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TOIREX

XP152A12C0MR-G

ETR1121_003

Power MOSFET

■GENERAL DESCRIPTION

The XP152A12C0MR-G is a P-channel Power MOSFET with low on-state resistance and ultra high-speed switching characteristics.

Because high-speed switching is possible, the IC can be efficiently set thereby saving energy.

In order to counter static, a gate protect diode is built-in.

The small SOT-23 package makes high density mounting possible.

■APPLICATIONS

- Notebook PCs
- Cellular and portable phones
- On-board power supplies
- Li-ion battery systems

■FEATURES

Low On-State Resistance : $Rds(on) = 0.3 \Omega@Vgs = -4.5V$

: Rds(on) = 0.5Ω @ Vgs = -2.5V

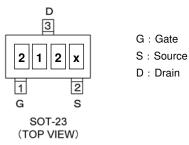
Ultra High-Speed Switching
Gate Protect Diode Built-in
Driving Voltage : -2.5V
P-Channel Power MOSFET

DMOS Structure

Small Package : SOT-23

Environmentally Friendly: EU RoHS Compliant, Pb Free

■ PIN CONFIGURATION/ MARKING



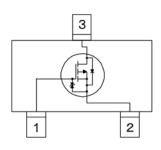
^{*} x represents production lot number.

■ PIN ASSIGNMENT

PRODUCTS	PACKAGE	ORDER UNIT
XP152A12C0MR	SOT-23	3,000/Reel
XP152A12C0MR-G ^(*)	SOT-23	3,000/Reel

^(*) The "-G" suffix denotes Halogen and Antimony free as well as being fully RoHS compliant.

■EQUIVALENT CIRCUIT



P-channel MOSFET (1 device built-in)

■ ABSOLUTE MAXIMUM RATINGS

Ta = 25°C

1α – Δ						
PARAMETER	SYMBOL	RATINGS	UNITS			
Drain - Source Voltage	Vdss	-20	٧			
Gate - Source Voltage	Vgss	±12	٧			
Drain Current (DC)	ld	-0.7	Α			
Drain Current (Pulse)	ldp	-2.8	Α			
Reverse Drain Current	ldr	-0.7	Α			
Channel Power Dissipation *	Pd	0.5	W			
Channel Temperature	Tch	150	°C			
Storage Temperature	Tstg	-55~150	°C			

^{*} When implemented on a ceramic PCB

■ELECTRICAL CHARACTERISTICS

DC Characteristics $Ta = 25^{\circ}C$

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Drain Cut-Off Current	ldss	Vds= -20V, Vgs= 0V	-	-	-10	μΑ
Gate-Source Leak Current	lgss	Vgs= ±12V, Vds=0V	-	-	±10	μΑ
Gate-Source Cut-Off Voltage	Vgs(off)	Id= -1mA, Vds= -10V	-0.5	-	-1.2	V
Drain-Source On-State Resistance *1	Rds(on)	Id= -0.4A, Vgs= -4.5V	-	0.23	0.30	Ω
		Id= -0.4A, Vgs= -2.5V	-	0.37	0.50	Ω
Forward Transfer Admittance *1	Yfs	Id= -0.4A, Vds= -10V	-	1.5	-	S
Body Drain Diode Forward Voltage	Vf	If= -0.7A, Vgs= 0V	-	-0.8	-1.1	V

^{*1} Effective during pulse test.

Dynamic Characteristics

 $Ta = 25^{\circ}C$

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Input Capacitance	Ciss	Vds= -10V, Vgs=0V f= 1MHz	-	180	-	pF
Output Capacitance	Coss		-	120	-	pF
Feedback Capacitance	Crss		-	60	-	pF

Switching Characteristics

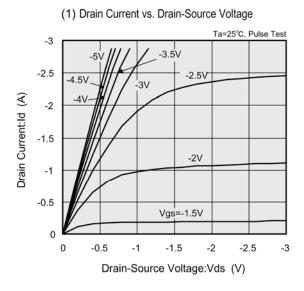
Ta = 25°C

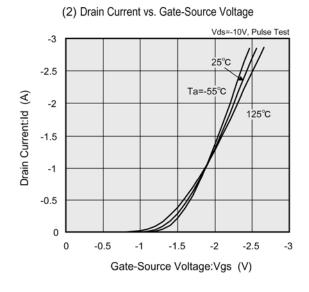
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Turn-On Delay Time	td (on)	Vgs= -5V, Id= -0.4A Vdd= -10V	1	5	1	ns
Rise Time	tr		-	20	-	ns
Turn-Off Delay Time	td (off)		-	55	-	ns
Fall Time	tf		-	70	-	ns

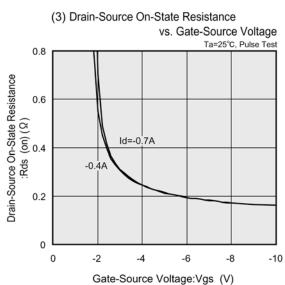
Thermal Characteristics

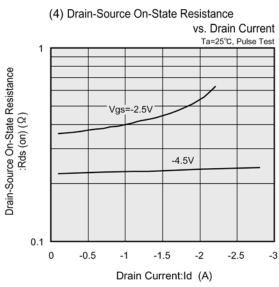
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Thermal Resistance (Channel-Ambience)	Rth (ch-a)	Implement on a ceramic PCB	-	250	-	°C/W

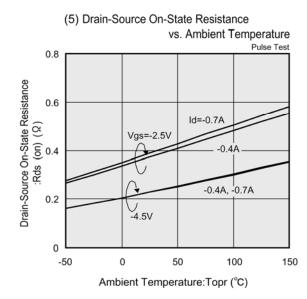
■TYPICAL PERFOMANCE CHARACTERISTICS

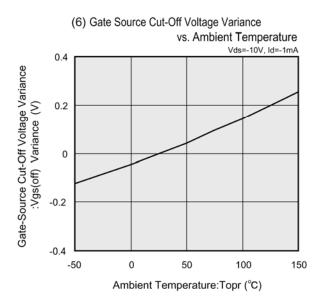




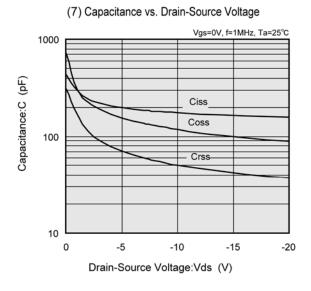


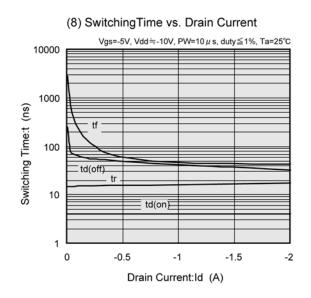


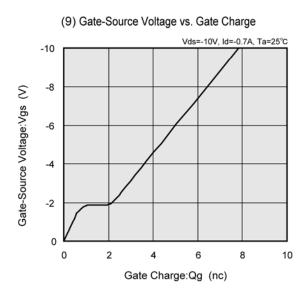


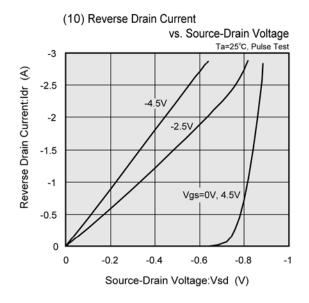


■TYPICAL PERFOMANCE CHARACTERISTICS (Continued)

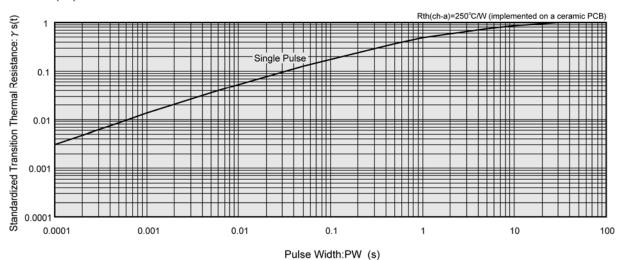








(11) Standardized Transition Thermal Resistance vs. Pulse Width



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