XP151A11B0MR-G

Power MOSFET

■GENERAL DESCRIPTION

The XP151A11B0MR-G is an N-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.

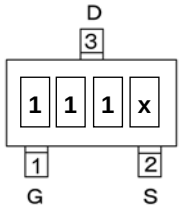
■APPLICATIONS

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

■FEATURES

Low On-State Resistance : Rds(on) = 0.12Ω@ Vgs = 10V
: Rds(on) = 0.17Ω@ Vgs = 4.5V
Ultra High-Speed Switching
Gate Protect Diode Built-in
Driving Voltage : 4.5V
N-Channel Power MOSFET
DMOS Structure
Small Package : SOT-23
Environmentally Friendly : EU RoHS Compliant, Pb Free

■PIN CONFIGURATION/ MARKING



SOT-23
(TOP VIEW)

G : Gate
S : Source
D : Drain

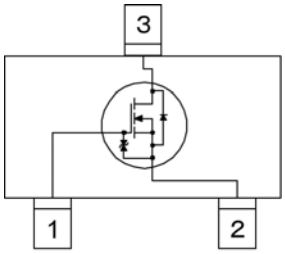
* x represents production lot number.

■PRODUCT NAMES

PRODUCTS	PACKAGE	ORDER UNIT
XP151A11B0MR	SOT-23	3,000/Reel
XP151A11B0MR-G(*)	SOT-23	3,000/Reel

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

■EQUIVALENT CIRCUIT



N-channel MOSFET
(1 device built-in)

■ABSOLUTE MAXIMUM RATINGS

Ta = 25℃

PARAMETER	SYMBOL	RATINGS	UNITS
Drain - Source Voltage	Vdss	30	V
Gate - Source Voltage	Vgss	±20	V
Drain Current (DC)	Id	1	A
Drain Current (Pulse)	Idp	4	A
Reverse Drain Current	Idr	1	A
Channel Power Dissipation *	Pd	0.5	W
Channel Temperature	Tch	150	℃
Storage Temperature	Tstg	-55~150	℃

* When implemented on a ceramic PCB

XP151A11B0MR-G

■ELECTRICAL CHARACTERISTICS

DC Characteristics

Ta = 25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Drain Cut-Off Current	Idss	Vds= 30V, Vgs= 0V	-	-	10	μA
Gate-Source Leak Current	Igss	Vgs= ±20V, Vds= 0V	-	-	±10	μA
Gate-Source Cut-Off Voltage	Vgs(off)	Id= 1mA, Vds= 10V	1.0	-	3.0	V
Drain-Source On-State Resistance *1	Rds(on)	Id= 0.5A, Vgs= 10V	-	0.09	0.12	Ω
		Id= 0.5A, Vgs= 4.5V	-	0.13	0.17	Ω
Forward Transfer Admittance *1	| Yfs |	Id= 0.5A, Vds= 10V	-	2.4	-	S
Body Drain Diode Forward Voltage	Vf	If= 1A, 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	-	150	-	pF
Output Capacitance	Coss		-	90	-	pF
Feedback Capacitance	Crss		-	30	-	pF

Switching Characteristics

Ta = 25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Turn-On Delay Time	td (on)	Vgs= 5V, Id= 0.5A Vdd= 10V	-	10	-	ns
Rise Time	tr		-	15	-	ns
Turn-Off Delay Time	td (off)		-	25	-	ns
Fall Time	tf		-	45	-	ns

Thermal Characteristics

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