

2N5642

SILICON BIPOLAR NPN POWER TRANSISTOR 20 W, up to 175 MHz

The silicon bipolar n-p-n transistor is designed for 28 V Large Signal Class C Amplifier Applications up to 175 MHz.

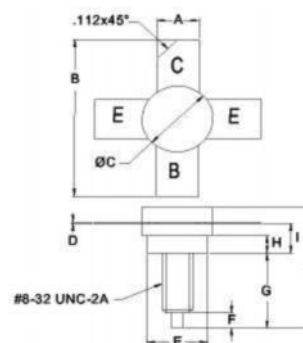
Features (At 175 MHz):

- Output Power: 20 W
- Power Gain: 8.2 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	3	A_{DC}
Operation Junction Temperature	T_j	-65 ÷ +200	°C
Storage Temperature Range	T_{STG}	-65 ÷ +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5.8	°C/W
Total Power Dissipation, $T_C=25^\circ C$	P_D	30	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 ($I_C = 200\text{ mA}$, $V_{BE} = 0\text{ V}$)	$V_{(BR)CEO}$	35	—	—	V_{DC}
Collector–Emitter Breakdown Voltage ($I_C = 200\text{ mA}$)	$V_{(BR)CER}$	65	—	—	V_{DC}
Emitter–Base Breakdown Voltage ($I_E = 10\text{ mA}$, $I_C = 0\text{ A}$)	$V_{(BR)EBO}$	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 ($V_{CE} = 5\text{ V}$, $I_C = 200\text{ mA}$)	h_{FE}	5	—	100	
Output Capacitance ($V_{CB} = 30\text{ V}$, $I_E = 0\text{ A}$, $f = 1\text{ MHz}$)	C_{OB}	—	—	35	pF
Power Gain ($V_{CE} = 28\text{ V}$, $P_{OUT} = 20\text{ W}$, $f = 175\text{ MHz}$)	Gp	8.2	10	—	dB
Drain Efficiency ($V_{CE} = 28\text{ V}$, $P_{OUT} = 20\text{ W}$, $f = 175\text{ MHz}$)	η_C	60	—	—	%

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Specification is subject to change without notice