT72

**MT-71****MT-72****ABSOLUTE MAX. RATINGS (+25°C except where noted)**

Symbol	Characteristic	2N5635	2N5636	2N5637
V _{CB0}	Collector to Base Voltage	60.0V	60.0V	60.0V
V _{CEO}	Collector to Emitter Voltage	35.0V	35.0V	35.0V
V _{EBO}	Emitter to Base Voltage	4.0V	4.0V	4.0V
I _C (max)	Continuous Collector Current	1.0A	1.5A	3.0A
P _D	Total Dissipation at 25°C Stud	7.5W	15.0W	30.0W
θ _{JC}	Thermal Resistance (Junction to Stud)	23.3°C/W	11.7°C/W	5.8°C/W
T _J	Junction Temperature	-65°C to 200°C	-65°C to 200°C	-65°C to 200°C
T _{stg}	Storage Temperature	-65°C to 200°C	-65°C to 200°C	-65°C to 200°C

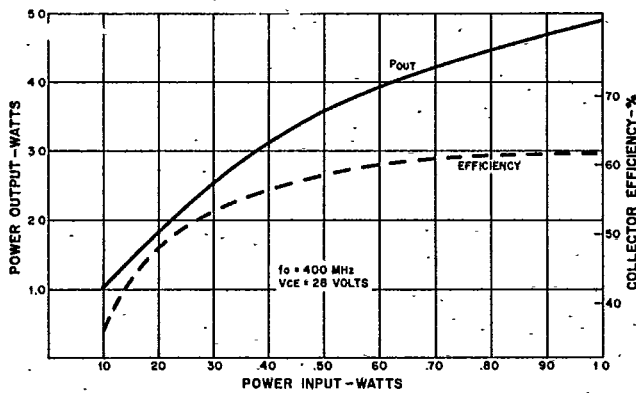
ELECTRICAL CHARACTERISTICS (TA = 25°C)

Symbol	Characteristic	Test Conditions	2N5635		2N5636		2N5637	
			Min.	Max.	Min.	Max.	Min.	Max.
BV _{CEO}	Collector to Emitter Breakdown Voltage	I _C = 100mA, I _B = 0	35.0V	—	—	—	—	—
		I _C = 200mA, I _B = 0	—	—	35.0V	—	35.0V	—
BV _{CES}	Collector to Emitter Breakdown Voltage	I _C = 100mA, V _{BE} = 0	60.0V	—	—	—	—	—
		I _C = 200mA, V _{BE} = 0	—	—	60.0V	—	60.0V	—
BV _{EBO}	Emitter to Base Breakdown Voltage	I _E = 1.0mA, I _C = 0	4.0V	—	—	—	—	—
		I _E = 5.0mA, I _C = 0	—	—	4.0V	—	—	—
		I _E = 10.0mA, I _C = 0	—	—	—	—	4.0V	—
I _{CBO}	Collector Cutoff Current	V _{CB} = 30V, I _E = 0	—	0.10mA	—	0.10mA	—	0.10mA
h _{FE}	DC Current Gain	V _{CE} = 5V, I _C = 100mA	5.0	—	—	—	—	—
		V _{CE} = 5V, I _C = 200mA	—	—	5.0	—	—	—
		V _{CE} = 5V, I _C = 500mA	—	—	—	—	5.0	—
C _{ob}	Output Capacitance	V _{CE} = 30V, I _C = 0 f _o = 1.0MHz	—	10.0 pF	—	20.0 pF	—	30.0 pF
C _{ib}	Input Capacitance	V _{EB} = 0.5V, I _C = 0 f _o = 1.0MHz	18 pF typ.		44 pF typ.		96 pF typ.	
P _{out}	Power Output	f _o = 400MHz, V _{CE} = 28V	3.5W typ.		10.0W typ.		23.0W typ.	
P _g	Power Gain	P _o = 2.5W, I _C = 179mA	8.5 dB typ.					
		P _o = 7.5W, I _C = 534mA			7.9 dB typ.			
		P _o = 20W, I _C = 1.19A					6.1 dB typ.	
η	Collector Efficiency	P _o = 2.5W, I _C = 179mA	50%					
		P _o = 7.5W, I _C = 534mA			50%			
		P _o = 20W, I _C = 1.19A					60%	

2N5635-1

**THOMSON-CSF**

2N5635

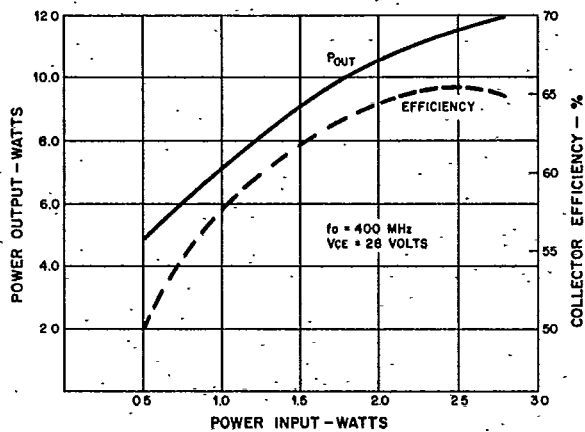


POWER OUTPUT VS POWER INPUT

$f_o = 400 \text{ MHz}$ $V_{CE} = 28.0 \text{ VOLTS}$			
PIN WATTS	POUT WATTS	INPUT OHMS	OUTPUT OHMS
.20 W	2.0 W	$3.8 + j 1.9$	$30.2 - j 50.0$
.40 W	3.2 W	$4.4 + j 2.9$	$34.5 - j 48.2$
.60 W	4.1 W	$4.6 + j 3.5$	$39.5 - j 43.8$
.80 W	4.6 W	$4.8 + j 4.0$	$42.3 - j 40.8$

LARGE SIGNAL INPUT AND OUTPUT IMPEDANCE

2N5636

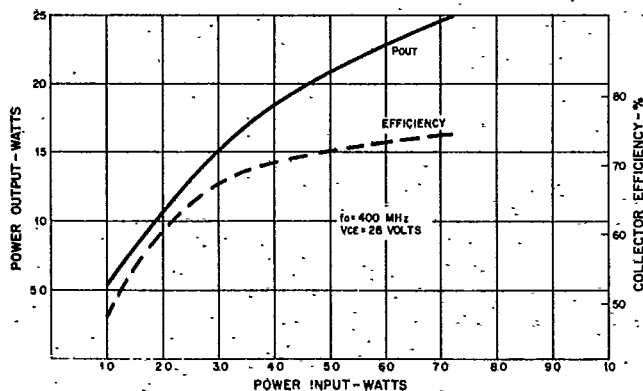


POWER OUTPUT VS POWER INPUT

$f_o = 400 \text{ MHz}$ $V_{CE} = 28.0 \text{ VOLTS}$			
PIN WATTS	POUT WATTS	INPUT OHMS	OUTPUT OHMS
1.0	7.5	$2.3 + j 3.4$	$16.8 - j 19.5$
1.5	9.2	$2.4 + j 3.5$	$17.6 - j 19.4$
2.0	10.5	$2.5 + j 3.8$	$18.3 - j 19.2$
2.5	11.5	$2.7 + j 4.0$	$18.4 - j 19.2$

LARGE SIGNAL INPUT AND OUTPUT IMPEDANCE

2N5637



POWER OUTPUT VS POWER INPUT

$f_o = 400 \text{ MHz}$ $V_{CE} = 28.0 \text{ VOLTS}$			
PIN WATTS	POUT WATTS	INPUT OHMS	OUTPUT OHMS
4.0	18.0	$1.7 + j 3.7$	$12.4 - j 10.1$
5.0	20.9	$1.7 + j 3.8$	$12.6 - j 10.0$
6.0	23.1	$1.7 + j 3.9$	$12.7 - j 10.0$
7.0	24.8	$1.7 + j 4.0$	$12.8 - j 9.8$

LARGE SIGNAL INPUT AND OUTPUT IMPEDANCE