

**■ Features**

- High Output Power:  $P_{sat}=55.3\text{dBm}$  (Typ.)
- High Gain:  $G_p=9.3\text{dB}$  (Typ.)
- High Power Added Efficiency:  $\text{PAE}=35\%$  (Typ.)
- Frequency Band: 9.3 to 9.5GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package


**■ Description**

The SGC9395-300A-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	$T_{sta}$	-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	$I_{GF}$	$R_g=10\text{ohm}$	$\leq 187.2$	mA
Reverse Gate Current	$I_{GR}$	$R_g=10\text{ohm}$	$\geq -13.6$	mA
Channel Temperature	$T_{ch}$		$< +200$	deg.C

**ELECTRICAL CHARACTERISTICS (Case Temperature  $T_c=25\text{ deg.C}$ )**

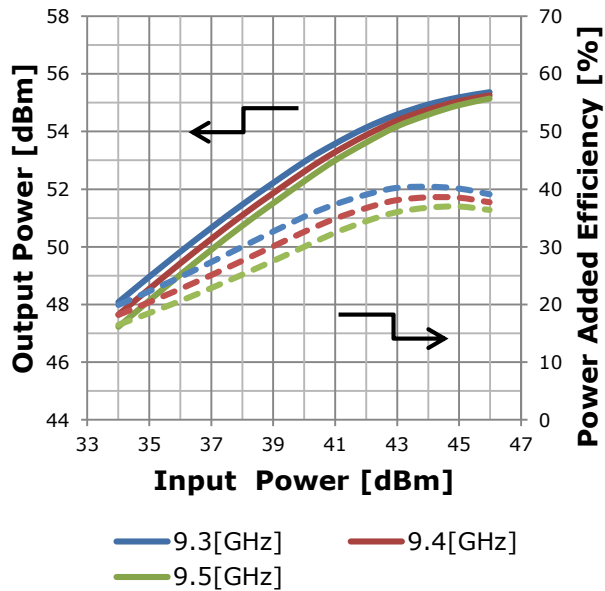
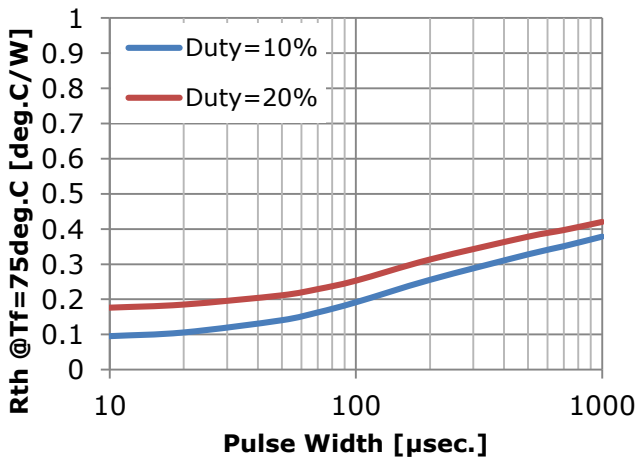
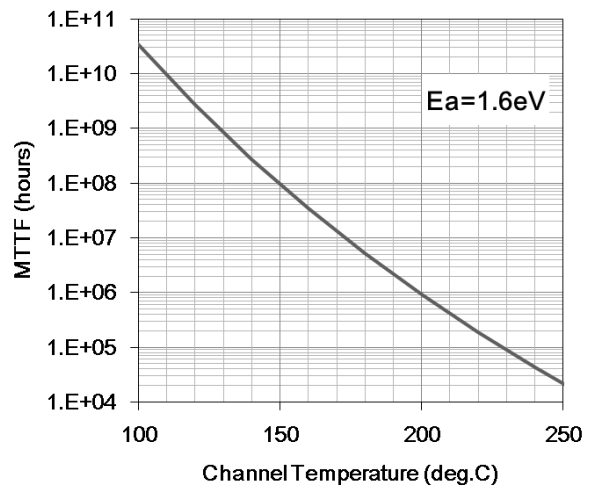
Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-off Voltage	$V_p$	$V_{DS}=50\text{V}, I_{DS}=20.0\text{mA}$	-	-4.5	-	V
Frequency Range	Freq.	$V_{DS}=50\text{V-typ.}$	9.3	-	9.5	GHz
Output Power	$P_{sat}$	$I_{DS(DC)}=1.0\text{A-typ.}$	54.3	55.3	-	dBm
Power Gain	$G_p$	Pulse Width=100μsec.	8.3	9.3	-	dB
Drain Current	$I_{DSR}$	Duty=10%	-	17.1	19.5	A
Power Added Efficiency	PAE	$\text{Pin}=46\text{dBm}$	-	35	-	%
Thermal Resistance	$R_{th}$	Channel to Case ( $P_{diss}=100\text{W, CW}$ )	-	0.7	0.8	deg.C/W

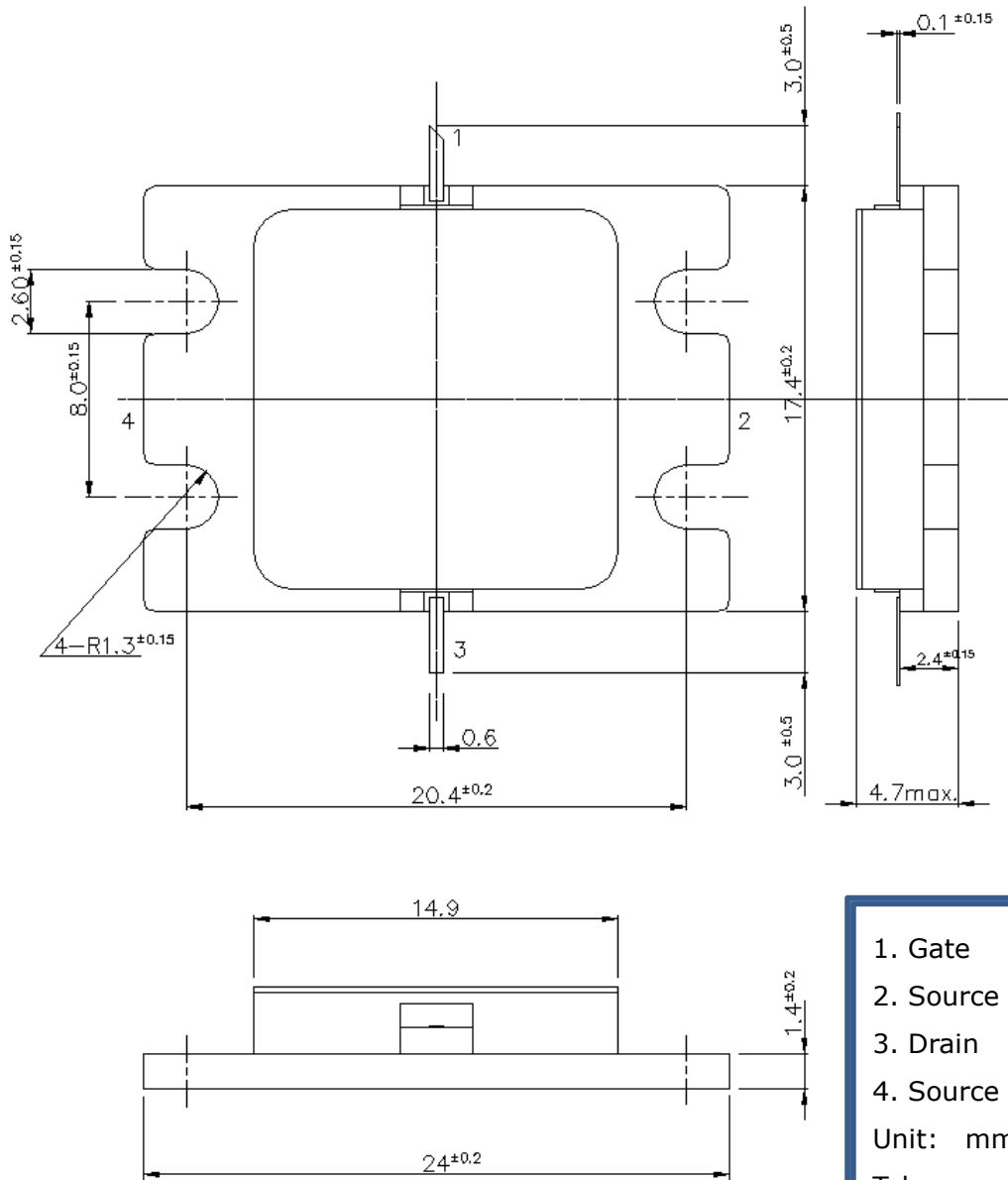
CASE STYLE	IK
RoHS Compliance	YES
ESD	Class 2
	2000V to <4000V

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

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

$V_{DS}=50V, I_{DS(DC)}=1.0A$   
 $PW=100\mu\text{sec.}, \text{Duty}=10\%$


**● Thermal Characteristics In Pulsed Operation**
**Rth vs. Pulse Width**

**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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