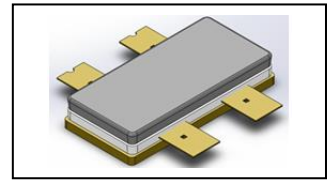




260W, 28V High Power RF LDMOS FETs

Description

The ITGH09260B4C is a 260W capable, internally matched, **single ended** 28V LDMOS designed for cellular and ISM application within 0.7-1GHz. It can be configured as Class AB or Class C for CW or pulsed CW



• Typical 791-821MHz 1 Carrier WCDMA Performance (on Innegration fixture with device soldered)

$V_{ds}= 28V, I_{dq}=1.55A, V_{gs} =2.68V$ WCDMA-1C-PAR10.5							
Freq (MHz)	Pout (dBm)	CCDF (dB)	Ppeak (dBm)	Ppeak (W)	ACPR (dBc)	Gain (dB)	Efficiency (%)
791	46	8.40	54.42	276.8	-41.4	19.8	24.9
806		8.27	54.29	268.4	-41.6	19.6	27.1
821		8.06	54.07	255.2	-40.3	19.8	29.7
791	45	8.93	53.94	247.5	-44.8	19.8	21.9
806		8.88	53.88	244.3	-44.5	19.6	23.7
821		8.70	53.70	234.7	-43.6	19.8	26.1
791	44	9.46	53.48	222.7	-46.6	19.8	19.3
806		9.39	53.38	218.0	-46.5	19.6	20.8
821		9.32	53.33	215.0	-46.0	19.8	22.9

Features

- High Efficiency and Linear Gain Operations
- Integrated ESD Protection
- Internally Matched for Ease of Use
- Large Positive and Negative Gate/Source Voltage Range for Improved Class C Operation
- Excellent thermal stability, low HCI drift
- Compliant to Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC

Figure 1: Pin Connection definition as single ended

Transparent top view (Backside grounding for source)

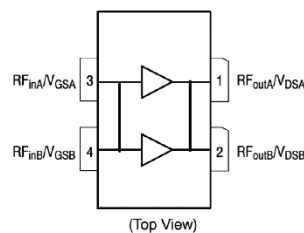




Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	65	Vdc
Gate--Source Voltage	V_{GS}	-10 to +10	Vdc
Operating Voltage	V_{DD}	+28	Vdc
Storage Temperature Range	T_{stg}	-65 to +150	°C
Case Operating Temperature	T_c	+150	°C
Operating Junction Temperature	T_j	+225	°C

Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case Tcase= 25°C, DC Power supply	$R_{\theta JC}$	0.35	°C/W

Table 3. ESD Protection Characteristics

Test Methodology	Class
Human Body Model (per JESD22--A114)	Class 2

Table 4. Electrical Characteristics (TA = 25 °C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
DC Characteristics					
Drain-Source Breakdown Voltage ($V_{GS}=0V$; $I_D=100\mu A$)	V_{DSS}	65	-----	-----	V
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28 V$, $V_{GS} = 0 V$)	I_{DSS}	-----	-----	10	μA
Gate--Source Leakage Current ($V_{GS} = 6 V$, $V_{DS} = 0 V$)	I_{GSS}	-----	-----	1	μA
Gate Threshold Voltage ($V_{DS} = 28V$, $I_D = 600 \mu A$)	$V_{GS(th)}$	-----	1.75	-----	V
Gate Quiescent Voltage ($V_{DD} = 28V$, $I_{DQ} = 1500 mA$, Measured in Functional Test)	$V_{GS(Q)}$		2.7		V

Load Mismatch (In Innogrations Test Fixture, 50 ohm system): $V_{DD} = 28 Vdc$, $I_{DQ} = 100 mA$, $f = 915MHz$

VSWR 10:1 at 260W pulse CW Output Power	No Device Degradation
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Figure 1 Efficiency and power gain as function of Pout at Vds=28V

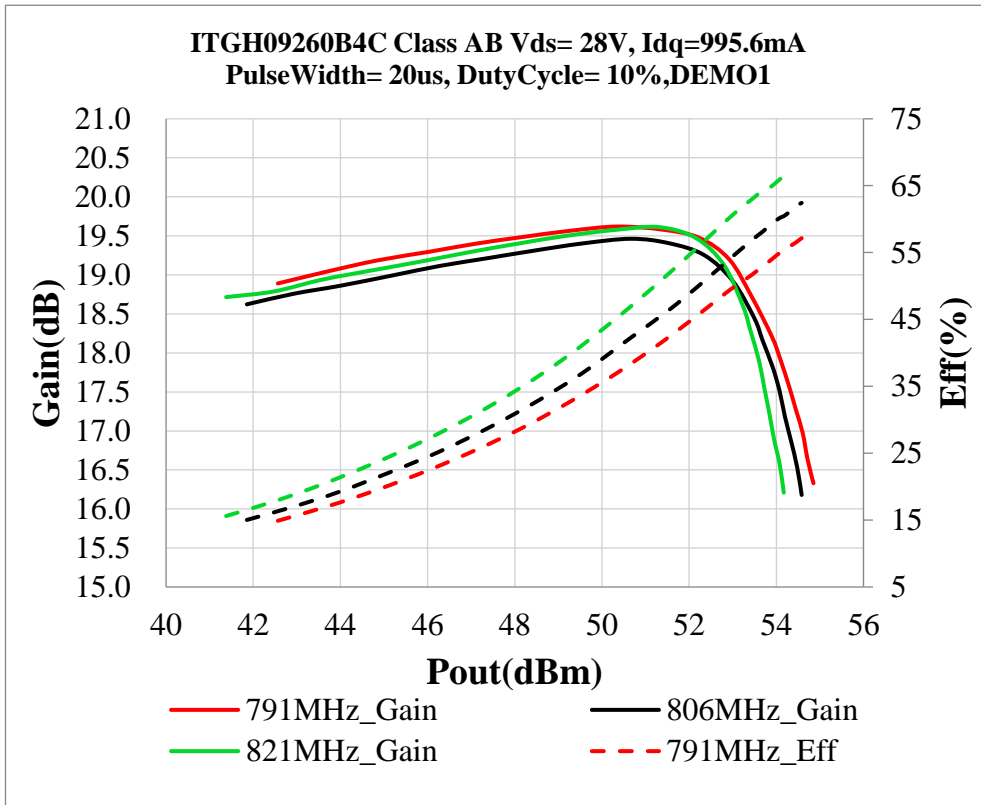


Figure 3: Network analyzer output, S11 and S21

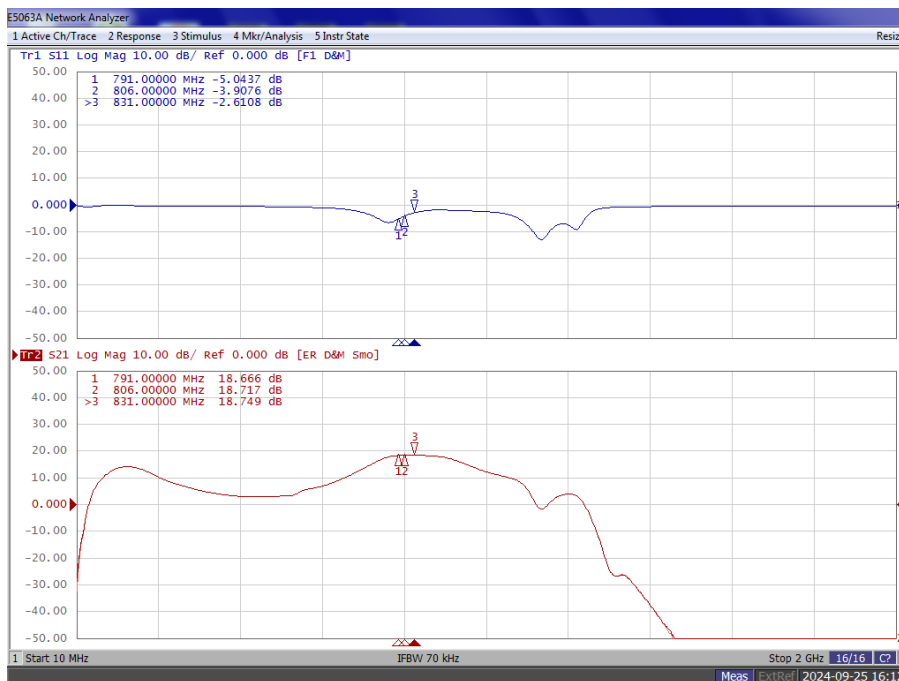


Figure 4: Layout picture (original Gerber file upon request)

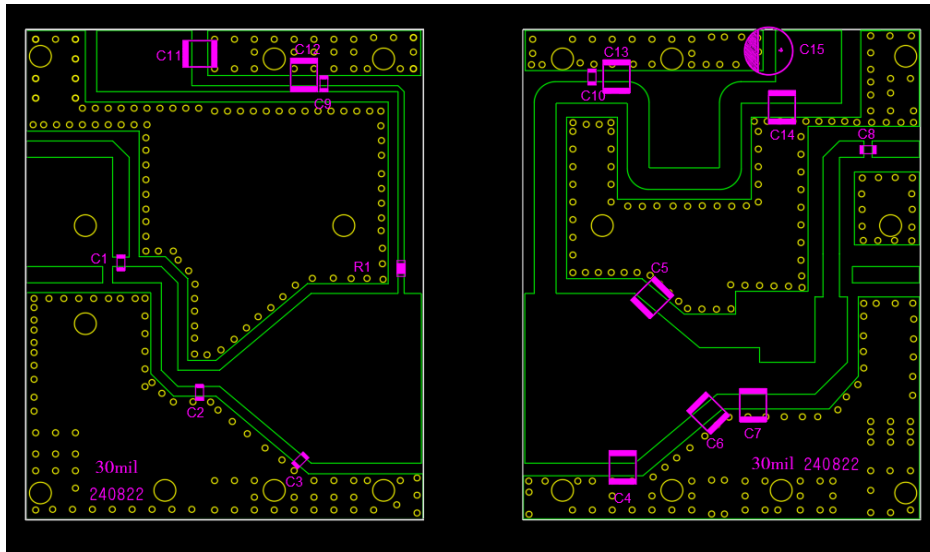
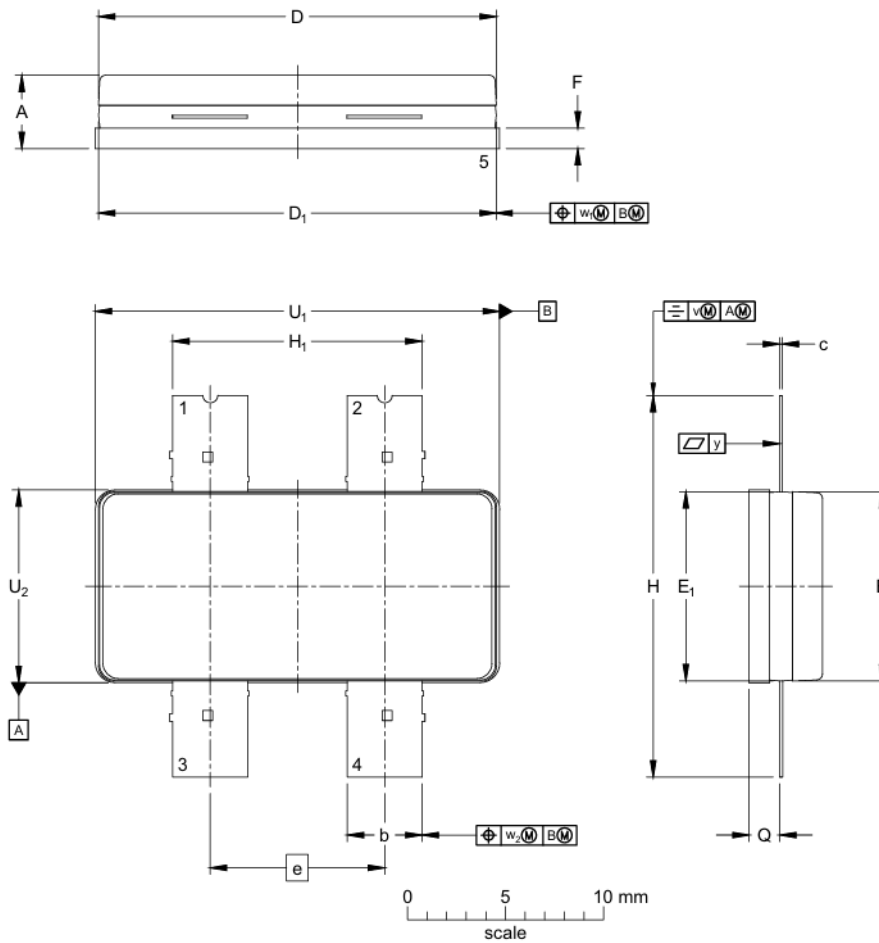


Table 5. List of components

Component	Value	Quantity
U1	ITGH09260B4C	1
C1 、 C8、 C9、 C10	68pF	4
C2、 C5	10pF	2
C3	12pF	1
C4	15pF	1
C6	8.2pF	1
C7	7.5pF	1
C11、 C12、 C13、 C14	10uF/63V	4
C15	470uF/63V	1
R1	10 Ω	1



Earless Flanged Plastic Air Cavity Package; 4 leads



Dimensions																		
Unit	A	b	c	D	D ₁	E	E ₁	e	F	H	H ₁	Q ⁽¹⁾	U ₁	U ₂	v	w ₁	w ₂	y
mm	max	4.01	3.91	0.18	20.42	20.37	9.80	9.75	1.14	19.53	12.83	1.68	20.70	9.91	0.50	0.50	0.50	0.10
	nom							8.89										
	min	3.40	3.71	0.13	20.12	20.17	9.50	9.55	0.94	19.33	12.57	1.45	20.50	9.70				

Table 5. Document revision history

Date	Revision	Datasheet Status
2024/9/25	V1	Preliminary Datasheet Creation

Application data based on ZYX-24-62

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