



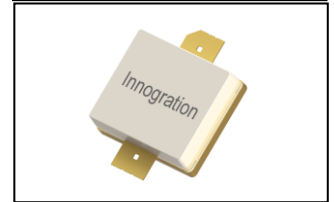
100W,12.5V High Power RF LDMOS FETs

ITGH05350A2C

Description

The ITGH05350A2C is a 100watt, highly rugged, unmatched LDMOS FET, designed for commercial and industrial applications within HF/VHF. It can be used in linear or saturated power amplifier, for CW and pulsed signal, and any modulation format.

Mounted on additional eared flange, it can be drop-in replacement of legacy Mitsubishi's RD100HHF1C



- Typical HF CW Performance (On Innegration fixture with device soldered).
Idq=1000mA, CW, 30MHz

Voltage (V)	Pin (dBm)	Pout (dBm)	Pout (W)	ID (A)	Gain (dB)	Eff (%)	2nd	3rd
12.5	27.8	50.37	109	11.42	22.6	76.3	-20	-30
13.6	27.8	50.98	125	12.23	23.2	75.3	-20	-30

Features

- High Efficiency and Linear Gain Operations
- Integrated ESD Protection
- Excellent thermal stability, low HCI drift
- Large Positive and Negative Gate/Source Voltage Range for Improved Class C Operation
- Pb-free, RoHS-compliant

Suitable Applications

- HF to VHF Land mobile radio (LMR)
- ISM applications

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DS}	+65	Vdc
Gate--Source Voltage	V_{GS}	-10 to +10	Vdc
Operating Voltage	V_{DD}	+24	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 $T_c = 85^\circ\text{C}, T_j = 200^\circ\text{C}, \text{DC test}$	$R_{\theta JC}$	0.35	°C/W

Table 3. ESD Protection Characteristics

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

Table 4. Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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DC Characteristics



Drain-Source Voltage $V_{GS}=0, I_{DS}=100\mu A$	$V_{(BR)DSS}$		65		V
Zero Gate Voltage Drain Leakage Current $(V_{DS} = 13.6V, V_{GS} = 0V)$	I_{DSS}	—	—	1	μA
Gate--Source Leakage Current $(V_{GS} = 9V, V_{DS} = 0V)$	I_{GSS}	—	—	1	μA
Gate Threshold Voltage $(V_{DS} = 13.6V, I_D = 600\mu A)$	$V_{GS(th)}$	—	2	—	V
Gate Quiescent Voltage $(V_{DD} = 13.6V, I_D = 100mA, \text{Measured in Functional Test})$	$V_{GS(O)}$	—	2.67	—	V

Load Mismatch (In Innogrations Test Fixture, 50 ohm system): $V_{DD} = 12.5V_{dc}, I_{DQ} = 1000\text{ mA}, f = 175\text{ MHz}$

VSWR 65:1 at 100W pulse CW Output Power	No Device Degradation
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30MHz

Reference Circuit of Test Fixture Assembly Diagram

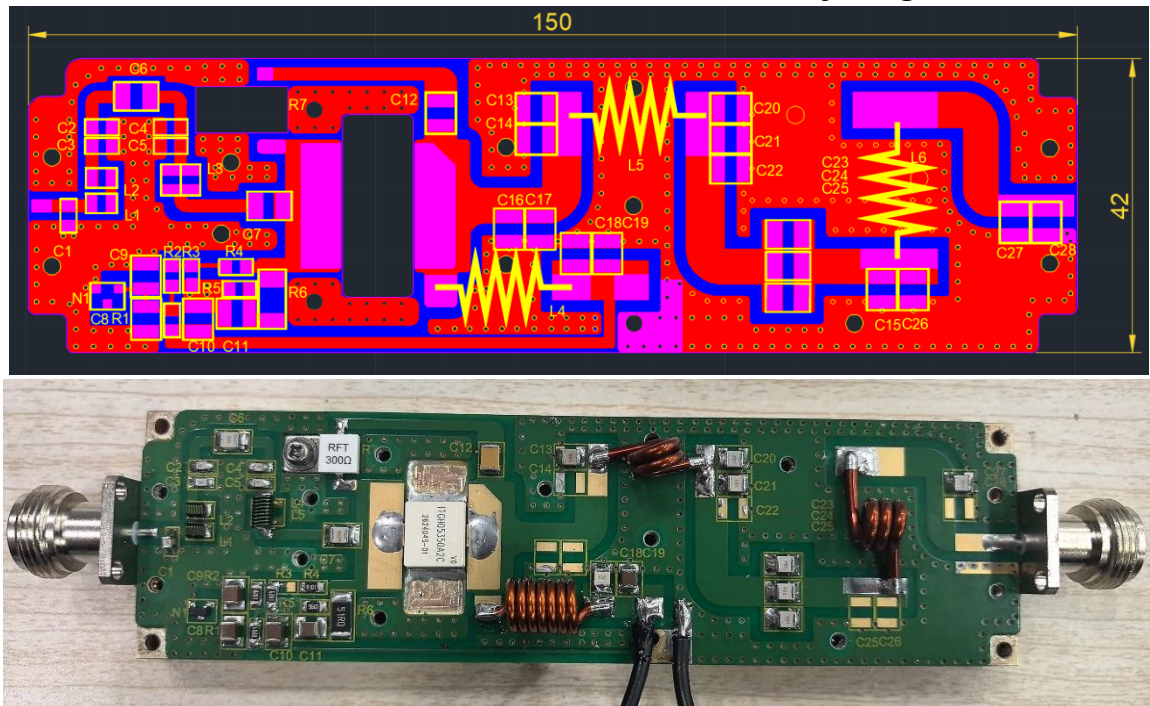


Figure 1. Test Circuit Component Layout

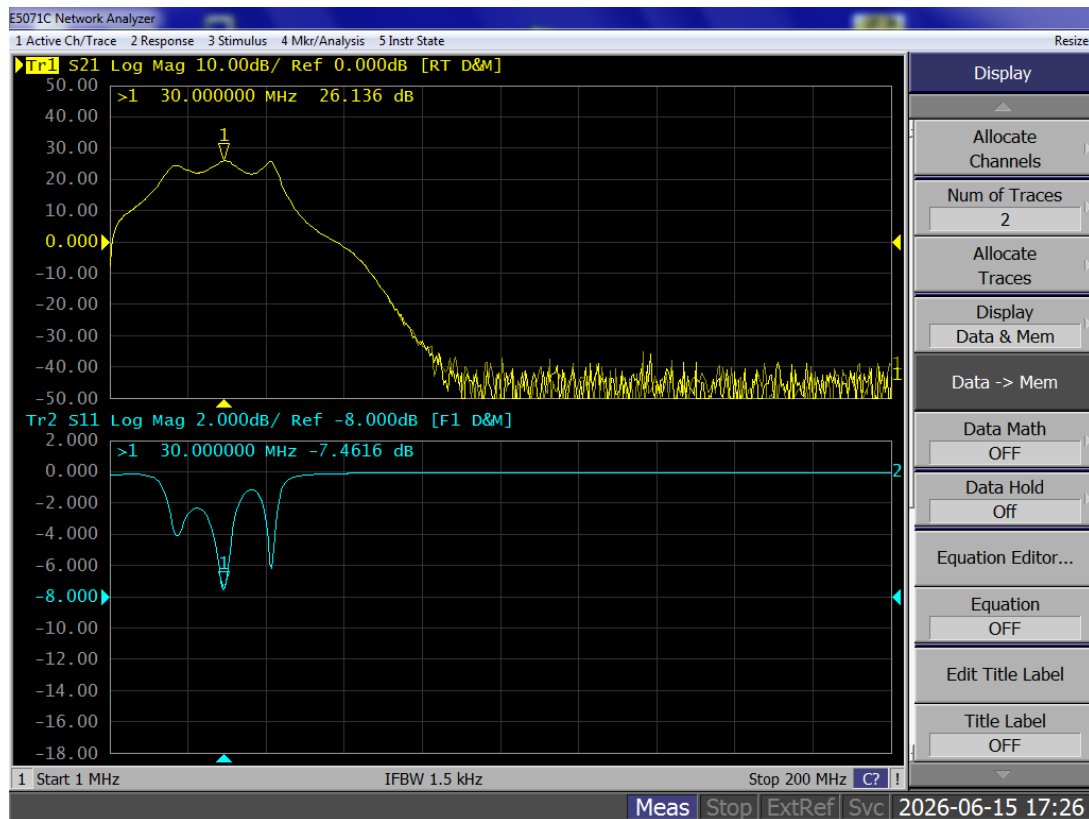
Table 5. Test Circuit Component Designations and Values

Component	Description	Suggested Manufacturer
C1	480pF MQ400805	
C2~C3	100pF MQ400805	
C4~C5	120pF MQ400805	
C6~C7	1000pF MQ301111	



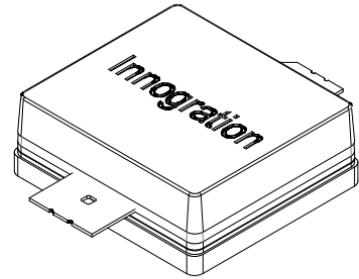
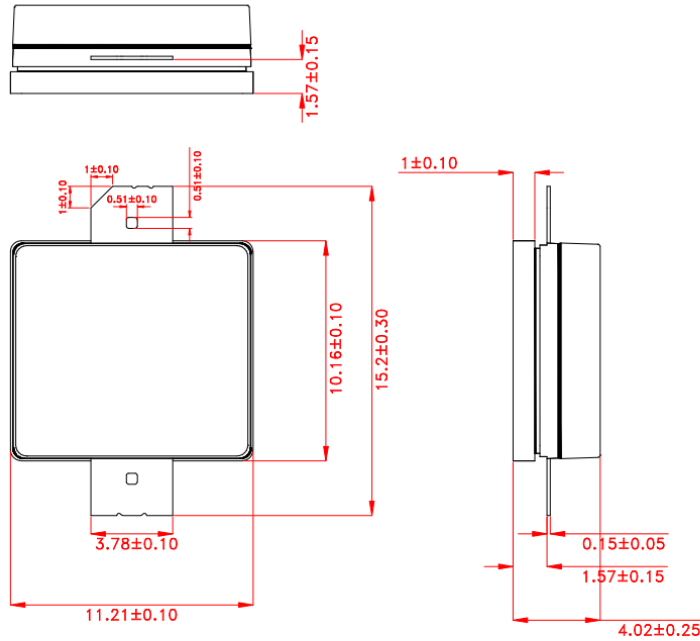
C23~C25	750pF	MQ301111	
C12	10nF	1210	
C8~C11,C18~C19	10uF	1210	
C14~C17,C22,C22,C28	NC		
C13	560pF	MQ101111	
C20	390pF	MQ101111	
C21	150pF	MQ101111	
C27	300pF	MQ101111	
L1	43nH	1515SQ-82NGEC	///
L2	43nH	1515SQ-82NGEC	//
L3	82nH	1515SQ-82NGEC	///
L5	2mm wire , 5mm inner diameter, 2Turns		DIY
L6	2mm wire , 4.5mm inner diameter, 2Turns		DIY
L4	1.5mm wire , 5mm inner diameter, 7Turns		DIY
R1,R2	8.2K Ω , 1206		///
R4	9.1K Ω , 1206		///
R3	6.2K Ω , 1206		///
R5	56K Ω , 1206		///
R6	51 Ω , 2512		///

Figure 2: Network analyzer output S21/S11





Package Dimensions



Unit:mm

Tolerance ±0.10mm,Except as Noted.

Revision history

Table 7. Document revision history

Date	Revision	Datasheet Status
2026/6/15	Rev 1.0	Preliminary Datasheet

Application data based on SYX-26-33

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