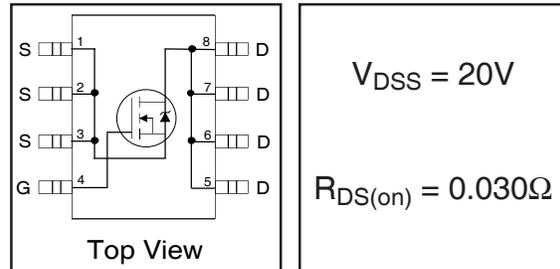


IRF7607PbF

HEXFET[®] Power MOSFET

- Trench Technology
- Ultra Low On-Resistance
- N-Channel MOSFET
- Very Small SOIC Package
- Low Profile (<1.1mm)
- Available in Tape & Reel
- Lead-Free

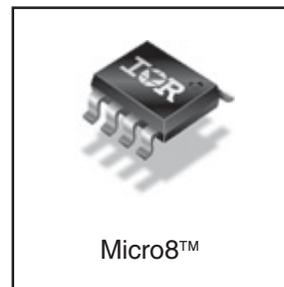


$V_{DSS} = 20V$
 $R_{DS(on)} = 0.030\Omega$

Description

New trench HEXFET[®] power MOSFETs from International Rectifier utilize advanced processing techniques to achieve extremely low on-resistance per silicon area. This benefit, combined with the ruggedized device design that HEXFET power MOSFETs are well known for, provides the designer with an extremely efficient and reliable device for use in a wide variety of applications.

The new Micro8[™] package has half the footprint area of the standard SO-8. This makes the Micro8 an ideal package for applications where printed circuit board space is at a premium. The low profile (<1.1 mm) of the Micro8 will allow it to fit easily into extremely thin application environments such as portable electronics and PCMCIA cards.



Absolute Maximum Ratings

	Parameter	Max.	Units
V_{DS}	Drain- Source Voltage	20	V
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 4.5V$	6.5	A
$I_D @ T_A = 70^\circ C$	Continuous Drain Current, $V_{GS} @ 4.5V$	5.2	
I_{DM}	Pulsed Drain Current ①	50	
$P_D @ T_A = 25^\circ C$	Power Dissipation	1.8	W
$P_D @ T_A = 70^\circ C$	Power Dissipation	1.2	
	Linear Derating Factor	0.014	W/°C
V_{GS}	Gate-to-Source Voltage	± 12	V
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to + 150	°C

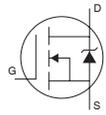
Thermal Resistance

	Parameter	Max.	Units
$R_{\theta JA}$	Maximum Junction-to-Ambient ^②	70	°C/W

Electrical Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	20	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.016	—	V/ $^\circ\text{C}$	Reference to $25^\circ\text{C}, I_D = 1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	—	0.030	Ω	$V_{GS} = 4.5V, I_D = 6.5A$ ②
		—	—	0.045		$V_{GS} = 2.5V, I_D = 5.2A$ ②
$V_{GS(th)}$	Gate Threshold Voltage	0.60	—	1.2	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
g_{fs}	Forward Transconductance	13	—	—	S	$V_{DS} = 10V, I_D = 6.5A$
I_{DSS}	Drain-to-Source Leakage Current	—	—	1.0	μA	$V_{DS} = 16V, V_{GS} = 0V$
		—	—	25		$V_{DS} = 16V, V_{GS} = 0V, T_J = 70^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	$V_{GS} = -12V$
	Gate-to-Source Reverse Leakage	—	—	100		$V_{GS} = 12V$
Q_g	Total Gate Charge	—	15	22	nC	$I_D = 6.5A$
Q_{gs}	Gate-to-Source Charge	—	2.2	3.3		$V_{DS} = 10V$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	3.5	5.3		$V_{GS} = 5.0V$ ②
$t_{d(on)}$	Turn-On Delay Time	—	8.5	—	ns	$V_{DD} = 10V$
t_r	Rise Time	—	11	—		$I_D = 1.0A$
$t_{d(off)}$	Turn-Off Delay Time	—	36	—		$R_G = 6.0\Omega$
t_f	Fall Time	—	16	—		$R_D = 10\Omega$ ②
C_{iss}	Input Capacitance	—	1310	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	150	—		$V_{DS} = 15V$
C_{rss}	Reverse Transfer Capacitance	—	36	—		$f = 1.0\text{MHz}$

Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	1.8	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	50		
V_{SD}	Diode Forward Voltage	—	—	1.2	V	$T_J = 25^\circ\text{C}, I_S = 1.7A, V_{GS} = 0V$ ②
t_{rr}	Reverse Recovery Time	—	19	29	ns	$T_J = 25^\circ\text{C}, I_F = 1.7A$
Q_{rr}	Reverse Recovery Charge	—	13	20	nC	$di/dt = 100A/\mu s$ ②

Notes:

① Repetitive rating; pulse width limited by max. junction temperature. (See fig. 11)

② Pulse width $\leq 400\mu s$; duty cycle $\leq 2\%$.

③ Surface mounted on FR-4 board, $t \leq 5\text{sec}$.

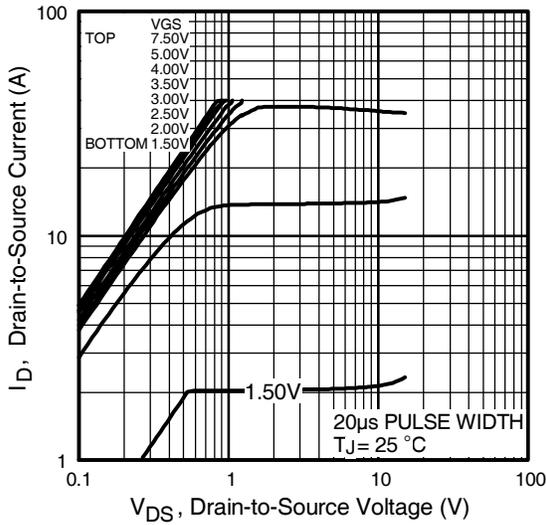


Fig 1. Typical Output Characteristics

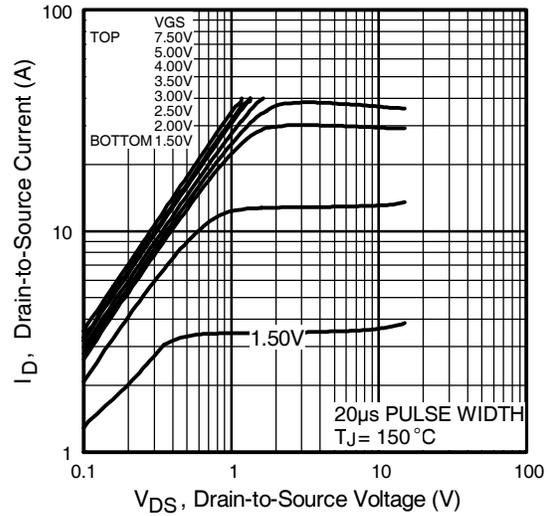


Fig 2. Typical Output Characteristics

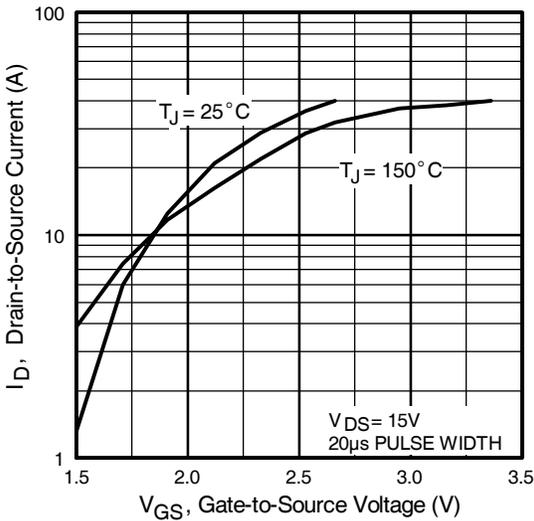


Fig 3. Typical Transfer Characteristics

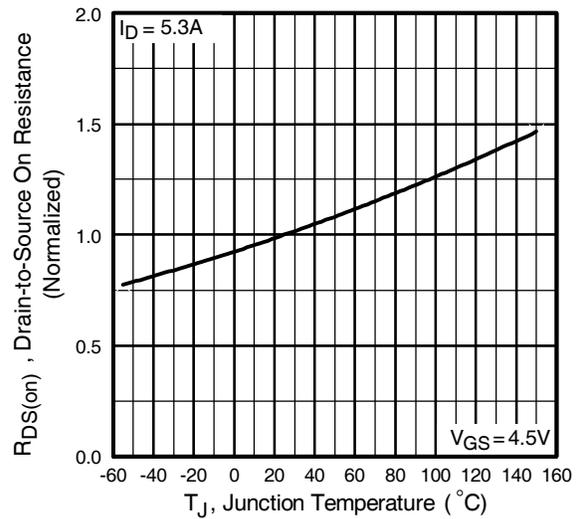


Fig 4. Normalized On-Resistance Vs. Temperature

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International
IR Rectifier

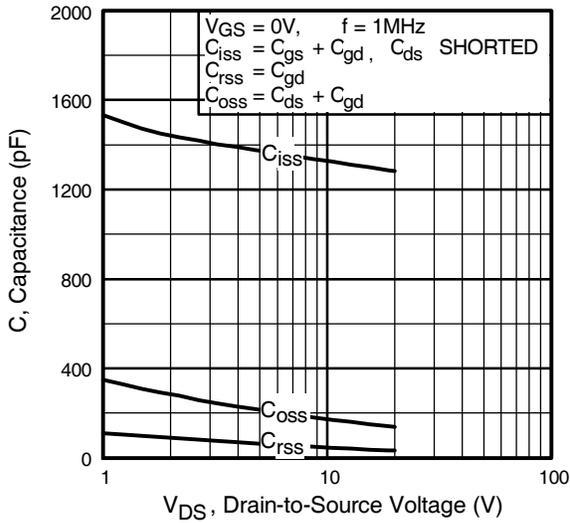


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

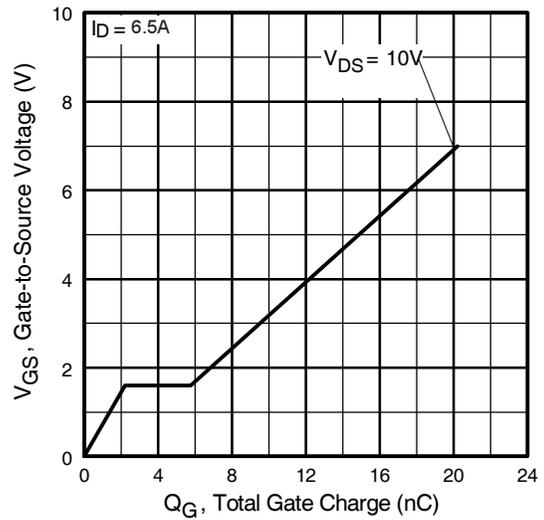


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

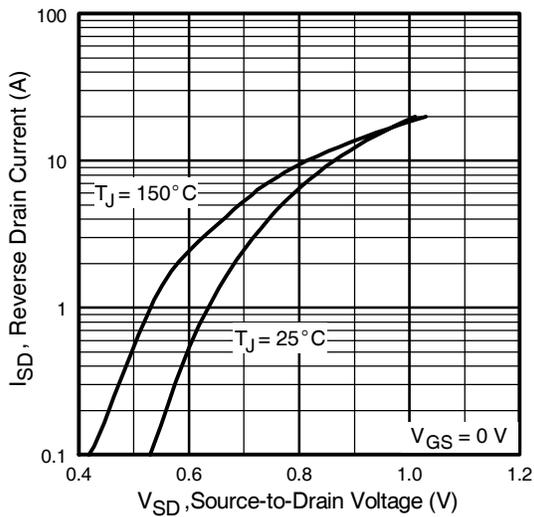


Fig 7. Typical Source-Drain Diode Forward Voltage

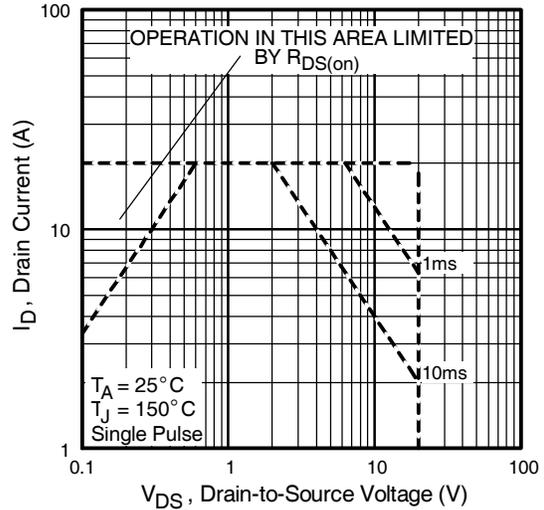


Fig 8. Maximum Safe Operating Area

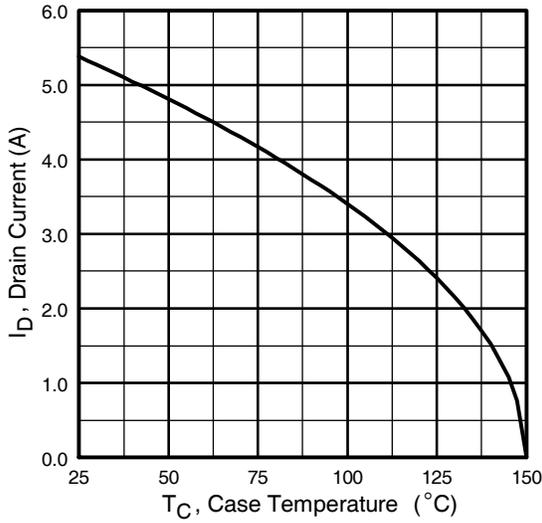


Fig 9. Maximum Drain Current Vs. Case Temperature

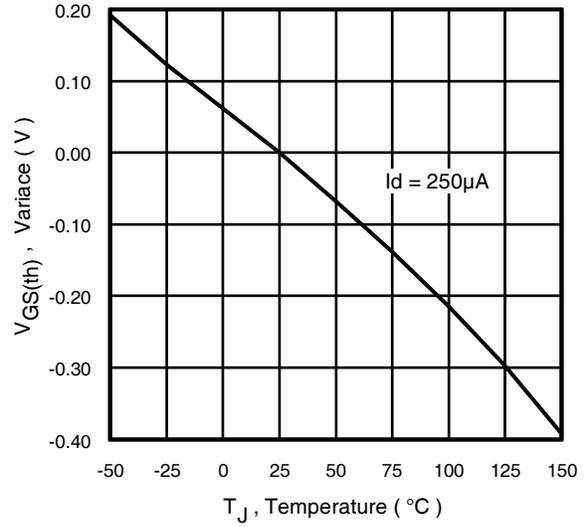


Fig 10. Typical $V_{GS(th)}$ Variance Vs. Junction Temperature

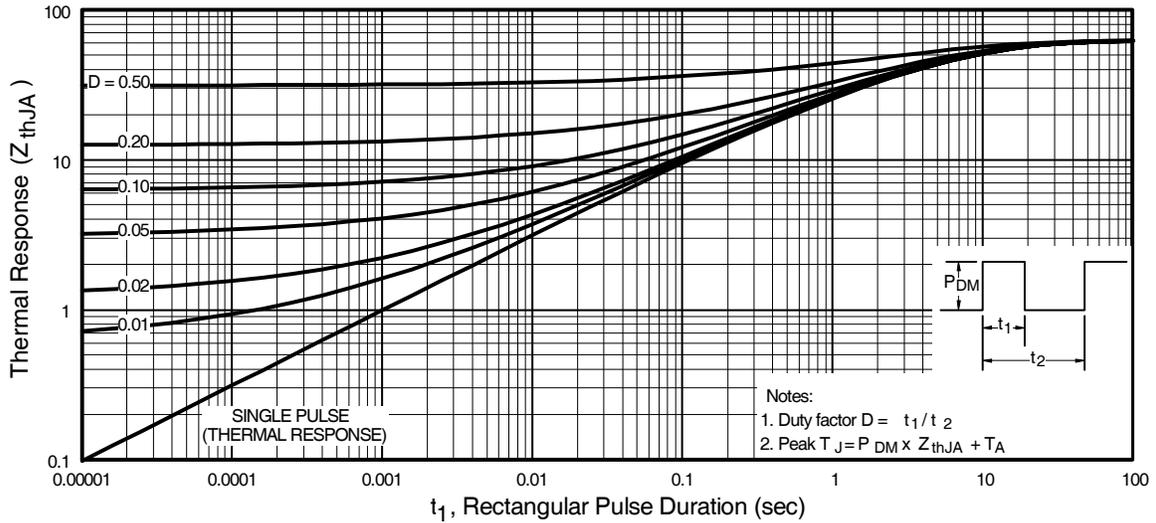


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

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International
IR Rectifier

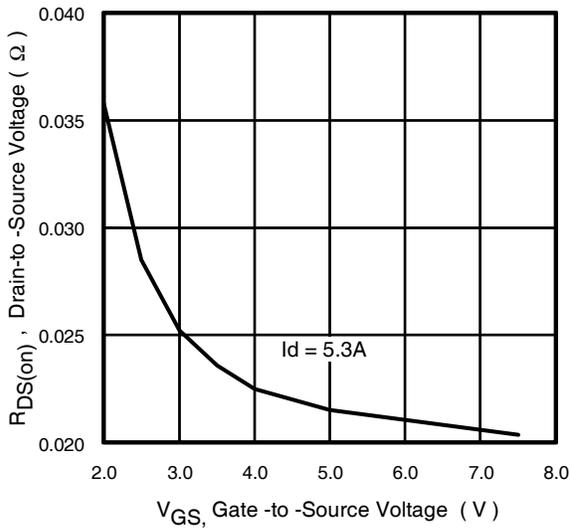


Fig 12. Typical On-Resistance Vs. Gate Voltage

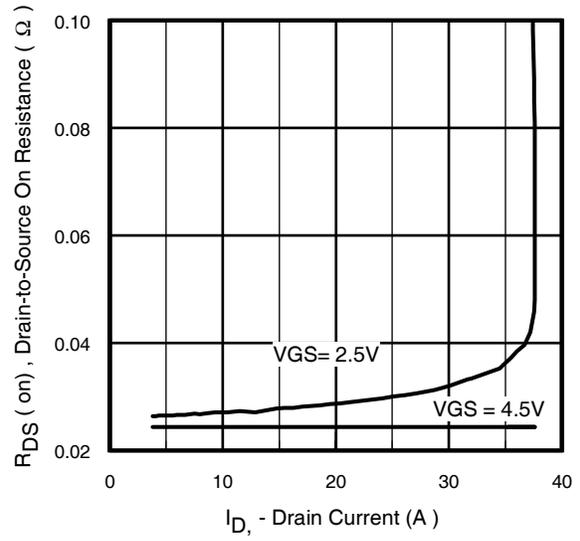
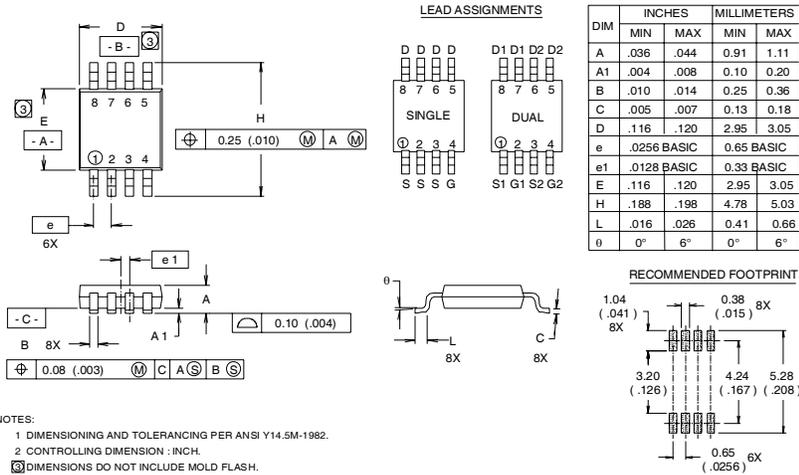


Fig 13. Typical On-Resistance Vs. Drain Current

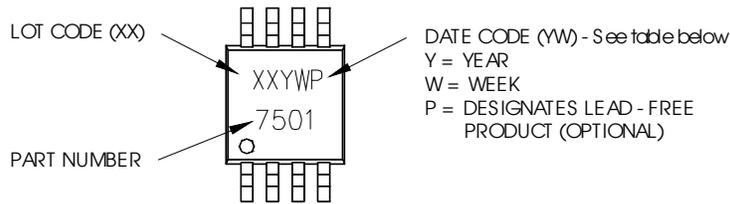
Micro8 Package Outline

Dimensions are shown in millimeters (inches)



Micro8 Part Marking Information

EXAMPLE: THIS IS AN IRF7501



WW = (1-26) IF PRECEDED BY LAST DIGIT OF CALENDAR YEAR

YEAR	Y	WORK WEEK	W
2001	1	01	A
2002	2	02	B
2003	3	03	C
2004	4	04	D
2005	5		
2006	6		
2007	7		
2008	8		
2009	9		
2010	0	24	X
		25	Y
		26	Z

WW = (27-52) IF PRECEDED BY A LETTER

YEAR	Y	WORK WEEK	W
2001	A	27	A
2002	B	28	B
2003	C	29	C
2004	D	30	D
2005	E		
2006	F		
2007	G		
2008	H		
2009	J		
2010	K	50	X
		51	Y
		52	Z



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.