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XP162A11C0PR-G

TOREX

ETR1125_003

Power MOSFET

■GENERAL DESCRIPTION

The XP162A11C0PR-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.
A gate protect diode is built-in to prevent static damage.
The small SOT-89 package makes high density mounting possible.

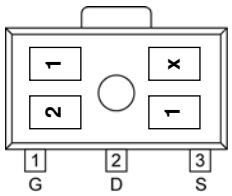
■APPLICATIONS

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

■FEATURES

Low On-State Resistance : Rds(on) = 0.15Ω@ Vgs = -10V
: Rds(on) = 0.28Ω@ Vgs = -4.5V
Ultra High-Speed Switching
Driving Voltage : -4.5V
Gate Protect Diode Built-in
P-Channel Power MOSFET
DMOS Structure
Small Package : SOT-89
Environmentally Friendly : EU RoHS Compliant, Pb Free

■PIN CONFIGURATION/ MARKING



G : Gate
S : Source
D : Drain

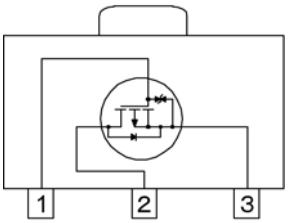
SOT-89
(TOP VIEW)
* x represents production lot number.

■PRODUCT NAME

PRODUCTS	PACKAGE	ORDER UNIT
XP162A11C0PR	SOT-89	1,000/Reel
XP162A11C0PR-G(*)	SOT-89	1,000/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℃

PARAMETER	SYMBOL	RATINGS	UNITS
Drain-Source Voltage	Vdss	-30	V
Gate-Source Voltage	Vgss	±20	V
Drain Current (DC)	Id	-2.5	A
Drain Current (Pulse)	Idp	-10	A
Reverse Drain Current	Idr	-2.5	A
Channel Power Dissipation *	Pd	2	W
Channel Temperature	Tch	150	℃
Storage Temperature	Tstg	-55~150	℃

* When implemented on a ceramic PCB

■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	-	-2.5	V
Drain-Source On-State Resistance*1	Rds(on)	Id= -1.5A, Vgs= -10V	-	0.11	0.15	Ω
		Id= -1.5A, Vgs= -4.5V	-	0.20	0.28	Ω
Forward Transfer Admittance*1	| Yfs |	Id= -1.5A, Vds= -10V	-	2.5	-	S
Body Drain Diode Forward Voltage	Vf	If= -2.5A, Vgs= 0V	-	-0.85	-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	-	280	-	pF
Output Capacitance	Coss		-	200	-	pF
Feedback Capacitance	Crss		-	90	-	pF

Switching Characteristics

Ta = 25℃

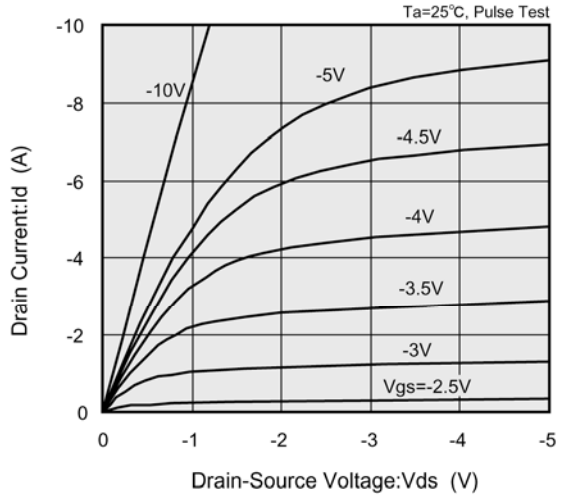
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Turn-On Delay Time	td (on)	Vgs= -5V, Id= -1.5A Vdd= -10V	-	10	-	ns
Rise Time	tr		-	30	-	ns
Turn-Off Delay Time	td (off)		-	20	-	ns
Fall Time	tf		-	35	-	ns

Thermal Characteristics

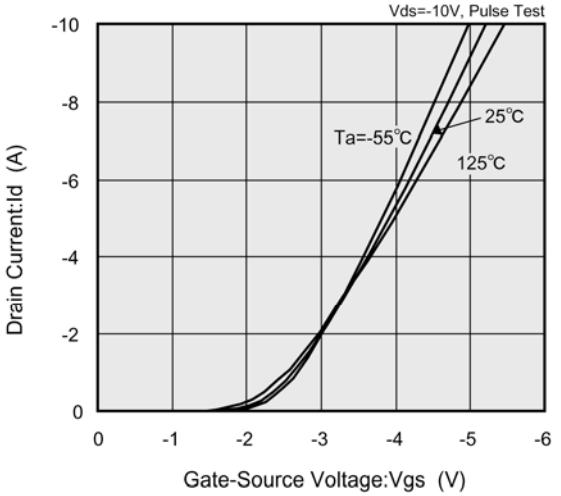
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Thermal Resistance (Channel-Ambience)	Rth (ch-a)	Implement on a ceramic PCB	-	62.5	-	℃/W

■TYPICAL PERFORMANCE CHARACTERISTICS

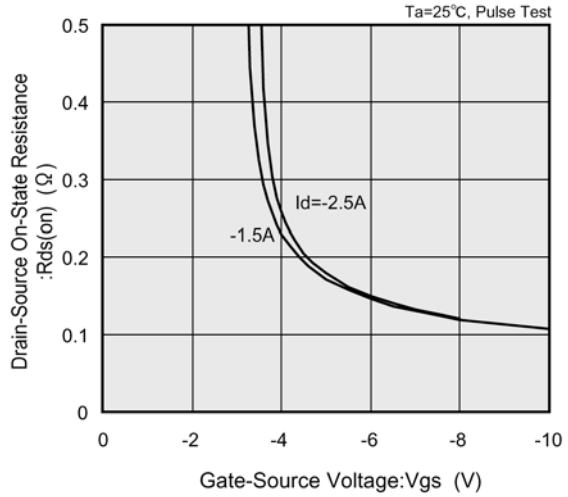
(1) Drain Current vs. Drain-Source Voltage



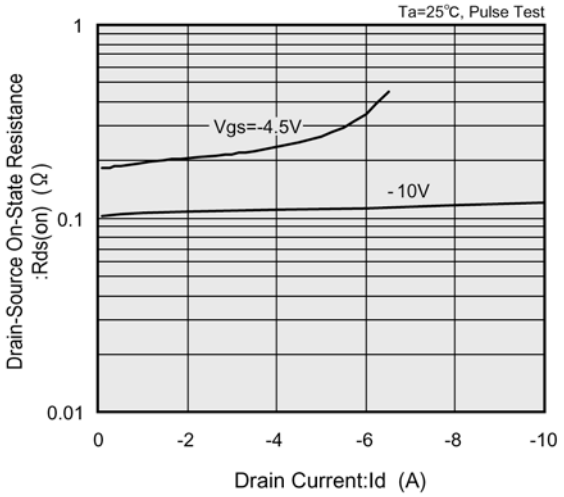
(2) Drain Current vs. Gate-Source Voltage



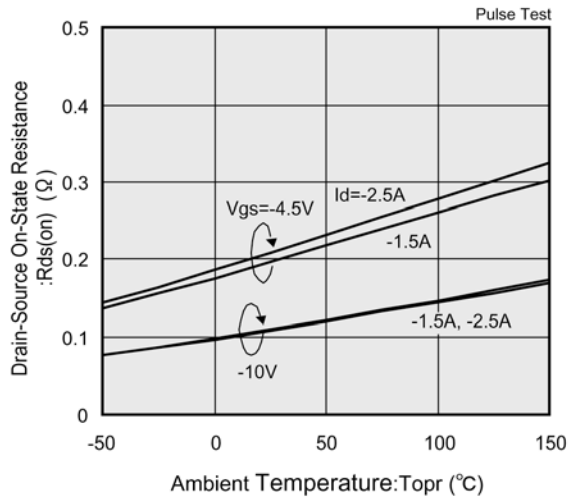
(3) Drain-Source On-State Resistance vs. Gate-Source Voltage



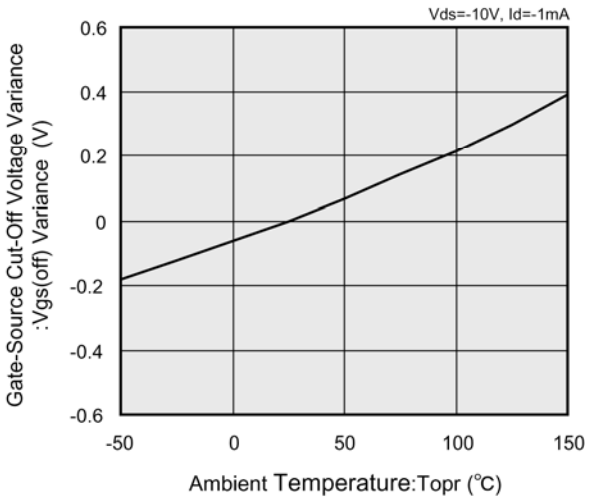
(4) Drain-Source On-State Resistance vs. Drain Current



(5) Drain-Source On-State Resistance vs. Ambient Temperature

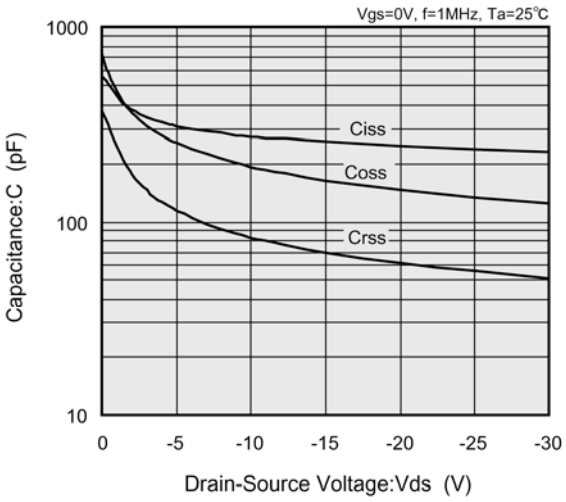


(6) Gate-Source Cut-Off Voltage Variance vs. Ambient Temperature

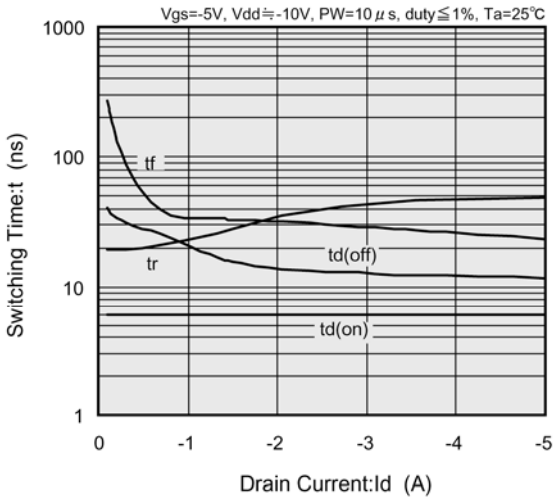


■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

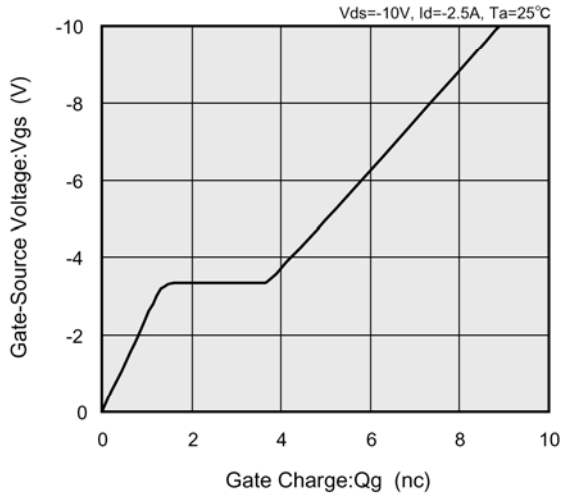
(7) Capacitance vs. Drain-Source Voltage



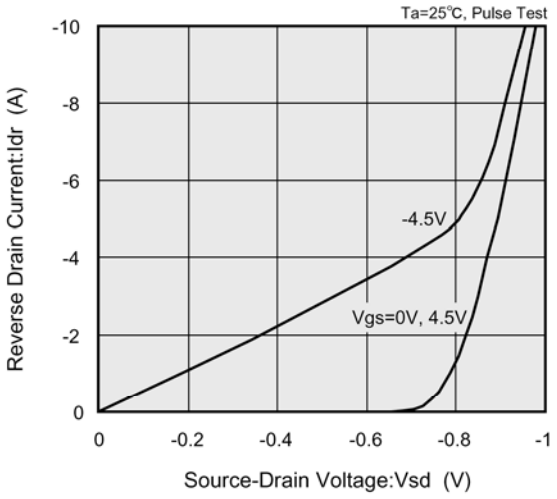
(8) Switching Time vs. Drain Current



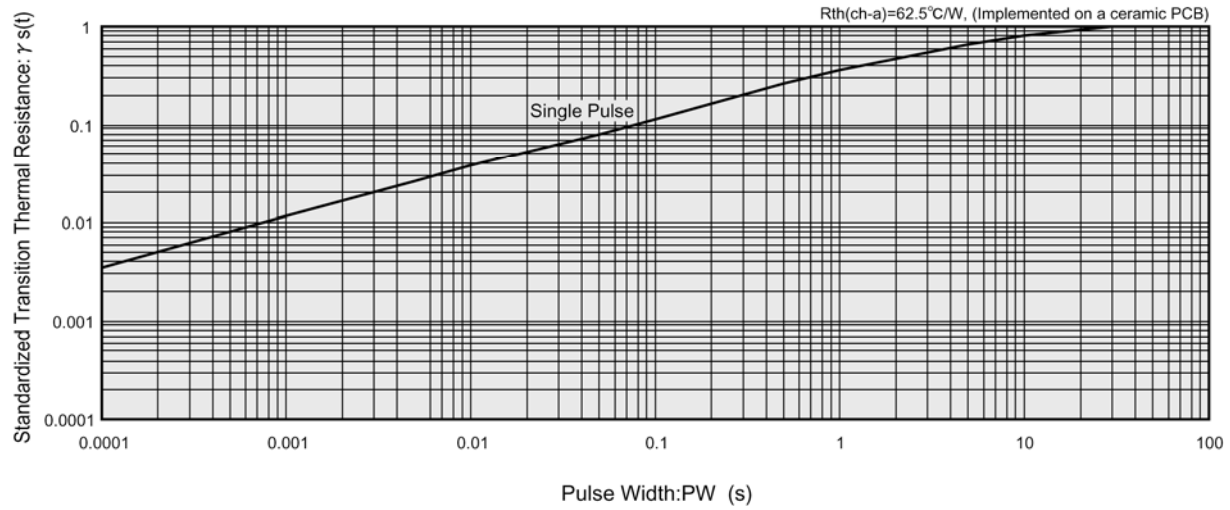
(9) Gate-Source Voltage vs. Gate Charge



(10) Reverse Drain Current vs. Source-Drain Voltage



(11) Standardized transition Thermal Resistance vs. Pulse Width



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