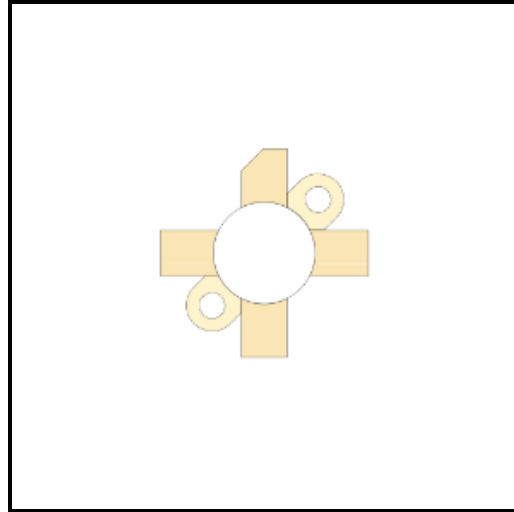


Product Features

The BLF177 is a gold metallized silicon n-channel RF power transistor designed for broadband commercial and military applications requiring high power and gain without compromising reliability, ruggedness, or inter-modulation distortion.



Mechanical And Environmental Specifications:

Parameter	Description	Notes
RoHS Compliance	Yes	

Drawing

Typical Performance Curves

BLF177

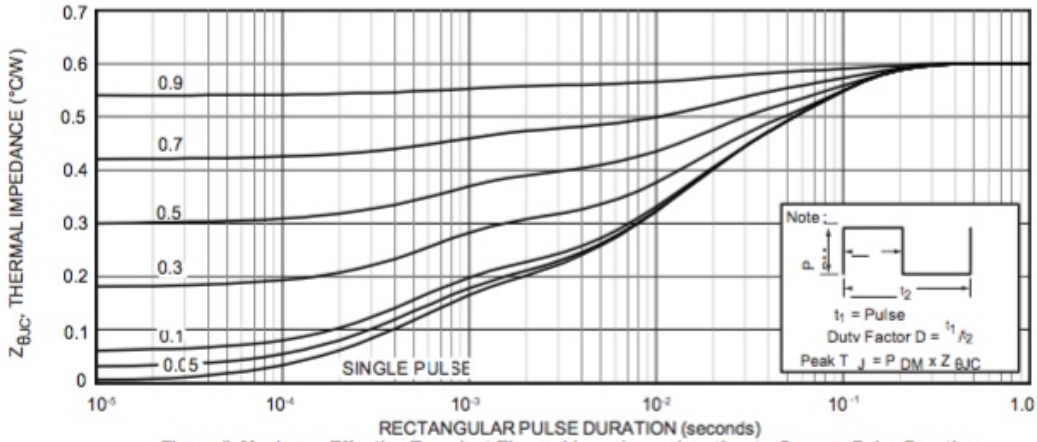


Figure 5. Maximum Effective Transient Thermal Impedance Junction-to-Case vs Pulse Duration

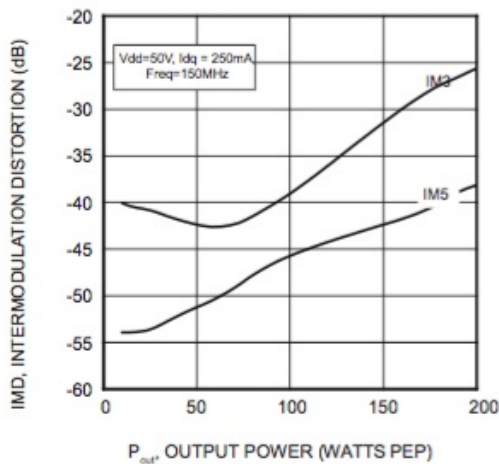


Figure 6. IMD versus P_{OUT}

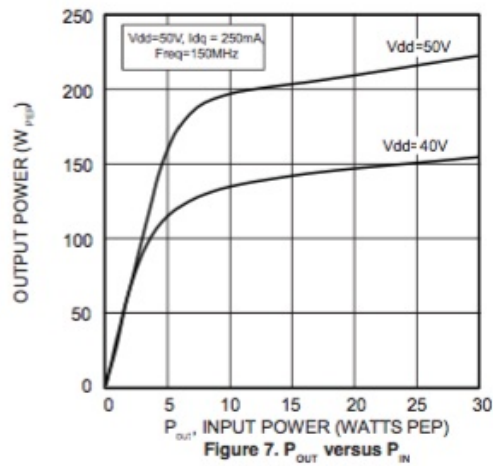


Figure 7. P_{OUT} versus P_{IN}

Graph

Power Transistor. Silicon N-Channel. At 30 Mhz with 50V, 150W power; 22 dB Gain. At 175MHz with 50V, 150W power, 14 dB Gain.

Dynamic Characteristics

BLF177

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
C_{ISS}	Input Capacitance	$V_{GS} = 0V$ $V_{DS} = 150V$ $f = 1MHz$		375		pF
C_{OSS}	Output Capacitance			200		
C_{RSS}	Reverse Transfer Capacitance			12		

Functional Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
G_{PS}	$f_1 = 30MHz, f_2 = 30.001MHz, V_{DD} = 50V, I_{DQ} = 250mA, P_{out} = 150W_{PEP}^1$	18	22		dB
G_{PS}	$f = 175MHz, V_{DD} = 50V, I_{DQ} = 250mA, P_{out} = 150W$		14		
η_D	$f_1 = 30MHz, f_2 = 30.001MHz, V_{DD} = 50V, I_{DQ} = 250mA, P_{out} = 150W_{PEP}^1$		50		%
IMD _(dB)	$f_1 = 30MHz, f_2 = 30.001MHz, V_{DD} = 50V, I_{DQ} = 250mA, P_{out} = 150W_{PEP}^1$		-30		dBc
ψ	$f_1 = 50MHz, V_{DD} = 50V, I_{DQ} = 250mA, P_{out} = 150W$ CW 70:1 VSWR - All Phase Angles , 0.2mSec X 20% Duty Factor	No Degradation in Output Power			

1. To MIL-STD-1311 Version A, test method 2204B, Two Tone, Reference Each Tone

Maximum Ratings

All Ratings: $T_c = 25^\circ C$ unless otherwise specified


Symbol	Parameter	BLF177	Unit
V_{DSS}	Drain-Source Voltage	170	V
I_D	Continuous Drain Current @ $T_c = 25^\circ C$	16	A
V_{GS}	Gate-Source Voltage	± 40	V
P_D	Total Device dissipation @ $T_c = 25^\circ C$	300	W
T_{STG}	Storage Temperature Range	-65 to 150	$^\circ C$
T_J	Operating Junction Temperature	200	

Static Electrical Characteristics

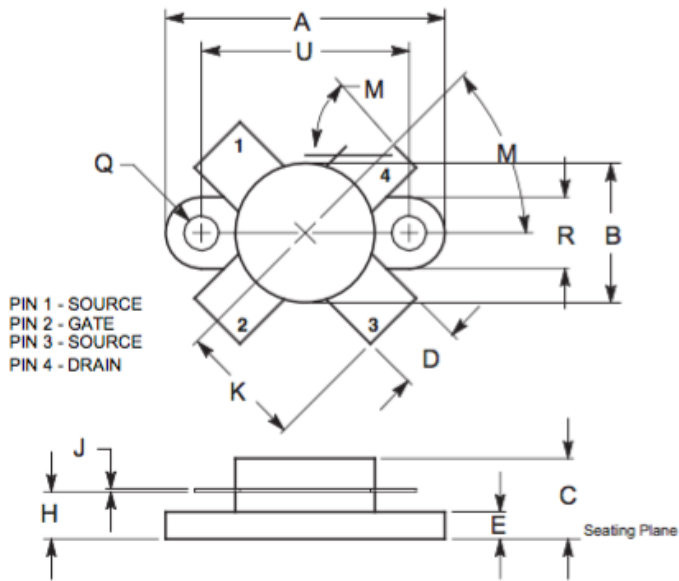
Symbol	Parameter	Min	Typ	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage ($V_{GS} = 0V, I_D = 100mA$)	170	180		V
$V_{DS(OH)}$	On State Drain Voltage ($I_{D(OH)} = 10A, V_{GS} = 10V$)		2.0	3.0	
I_{DSS}	Zero Gate Voltage Drain Current ($V_{DS} = 100V, V_{GS} = 0V$)			1	mA
I_{GSS}	Gate-Source Leakage Current ($V_{GS} = \pm 20V, V_{DS} = 0V$)			1.0	μA
g_s	Forward Transconductance ($V_{DS} = 10V, I_D = 5A$)	5.0			mhos
$V_{GS(TH)}$	Gate Threshold Voltage ($V_{DS} = 10V, I_D = 100mA$)	2.9	3.6	4.4	V

Thermal Characteristics

Symbol	Characteristic	Min	Typ	Max	Unit
$R_{\theta JC}$	Junction to Case Thermal Resistance			0.60	$^\circ C/W$

 **CAUTION:** These Devices are Sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.

Power Transistor. Silicon N-Channel. At 30 Mhz with 50V, 150W power; 22 dB Gain. At 175MHz with 50V, 150W power, 14 dB Gain.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.096	0.990	24.39	25.14
B	0.465	0.510	11.82	12.95
C	0.229	0.275	5.82	6.98
D	0.216	0.235	5.49	5.96
E	0.084	0.110	2.14	2.79
H	0.144	0.178	3.66	4.52
J	0.003	0.007	0.08	0.17
K	0.435		11.0	
M	45° NOM		45° NOM	
Q	0.115	0.130	2.93	3.30
R	0.246	0.255	6.25	6.47

Product Notes