

**■ Features**

- High Output Power:  $P_{sat}=48.0\text{dBm}$  (Typ.)
- High Gain:  $G_p=11.0\text{dB}$  (Typ.)
- High Power Added Efficiency:  $PAE=40\%$  (Typ.)
- Frequency Band: 9.3 to 9.5GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package


**■ Description**

The SGC9395-50A-R is a high power GaN-HEMT that is internally matched for X-band radar bands to provide optimum power and gain in a 50ohm system.

**ABSOLUTE MAXIMUM RATING (Case Temperature  $T_c=25\text{ deg.C}$ )**

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	$I_{GF}$	$R_g=100\text{ohm}$	$\leq 4$	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  $T_c=25\text{ deg.C}$ )**

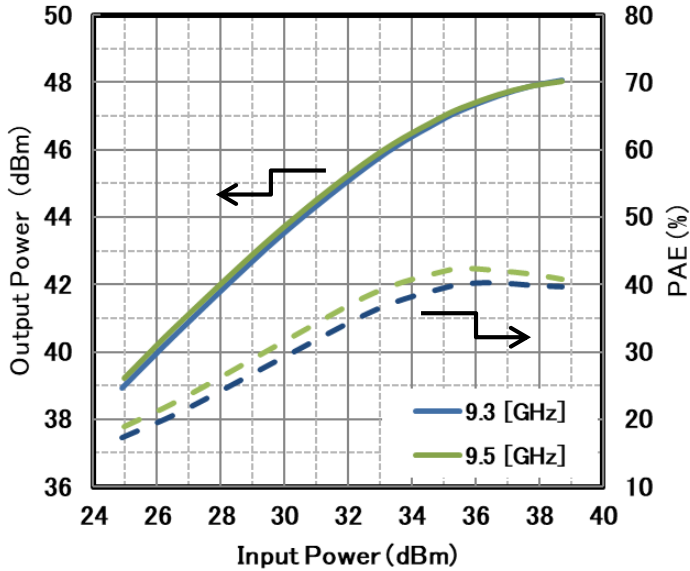
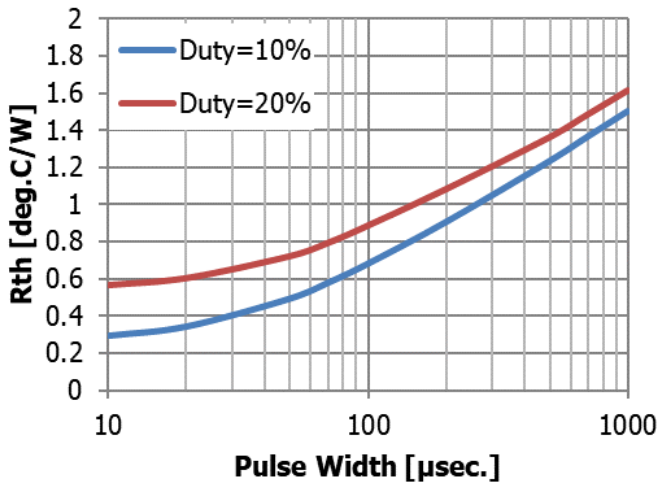
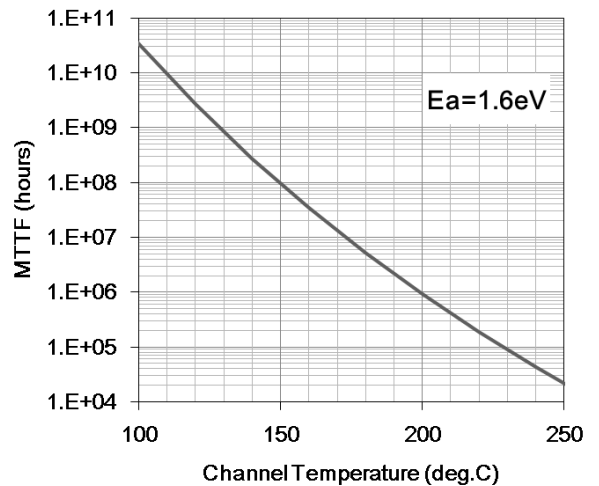
Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-off Voltage	$V_p$	$V_{DS}=50\text{V}, I_{DS}=3\text{mA}$	-	-4.5	-	V
Frequency Range	Freq.	$V_{DS}=50\text{V-typ.}$ $I_{DS(DC)}=0.17\text{A-typ.}$ Pulse Width=100μsec. Duty=10%	9.3	-	9.5	GHz
Output Power at $P_{in}=38\text{dBm}$	$P_{sat}$		47.0	48.0	-	dBm
Power Gain at $P_{out}=47\text{dBm}$	$G_p$		10.0	11.0	-	dB
Drain Current at $P_{in}=38\text{dBm}$	$I_{DSR}$		-	2.8	4.1	A
Power Added Efficiency at $P_{in}=38\text{dBm}$	PAE		-	40	-	%
Gain Flatness	$\Delta G$		-	1.6	-	dB
Thermal Resistance	$R_{th}$	Channel to Case ( $P_{diss}=50\text{W}, CW$ )	-	2.4	3.0	deg.C/W

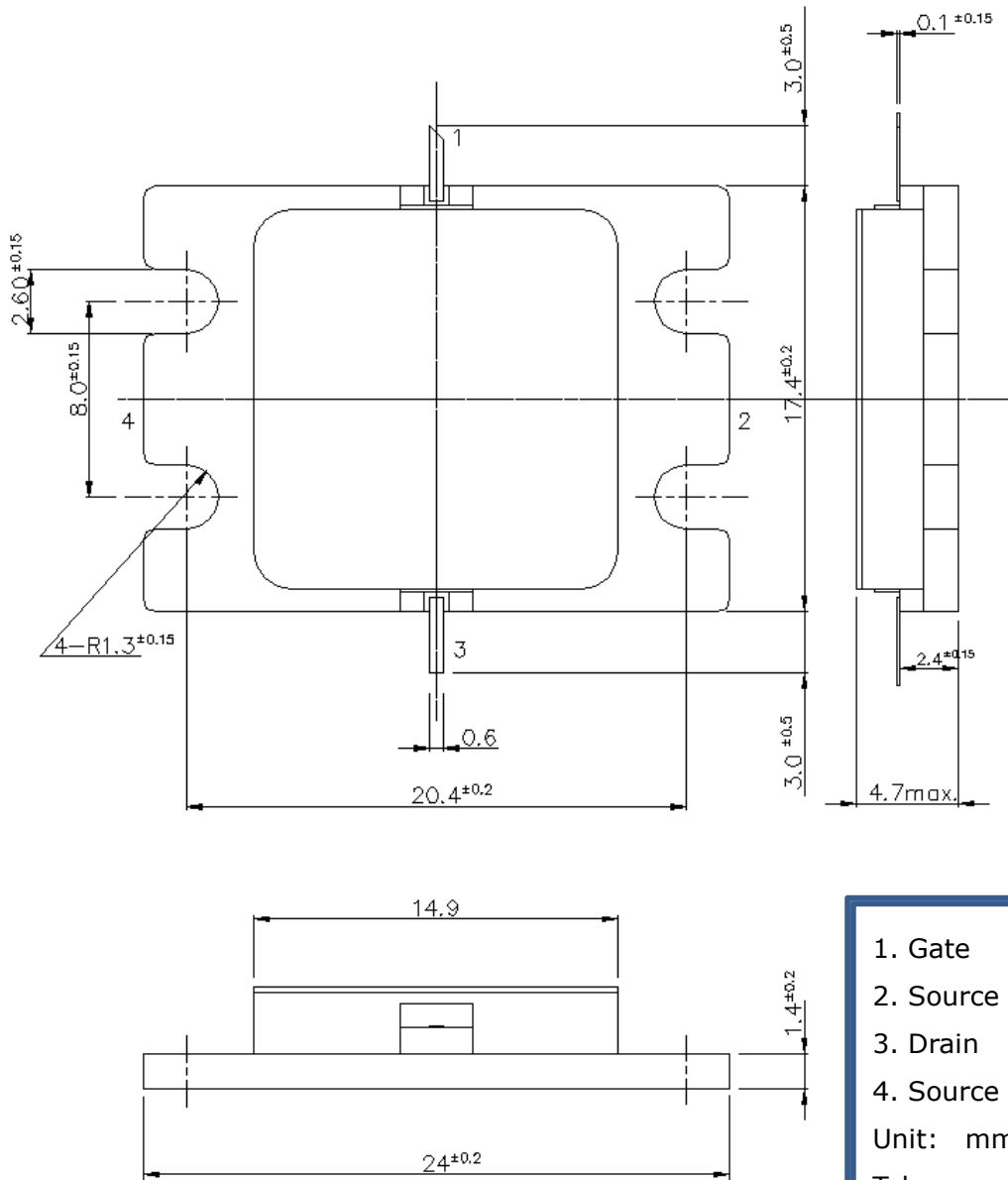
CASE STYLE	IK
RoHS Compliance	YES
ESD	Class 2
	2000V to <4000V

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

**● RF Characteristics**
**Output Power &  
Power Added Efficiency vs. Input Power**

$V_{DS}=50V$ ,  $I_{DS(DC)}=0.17A$   
 $PW=100\mu sec.$ , Duty=10%


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

**MTTF vs. Tch**


**● Package Outline**
**Case Style : IK**


1. Gate  
 2. Source  
 3. Drain  
 4. Source  
 Unit: mm  
 Tolerance:  $\pm$ 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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