

Small Signal Product

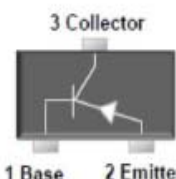
350mW, PNP Small Signal Transistor

FEATURES

- Epitaxial planar die construction
- Surface device type mounting
- Moisture sensitivity level 1
- Matte Tin (Sn) lead finish with Nickel (Ni) underplate
- Pb free version and RoHS compliant
- Packing code with suffix "G" means green compound (halogen-free)



SOT-23



MECHANICAL DATA

- Case: SOT- 23, molded plastic
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed: 260°C/10s
- Weight: 0.008g (approximately)
- Marking Code: 2A

MAXIMUM RATINGS AND ELECTRICAL CHARACTERSTICS (T _A =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation	P _D	350	mW
Collector-Base Voltage	V _{CBO}	-40	V
Collector-Emitter Voltage	V _{CEO}	-40	V
Emitter-Base Voltage	V _{EBO}	-5	V
Collector Current	I _C	-200	mA
Thermal Resistance Junction-Ambient	R _{θJA}	357	°C/W
Junction and Storage Temperature Range	T _J , T _{STG}	-55 to + 150	°C

Notes:1. Valid provided that electrodes are kept at ambient temperature

PARAMETER			SYMBOL	MIN	MAX	UNIT
Collector-Base Breakdown Voltage	I _C = 10 μA	I _E = 0	V _{(BR)CBO}	-40	-	V
Collector-Emitter Breakdown Voltage	I _C = -1 mA	I _B = 0	V _{(BR)CEO}	-40	-	V
Emitter-Base Breakdown Voltage	I _E = -10 μA	I _C = 0	V _{(BR)EBO}	-5	-	V
Collector Base Cut-off Current	V _{CB} = -40 V		I _{CBO}	-	-100	nA
Emitter Base Cut-off Current	V _{EB} = -6 V		I _{EBO}	-	-50	nA
DC Current Gain	V _{CE} = -1 V	I _C = -0.1 mA	h _{FE}	60	300	
	V _{CE} = -1 V	I _C = -1 mA		80		
	V _{CE} = -1 V	I _C = -10 mA		100		
	V _{CE} = -1 V	I _C = -50 mA		60		
	V _{CE} = -1 V	I _C = -100 mA		30		
Collector-Emitter Saturation Voltage	I _C = -10 mA	I _B = -1 mA	V _{CE(sat)}	-	-0.25	V
	I _C = -50 mA	I _B = -5 mA		-	-0.4	
Base-Emitter Saturation Voltage	I _C = -10 mA	I _B = -1 mA	V _{BE(sat)}	-0.65	-0.85	V
	I _C = -50 mA	I _B = -5 mA		-	-0.95	
Gain-Bandwidth Product	V _{CE} = -20 V	I _C = -10 mA	f = 100MHz	f _T	250	MHz
Output Capacitance	V _{CB} = -5 V	I _E = 0	f = 1MHz	C _{obo}	4.5	pF
Delay time	V _{CC} = -3 V	V _{BE} = -0.5 V	I _C = -10 mA	t _d	35	ns
Rise time		I _{B1} = -1.0 mA		t _r	35	ns
Storage time	V _{CC} = -3 V	I _C = -10 mA		t _s	225	ns
Fall time		I _{B1} = I _{B2} = -1.0 mA		t _f	75	ns

Small Signal Product

RATINGS AND CHARACTERISTICS CURVES

($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig. 1 Capacitance

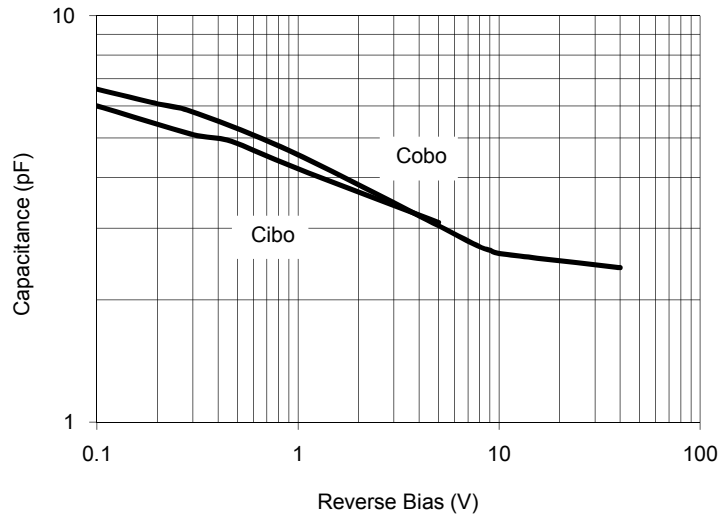


Fig. 2 Charge Data

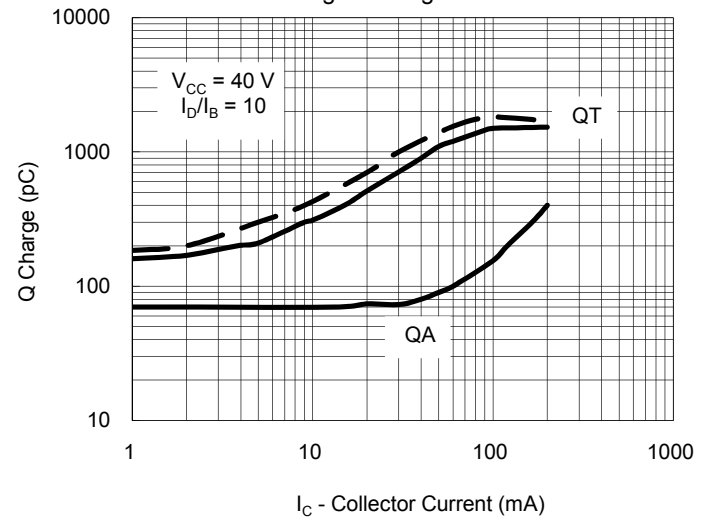


Fig. 3 Turn - On Time

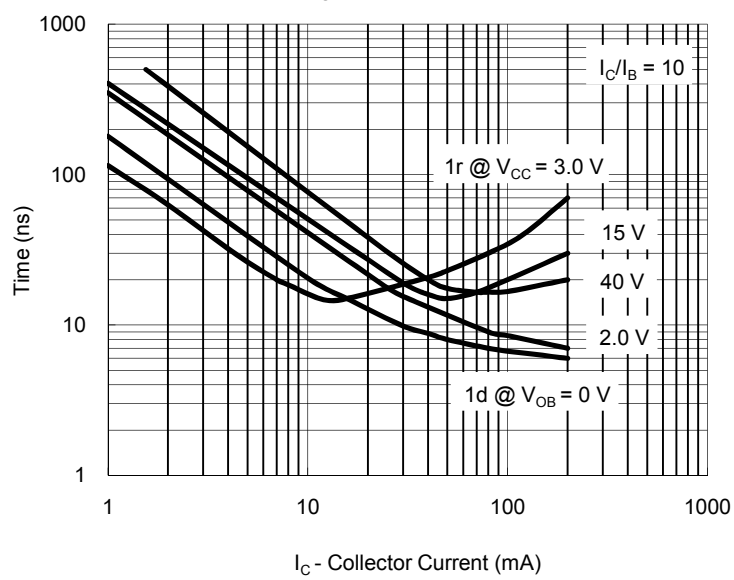


Fig. 4 Fall Time

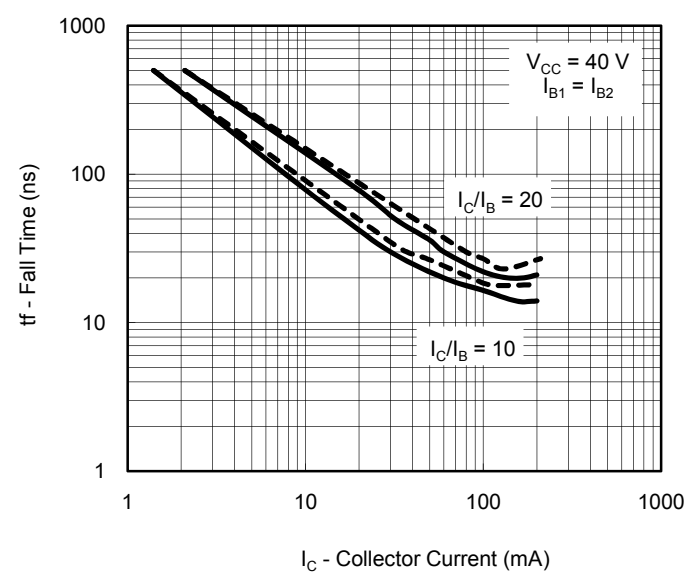


Fig. 5 Noise Figure VS. Frequency

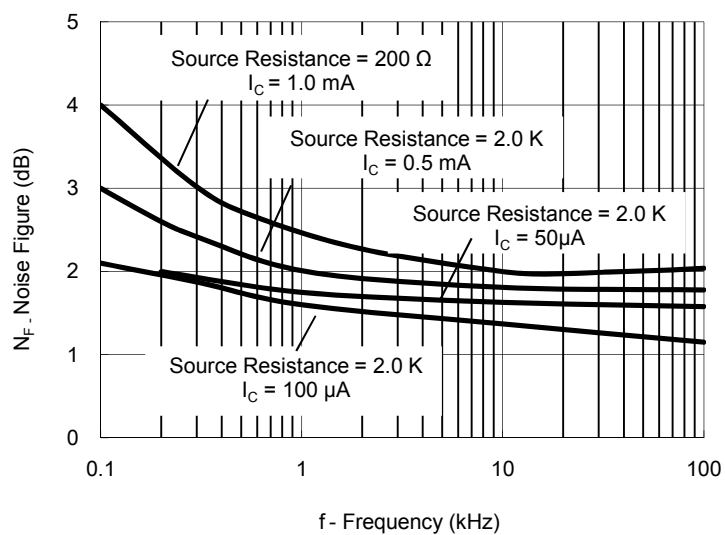
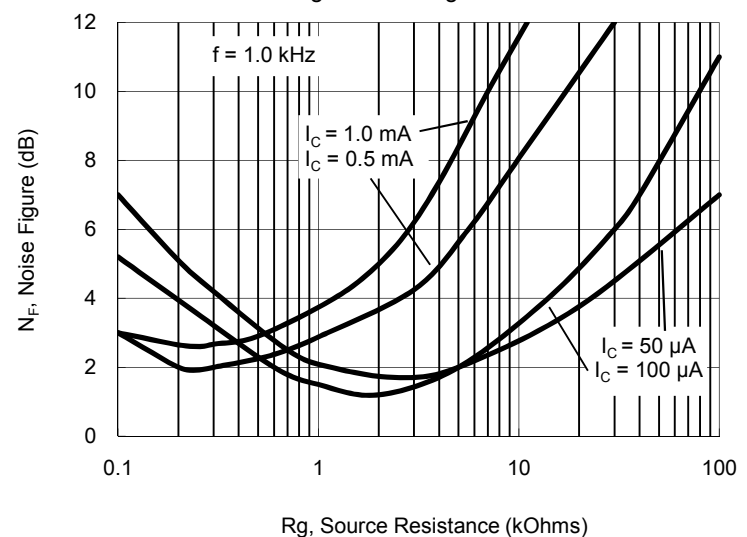


Fig. 6 Noise Figure VS. Source



Small Signal Product

h Parameters ($V_{CE} = -10 V_{DC}$, $f = 1.0 \text{ kHz}$, $T_A = 25^\circ\text{C}$)

Fig. 7 Current Gain

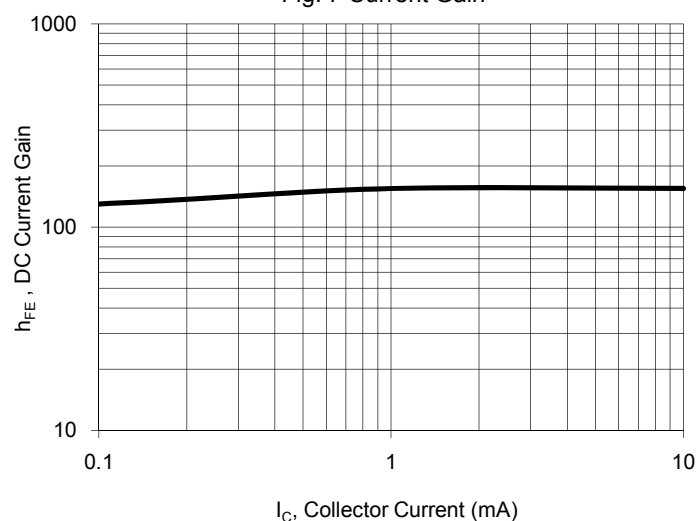


Fig. 8 Output Admittance

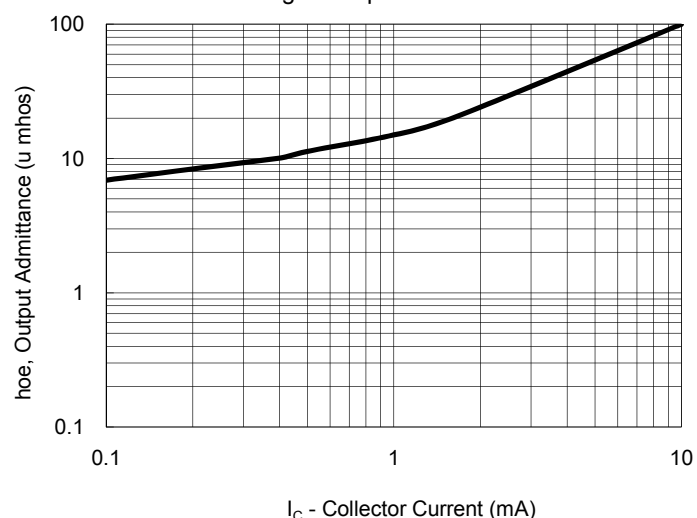


Fig. 9 Input Impedance

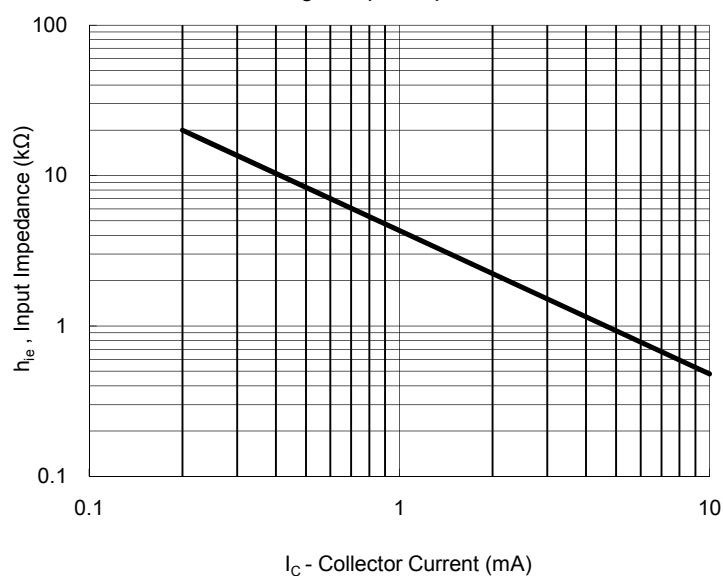


Fig. 10 Voltage Feedback Ratio

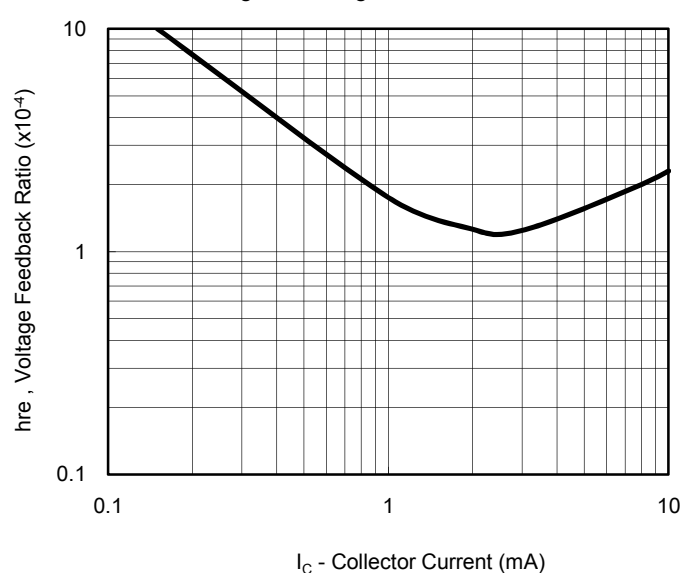


Fig. 11 "ON" Voltages

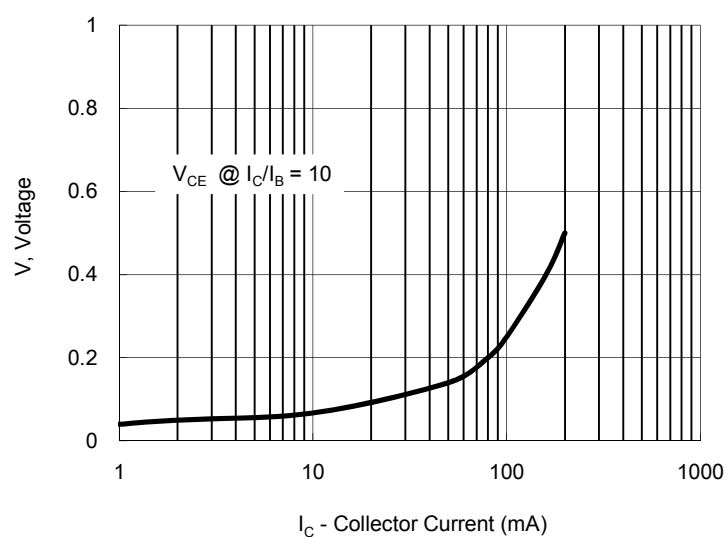
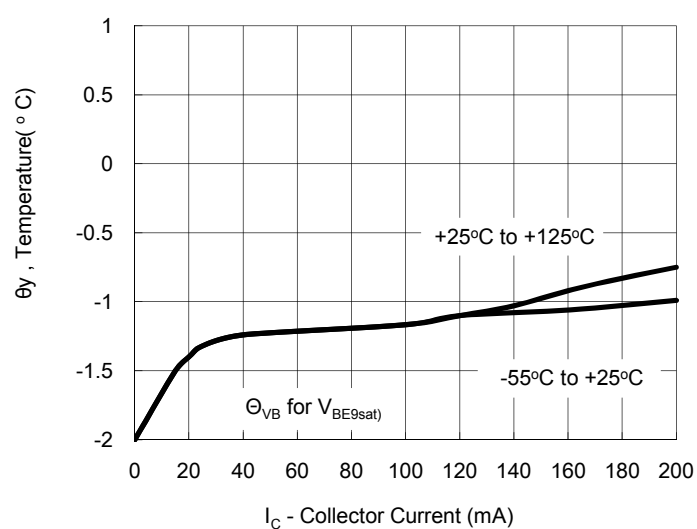


Fig. 12 Temperature Coefficients



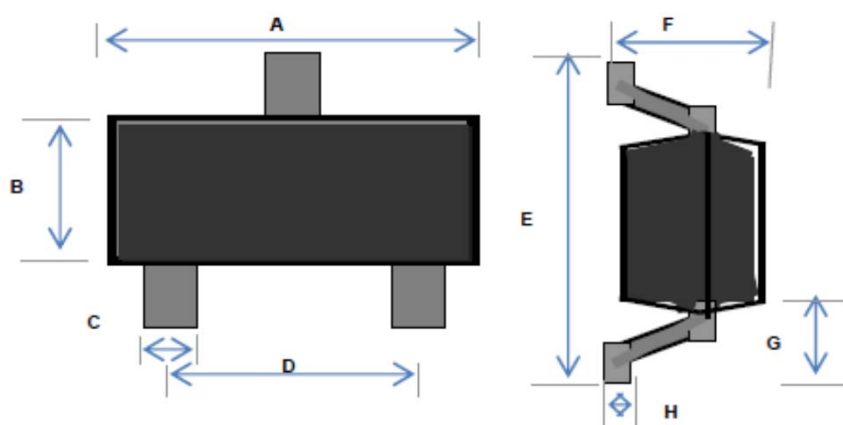
Small Signal Product

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX (Note 1)	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
MMBT3906	-xx	RF	G	SOT-23	3K / 7" Reel
		R5			10K / 13" Reel

Note 1: Part No. Suffix „-xx “ would be used for special requirement

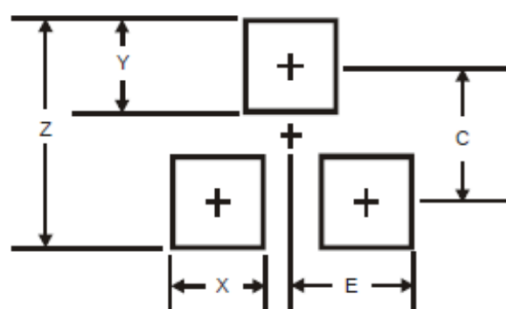
EXAMPLE					
PREFERRED P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
MMBT3906 RF	MMBT3906		RF		Multiple manufacture source
MMBT3906 RFG	MMBT3906		RF	G	Multiple manufacture source Green compound
MMBT3906-D0 RFG	MMBT3906	-D0	RF	G	Defined manufacture source Green compound
MMBT3906-B0 RFG	MMBT3906	-B0	RF	G	Defined manufacture source Green compound

PACKAGE OUTLINE DIMENSIONS



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

SUGGEST PAD LAYOUT



DIM	Unit (mm)	Unit (inch)
	TYP	TYP
Z	2.8	0.11
X	0.7	0.03
Y	0.9	0.04
C	1.9	0.07
E	1.0	0.04

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9