XP152A12C0MR-G

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.

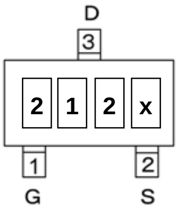
In order to counter static, a gate protect diode is built-in.

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

■PIN CONFIGURATION/ MARKING

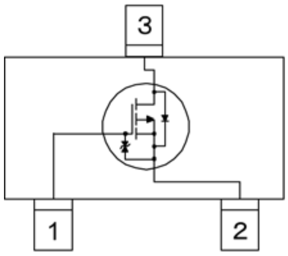


G：Gate
S：Source
D：Drain

SOT-23
（TOP VIEW）

* x represents production lot number.

■EQUIVALENT CIRCUIT



P-channel MOSFET
(1 device built-in)

■FEATURES

Low On-State Resistance : Rds(on) = 0.3Ω@ 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 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.

■ABSOLUTE MAXIMUM RATINGS

Ta = 25℃

PARAMETER	SYMBOL	RATINGS	UNITS
Drain - Source Voltage	Vdss	-20	V
Gate - Source Voltage	Vgss	±12	V
Drain Current (DC)	Id	-0.7	A
Drain Current (Pulse)	Idp	-2.8	A
Reverse Drain Current	Idr	-0.7	A
Channel Power Dissipation *	Pd	0.5	W
Channel Temperature	Tch	150	℃
Storage Temperature	Tstg	-55~150	℃

* When implemented on a ceramic PCB

XP152A12C0MR-G

■ELECTRICAL CHARACTERISTICS

DC Characteristics

Ta = 25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Drain Cut-Off Current	Idss	Vds= -20V, Vgs= 0V	-	-	-10	μA
Gate-Source Leak Current	Igss	Vgs= ±12V, Vds= 0V	-	-	±10	μA
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℃

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℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Turn-On Delay Time	td (on)	Vgs= -5V, Id= -0.4A Vdd= -10V	-	5	-	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	-	℃/W