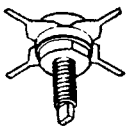
2N5635
2N5636/2N5637

RF & MICROWAVE TRANSISTORS
WIDEBAND VHF - UHF CLASS C

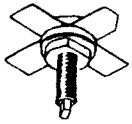
- CLASS C TRANSISTOR FAMILY
- FREQUENCY 400MHz
- VOLTAGE 28V
- POWER OUT 2.5 TO 20W
- HIGH POWER GAIN
- HIGH EFFICIENCY



.380 NARROW 4LSTUD (M104)

ORDER CODE

SD1240
SD1242
SD1244-07



.380 4LSTUD (M135)

BRANDING

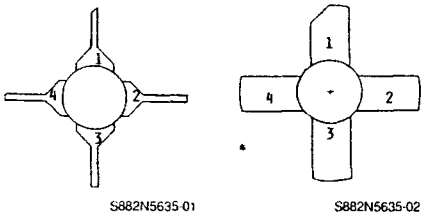
2N5635
2N5636
2N5637

DESCRIPTION

The 2N5635, 2N5636, 2N5637 are epitaxial silicon NPN-planar transistors designed primarily for UHF communications transmitters. These devices utilize ballasted emitter resistors and improved metallization systems to achieve extreme ruggedness under severe operating conditions.

Part Number	Package
2N5635	.380N 4LSTUD
2N5636	.380N 4LSTUD
2N5637	.380 4LSTUD

PIN CONNECTION



1 collector
2 emitter
3 base
4 emitter

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	2N5635	2N5636	2N5637	Unit
V_{CBO}	Collector - Base Voltage	60.0	60.0	60.0	V
V_{CEO}	Collector - Emitter Voltage	35.0	35.0	35.0	V
V_{CES}	Collector - Emitter Voltage	60	60	60	V
V_{EBO}	Emitter - Base Voltage	4.0	4.0	4.0	V
I_C	Collector Current	1.0	1.5	3.0	A
P_{tot}	Total Power Dissipation	7.5	15.0	30.0	W
T_{stg}	Storage Temperature	– 65 to + 150	– 65 to + 150	– 65 to + 150	°C
T_j	Junction Temperature	200	200	200	°C

THERMAL DATA

$R_{th(j-c)}$	Junction-case Thermal Resistance	23.3	11.7	5.8	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C)

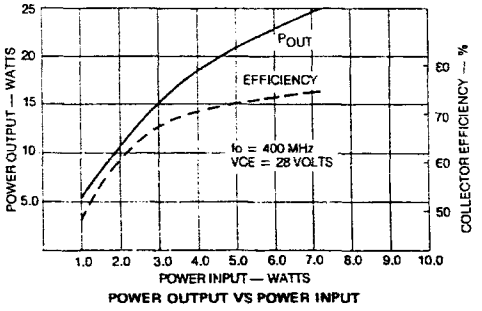
STATIC

Symbol	Test Conditions		2N5635			2N5636			2N5637			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
BV_{CES}	I_C = 100mA	V_{BE} = 0	60.0									V
	I_C = 200mA	V_{BE} = 0				60.0			60.0			
BV_{CEO}	I_C = 100mA	I_B = 0	35.0									V
	I_C = 200mA	I_B = 0				35.0			35.0			
BV_{EBO}	I_E = 1.0mA	I_C = 0	4.0									V
	I_E = 5.0mA	I_C = 0				4.0						
	I_E = 10.0mA	I_C = 0							4.0			
I_{CBO}	V_{CB} = 30V	I_E = 0			0.10			0.10			1	mA
h_{FE}	V_{CE} = 5V	I_C = 100mA	5.0									
	V_{CE} = 5V	I_C = 200mA				5.0						
	V_{CE} = 5V	I_C = 500mA							5.0			

DYNAMIC

Symbol	Test Conditions		2N5635			2N5636			2N5637			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
P_{out}	f_o = 400MHz,	V_{CE} = 28V	2.5	3.5		7.5	10.0		20	23		W
G_p	P_o = 2.5W,	I_C = 179mA	6.2	8.5								dB
	P_o = 7.5W,	I_C = 534mA				5.7	7.9					
	P_o = 20W,	I_C = 1.19A							4.6	6.1		
η_C	P_o = 2.5W,	I_C = 179mA	50									%
	P_o = 7.5W,	I_C = 534mA				50						
	P_o = 20W,	I_C = 1.19A							60			
C_{OB}	V_{CE} = 30V, f_o = 1.0MHz	I_C = 0			10.0			20.0			30.0	pF
C_{ib}	V_{EB} = 0.5V, f_o = 1.0MHz	I_C = 0		18			44			96		pF

2N5637



POWER OUTPUT VS POWER INPUT

f_o = 400MHz		V_{CE} = 28.0Volts	
P_{IN} Watts	P_{OUT} Watts	Input Ohms	Output Ohms
4.0	18.0	1.7 + j3.7	12.4 – j10.1
5.0	20.9	1.7 + j3.8	12.6 – j10.0
6.0	23.1	1.7 + j3.9	12.7 – j10.0
7.0	24.8	1.7 + j4.0	12.8 – j 9.8

Large Signal Input and Output Impedance

S882N5637-01