

**2N5641**

**SILICON BIPOLAR NPN POWER TRANSISTOR**  
7 W, up to 175 MHz

The silicon bipolar n-p-n transistor is designed primarily for 12.5 V AM Class C RF amplifiers functional in the aviation band 118-136 MHz and for 28 V FM Class C RF amplifiers utilized in ground station transmitters.

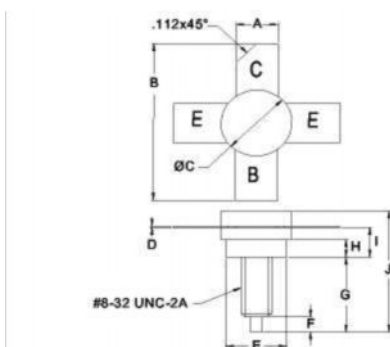
**Features (At 175 MHz):**

- Output Power: 7 W
- Power Gain: 8.4 dB Min
- Efficiency: 60% Min

**Absolute Maximum Ratings**

Parameters	Sym	Value	Unit
Collector–Emitter Voltage	$V_{CEO}$	35	$V_{DC}$
Collector-Base Voltage	$V_{CBO}$	65	$V_{DC}$
Emitter–Base Voltage	$V_{EBO}$	4	$V_{DC}$
Collector Current	$I_{C(max)}$	1	$A_{DC}$
Operation Junction Temperature	$T_j$	-65 ÷ +200	°C
Storage Temperature Range	$T_{STG}$	-65 ÷ +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	11.7	°C/W
Total Power Dissipation, $T_C=25^\circ C$	$P_D$	15	W

**PACKAGE STYLE .380 4L STUD**



DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.980 / 24.89	
C	.370 / 9.40	.385 / 9.78
D	.004 / 0.10	.007 / 0.18
E	.320 / 8.13	.330 / 8.38
F	.100 / 2.54	.130 / 3.30
G	.450 / 11.43	.490 / 12.45
H	.090 / 2.29	.100 / 2.54
I	.155 / 3.94	.175 / 4.45
J		.750 / 19.05

**Parameters**

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage ( $I_C = 200\text{ mA}$ , $I_B = 0\text{ A}$ )	$V_{(BR)CEO}$	35	—	—	$V_{DC}$
Collector–Emitter Breakdown Voltage ( $I_C = 200\text{ mA}$ , $V_{BE} = 0\text{ V}$ )	$V_{(BR)CER}$	65	—	—	$V_{DC}$
Emitter–Base Breakdown Voltage ( $I_E = 5\text{ mA}$ , $I_C = 0\text{ A}$ )	$V_{(BR)EBO}$	4	—	—	$V_{DC}$
Collector–Base Leakage Current ( $V_{CB} = 30\text{ V}$ , $I_E = 0\text{ A}$ )	$I_{CBO}$	—	—	1	$mA_{DC}$
DC Current Gain ( $V_{CE} = 5\text{ V}$ , $I_C = 100\text{ mA}$ )	$h_{FE}$	5	—	100	
Output Capacitance ( $V_{CB} = 30\text{ V}$ , $I_E = 0\text{ A}$ , $f = 1\text{ MHz}$ )	$C_{OB}$	—	—	15	pF
Power Gain ( $V_{CE} = 28\text{ V}$ , $P_{OUT} = 7\text{ W}$ , $f = 175\text{ MHz}$ )	$G_p$	8.4	—	—	dB
Drain Efficiency ( $V_{CE} = 28\text{ V}$ , $P_{OUT} = 7\text{ W}$ , $f = 175\text{ MHz}$ )	$\eta$	60	—	—	%

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