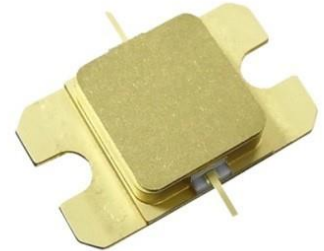


**■ Features**

- High Output Power:  $P_{sat}=48.0\text{dBm}$  (Typ.)
- High Gain:  $G_p=13.0\text{dB}$  (Typ.)
- Drain Efficiency:  $DE=50\%$  (Typ.)
- Broad Band: 5.2 to 5.9GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package


**■ Description**

The SGC5259-50A-R is a high power GaN-HEMT that is internally matched for C-band radar bands to provide optimum power and gain in a 50ohm system.

**ABSOLUTE MAXIMUM RATING (Case Temperature  $T_c=25$  deg.C)**

Item	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	55	V
Gate-Source Voltage	$V_{GS}$	-15	V
Storage Temperature	$T_{stg}$	-55 to +125	deg.C
Channel Temperature	$T_{ch}$	+250	deg.C

**RECOMMENDED OPERATING CONDITION**

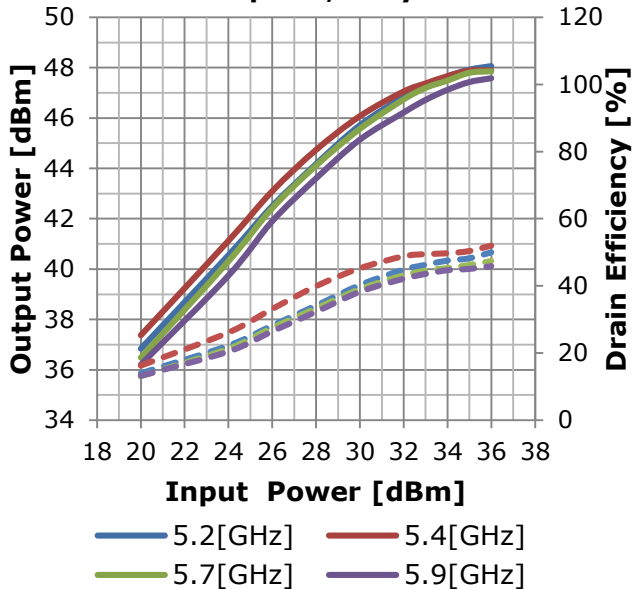
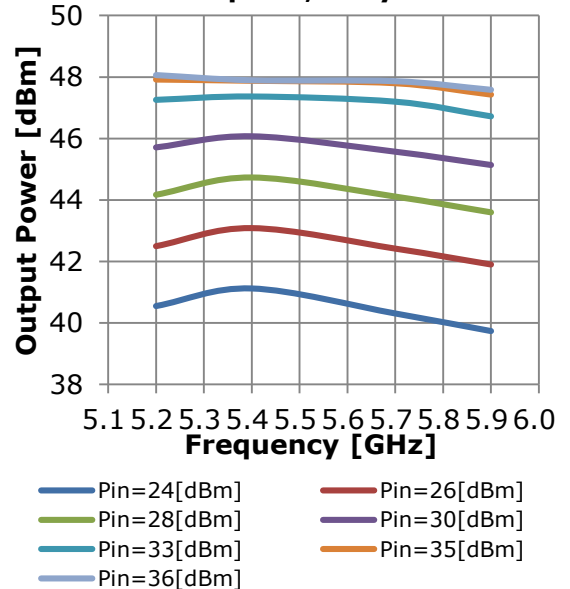
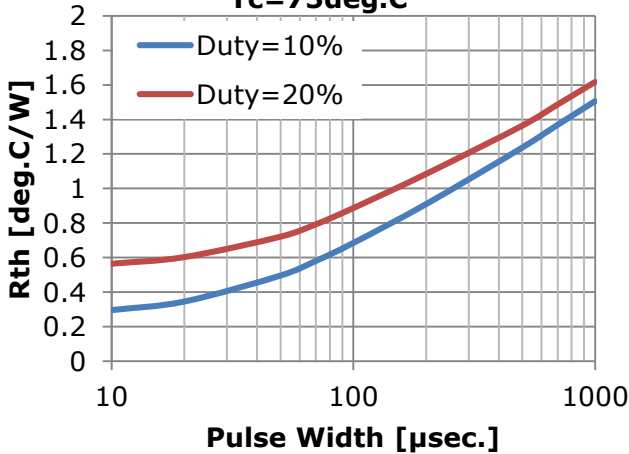
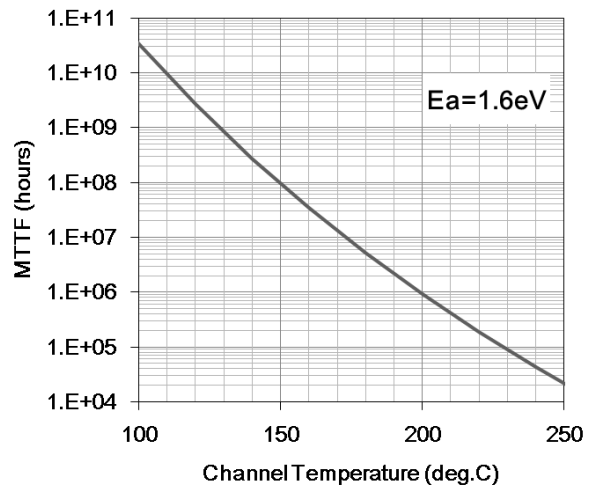
Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	$V_{DS}$		$\leq 50$	V
Forward Gate Current	$I_{GF}$	$R_g=100\text{ohm}$	$\leq 37.4$	mA
Reverse Gate Current	$I_{GR}$	$R_g=100\text{ohm}$	$\geq -2.2$	mA
Channel Temperature	$T_{ch}$		$< +200$	deg.C

**ELECTRICAL CHARACTERISTICS (Case Temperature  $T_c=25$  deg.C)**

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-off Voltage	$V_p$	$V_{DS}=50V, I_{DS}=3\text{mA}$	-	-4.5	-	V
Frequency Range	Freq.	$V_{DS}=50V$	5.2	-	5.9	GHz
Output Power	$P_{sat}$	$I_{DS(DC)}=0.3A$	46.5	48.0	-	dBm
Power Gain	$G_p$	Pulse Width=100 $\mu\text{sec}$ .	11.5	13.0	-	dB
Drain Current	$I_{DSR}$	Duty=10%	-	2.5	-	A
Drain Efficiency	DE	Pin=35dBm	-	50	-	%
Thermal Resistance	$R_{th}$	Channel to Case ( $P_{diss}=50W, CW$ )	-	2.4	2.8	deg.C/W

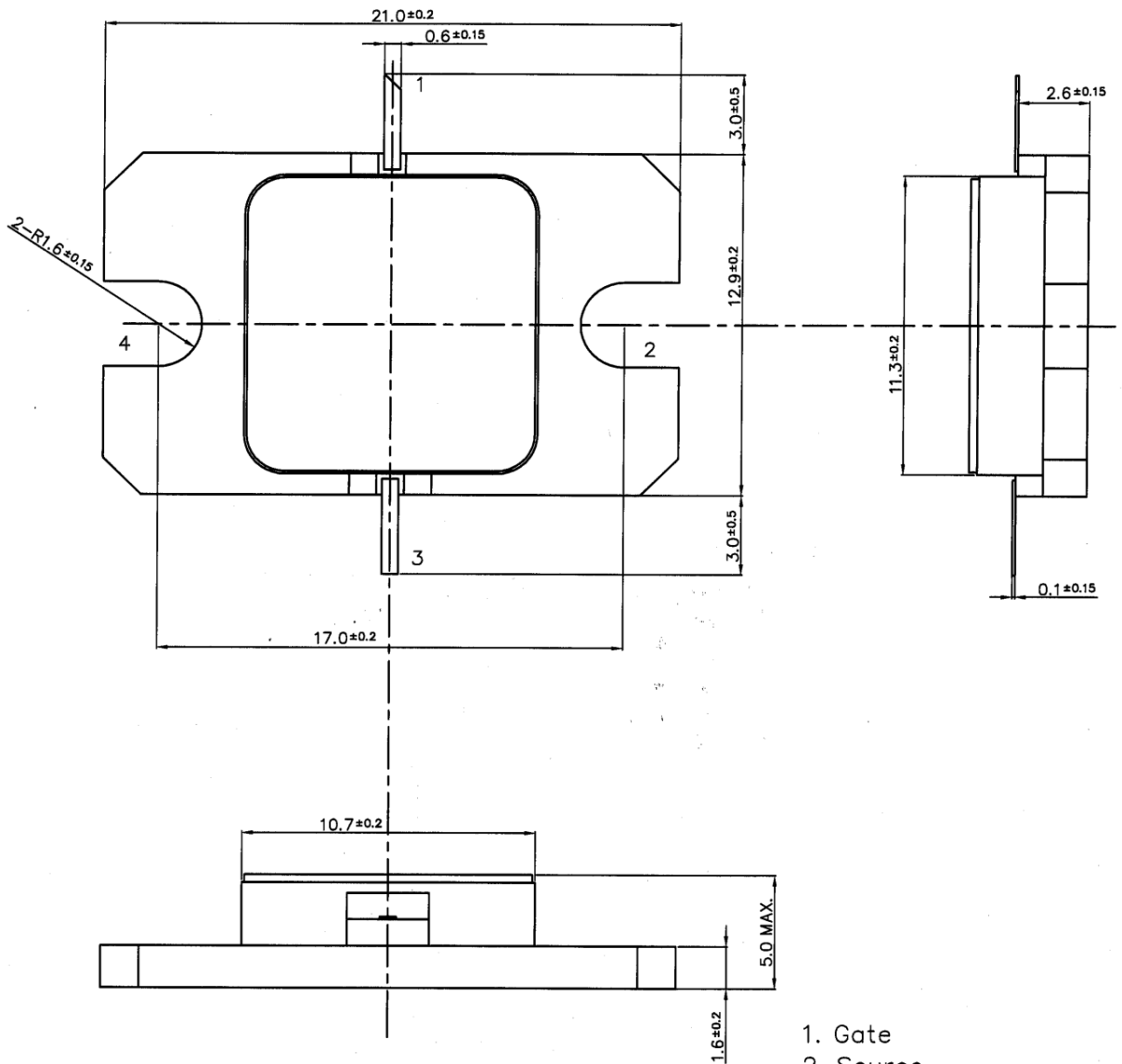
CASE STYLE	IBK
RoHS Compliance	YES
ESD	Class 2
	2000V to <4000V

Note: Based on ANSI/ESDA/JEDEC JS-001-2012(C=100pF, R=1.5kohm)

**● RF Characteristics**
**Output Power &  
Drain Efficiency vs. Input Power**
 $V_{DS}=50V, I_{DS(DC)}=0.3A$   
**PW=100 $\mu$ sec., Duty=10%**

**Output Power vs. Frequency**
 $V_{DS}=50V, I_{DS(DC)}=0.3A$   
**PW=100 $\mu$ sec., Duty=10%**

**● Thermal Characteristics In Pulsed Operation**
**Rth vs. Pulse Width**  
 $T_c=75deg.C$ 

**MTTF vs. Tch**


● Package Outline

Case Style : IBK



1. Gate
2. Source
3. Drain
4. Source

Unit: mm

Tolerance : ±0.15

## **For Safety, Observe the Following Procedures Environmental Management**

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Respect all applicable laws of the country when discarding this product.  
This product must be disposed in accordance with methods specified by applicable hazardous waste procedures.

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