



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Power MOSFET

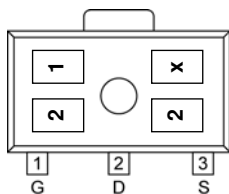
■ GENERAL DESCRIPTION

The XP162A12A6PR-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

■ PIN CONFIGURATION/MARKING

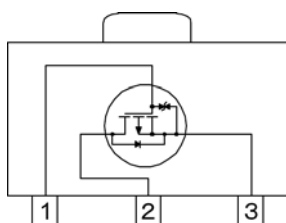


G : Gate
S : Source
D : Drain

SOT-89
(TOP VIEW)

* x represents production lot number.

■ EQUIVALENT CIRCUIT



P-channel MOSFET
(1 device built-in)

■ FEATURES

Low On-State Resistance : $R_{ds(on)} = 0.17\Omega @ V_{gs} = -4.5V$
: $R_{ds(on)} = 0.3\Omega @ V_{gs} = -2.5V$

Ultra High-Speed Switching

Driving Voltage : -2.5V

Gate Protect Diode Built-in

P-Channel Power MOSFET

DMOS Structure

Small Package : SOT-89

Environmentally Friendly : EU RoHS Compliant, Pb Free

■ PRODUCT NAME

PRODUCTS	PACKAGE	ORDER UNIT
XP162A12A6PR	SOT-89	1,000/Reel
XP162A12A6PR-G ^(*)	SOT-89	1,000/Reel

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

■ ABSOLUTE MAXIMUM RATINGS

$T_a = 25^\circ\text{C}$

PARAMETER	SYMBOL	RATINGS	UNITS
Drain-Source Voltage	V_{dss}	-20	V
Gate-Source Voltage	V_{gss}	± 12	V
Drain Current (DC)	I_d	-2.5	A
Drain Current (Pulse)	I_{dp}	-10	A
Reverse Drain Current	I_{dr}	-2.5	A
Channel Power Dissipation *	P_d	2	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

* When implemented on a ceramic PCB

ELECTRICAL CHARACTERISTICS

DC Characteristics

Ta = 25°C

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Drain Cut-Off Current	I _{dss}	V _{ds} = -20V, V _{gs} = 0V	-	-	-10	μA
Gate-Source Leak Current	I _{gss}	V _{gs} = ±12V, V _{ds} = 0V	-	-	±10	μA
Gate-Source Cut-Off Voltage	V _{gs(off)}	I _d = -1mA, V _{ds} = -10V	-0.5	-	-1.2	V
Drain-Source On-State Resistance*1	R _{ds(on)}	I _d = -1.5A, V _{gs} = -4.5V	-	0.13	0.17	Ω
		I _d = -1.5A, V _{gs} = -2.5V	-	0.22	0.30	Ω
Forward Transfer Admittance*1	Y _{fs}	I _d = -1.5A, V _{ds} = -10V	-	4	-	S
Body Drain Diode Forward Voltage	V _f	I _f = -2.5A, V _{gs} = 0V	-	-0.85	-1.1	V

*1 Effective during pulse test.

Dynamic Characteristics

Ta = 25°C

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Input Capacitance	C _{iss}	V _{ds} = -10V, V _{gs} =0V f= 1MHz	-	310	-	pF
Output Capacitance	C _{oss}		-	200	-	pF
Feedback Capacitance	C _{rss}		-	90	-	pF

Switching Characteristics

Ta = 25°C

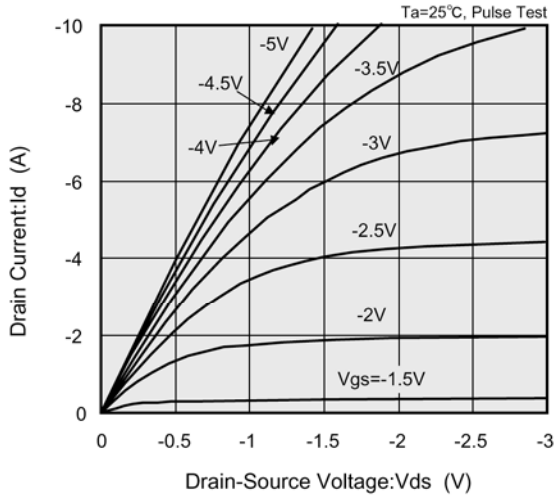
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Turn-On Delay Time	t _{d (on)}	V _{gs} = -5V, I _d = -1.5A V _{dd} = -10V	-	5	-	ns
Rise Time	t _r		-	15	-	ns
Turn-Off Delay Time	t _{d (off)}		-	55	-	ns
Fall Time	t _f		-	55	-	ns

Thermal Characteristics

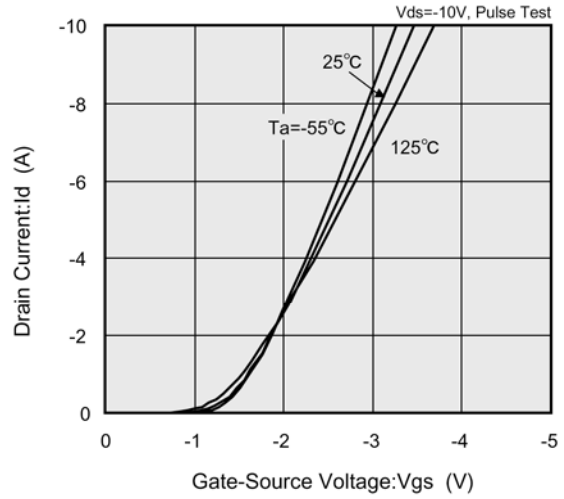
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Thermal Resistance (Channel-Ambience)	R _{th (ch-a)}	Implement on a ceramic PCB	-	62.5	-	°C/W

TYPICAL PERFORMANCE CHARACTERISTICS

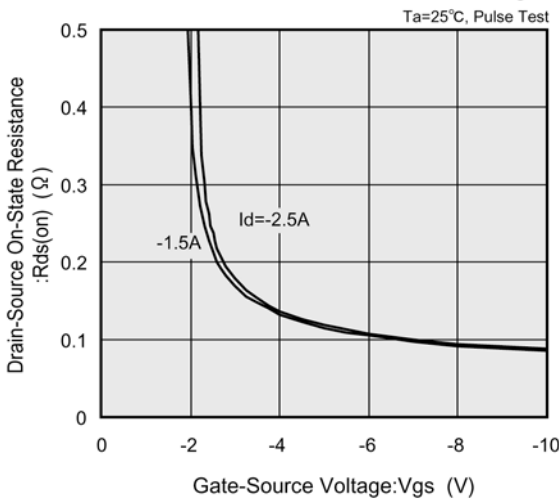
(1) Drain Current vs. Drain-Source Voltage



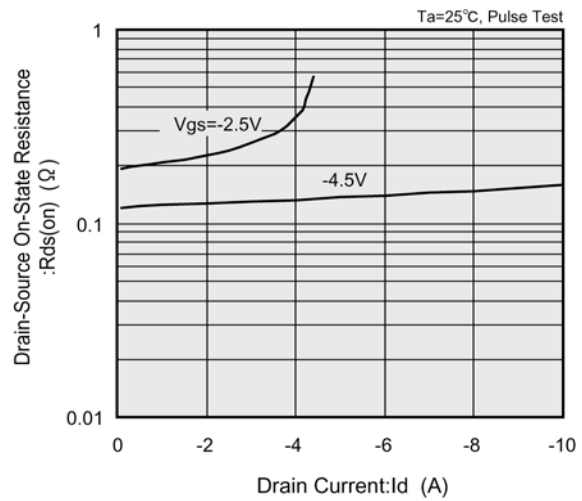
(2) Drain Current vs. Gate-Source Voltage



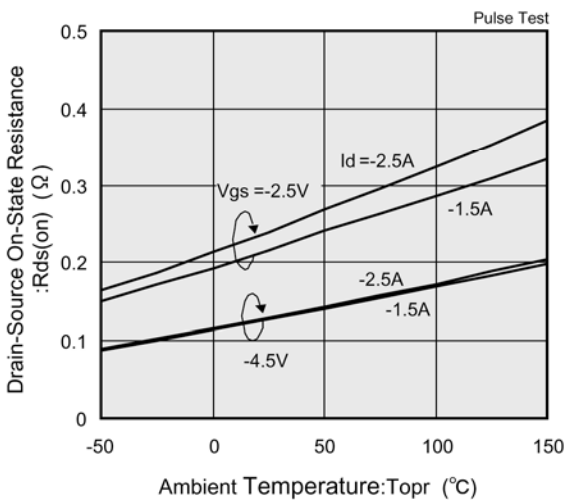
(3) Drain-Source On-State Resistance vs. Gate-Source Voltage



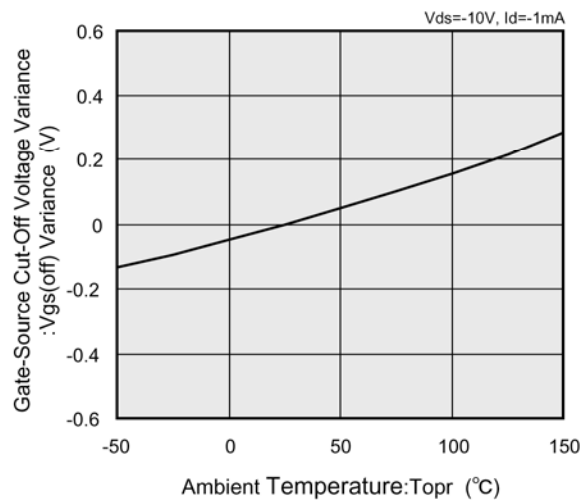
(4) Drain-Source On-State Resistance vs. Drain Current



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

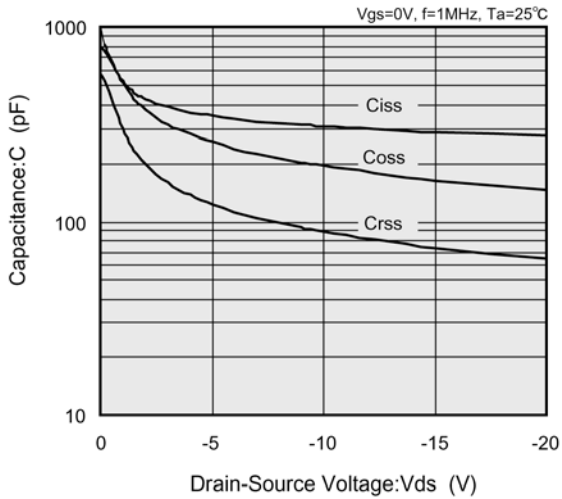


(6) Gate-Source Cut-Off Voltage Variance vs. Ambient Temperature

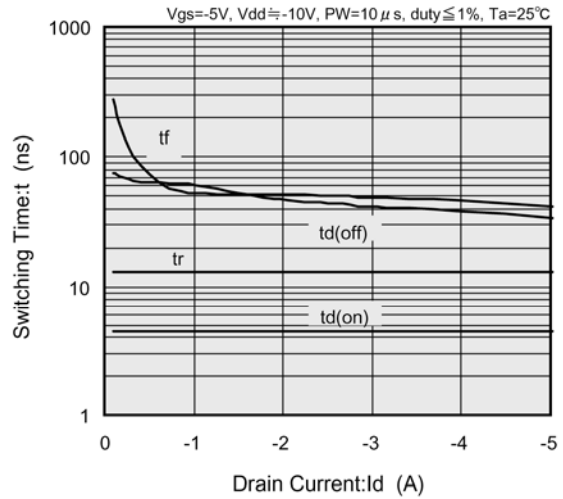


TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

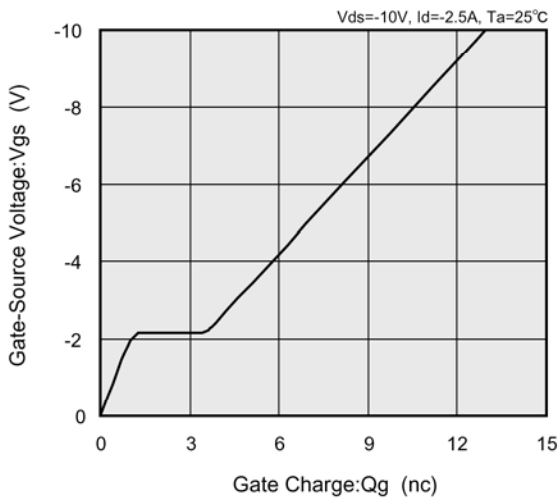
(7) Capacitance vs. Drain-Source Voltage



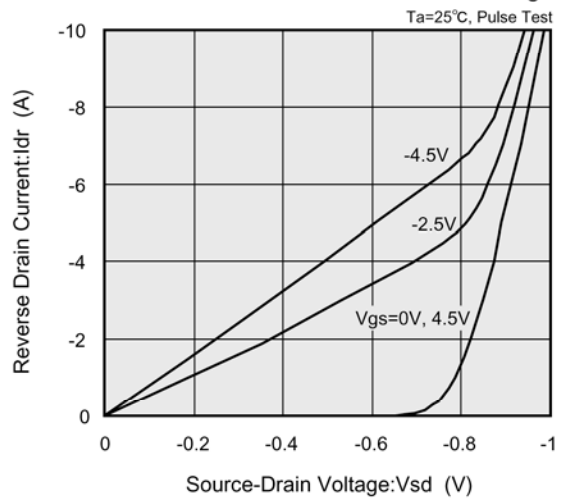
(8) Switching Time vs. Drain Current



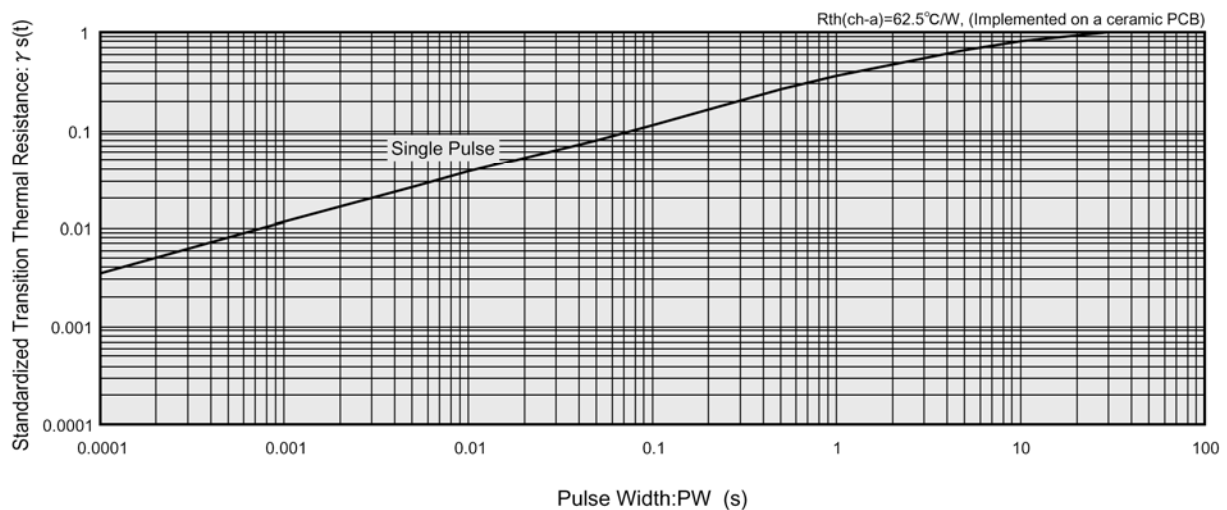
(9) Gate-Source Voltage vs. Gate Charge



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



(11) Standardized transition Thermal Resistance vs. Pulse Width



1. The products and product specifications contained herein are subject to change without notice to improve performance characteristics. Consult us, or our representatives before use, to confirm that the information in this catalog is up to date.
2. We assume no responsibility for any infringement of patents, patent rights, or other rights arising from the use of any information and circuitry in this catalog.
3. Please ensure suitable shipping controls (including fail-safe designs and aging protection) are in force for equipment employing products listed in this catalog.
4. The products in this catalog are not developed, designed, or approved for use with such equipment whose failure or malfunction can be reasonably expected to directly endanger the life of, or cause significant injury to, the user.
(e.g. Atomic energy; aerospace; transport; combustion and associated safety equipment thereof.)
5. Please use the products listed in this catalog within the specified ranges.
Should you wish to use the products under conditions exceeding the specifications, please consult us or our representatives.
6. We assume no responsibility for damage or loss due to abnormal use.
7. All rights reserved. No part of this catalog may be copied or reproduced without the prior permission of Torex Semiconductor Ltd.

TOREX SEMICONDUCTOR LTD.