XP132A1275SR

ETR1108_001

Power MOSFET

■GENERAL DESCRIPTION

The XP132A1275SR 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.
The small SOP-8 package makes high density mounting possible.

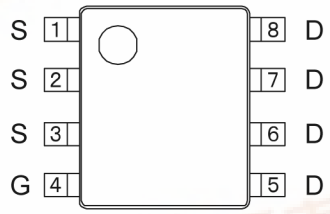
■APPLICATIONS

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

■FEATURES

Low On-State Resistance : Rds(on)=0.075Ω (Vgs=-4.5V)
: Rds(on)=0.115Ω (Vgs=-2.5V)
Ultra High-Speed Switching
Driving Voltage : -2.5V
P-Channel Power MOSFET
DMOS Structure
Package : SOP-8

■PIN CONFIGURATION

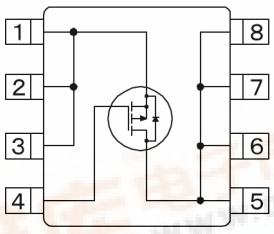


SOP-8
(TOP VIEW)

■PIN ASSIGNMENT

PIN NUMBER	PIN NAME	FUNCTION
1~3	S	Source
4	G	Gate
5~8	D	Drain

■EQUIVALENT CIRCUIT



P-channel MOSFET
(1 device built-in)

■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	-5	A
Drain Current (Pulse)	Idp	-20	A
Reverse Drain Current	Idr	-5	A
Channel Power Dissipation *	Pd	2.5	W
Channel Temperature	Tch	150	℃
Storage Temperature Range	Tstg	-55~150	℃

* When implemented on a glass epoxy PCB

■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	-	-	±1	μA
Gate-Source Cut-Off Voltage	Vgs(off)	Id=-1mA, Vds=-10V	-0.5	-	-1.2	V
Drain-Source On-State Resistance *	Rds(on)	Id=-3A, Vgs=-4.5V	-	0.06	0.075	Ω
		Id=-3A, Vgs=-2.5V	-	0.092	0.115	Ω
Forward Transfer Admittance *	| Yfs |	Id=-3A, Vds=-10V	-	8	-	S
Body Drain Diode Forward Voltage	Vf	If=-5A, Vgs=0V	-	-0.85	-1.1	V

* Effective during pulse test.

Dynamic Characteristics

Ta = 25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Input Capacitance	Ciss	Vds=-10V, Vgs=0V f=1MHz	-	770	-	pF
Output Capacitance	Coss		-	440	-	pF
Feedback Capacitance	Crss		-	180	-	pF

Switching Characteristics

Ta = 25℃

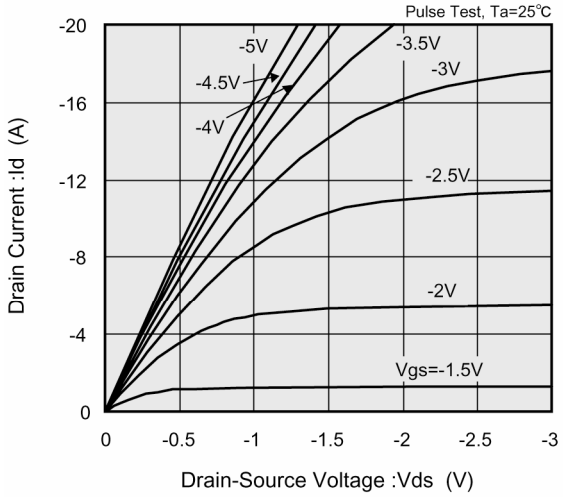
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Turn-On Delay Time	td (on)	Vgs=-5V, Id=-3A Vdd=-10V	-	10	-	ns
Rise Time	tr		-	25	-	ns
Turn-Off Delay Time	td (off)		-	45	-	ns
Fall Time	tf		-	40	-	ns

Thermal Characteristics

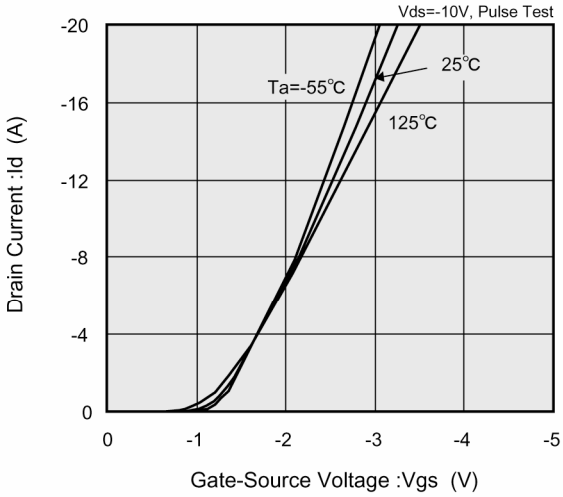
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Thermal Resistance (Channel-Ambience)	Rth (ch-a)	Implement on a glass epoxy resin PCB	-	50	-	℃/W

■TYPICAL PERFORMANCE CHARACTERISTICS

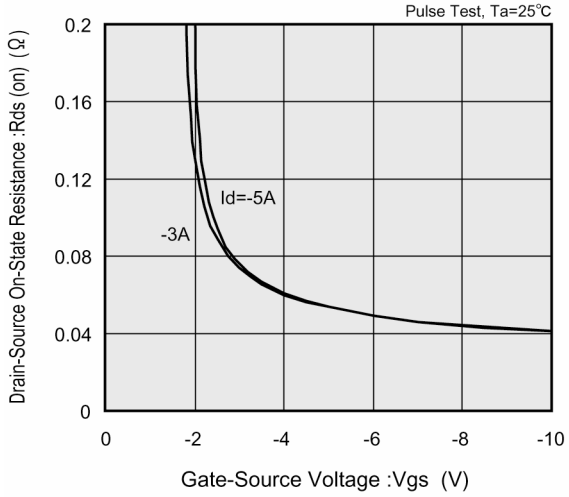
(1) Drain Current vs. Drain-Source Voltage



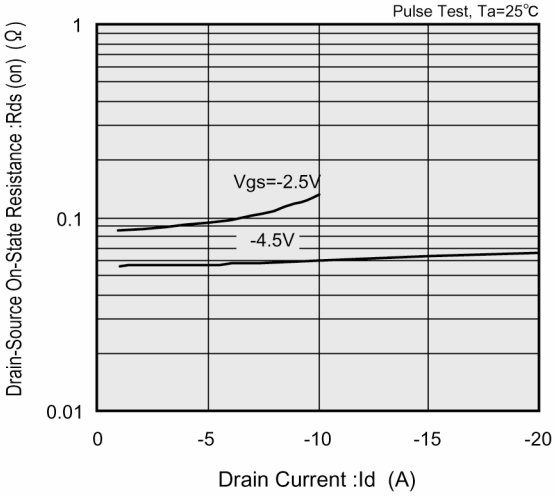
(2) Drain Current vs. Gate-Source Voltage



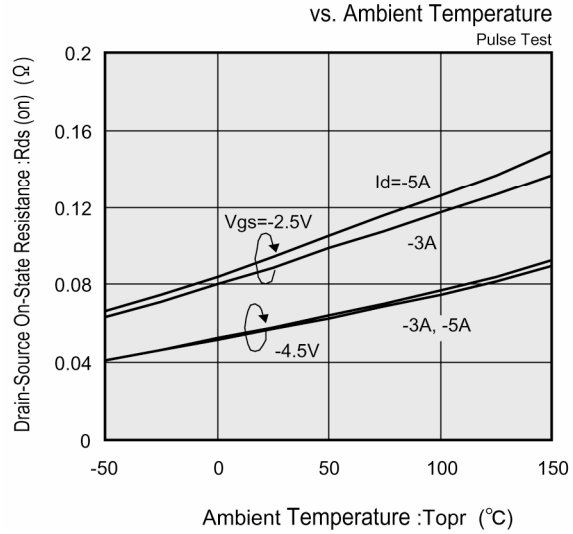
(3) Drain-Source On-State Resistance vs. Gate-Source Voltage



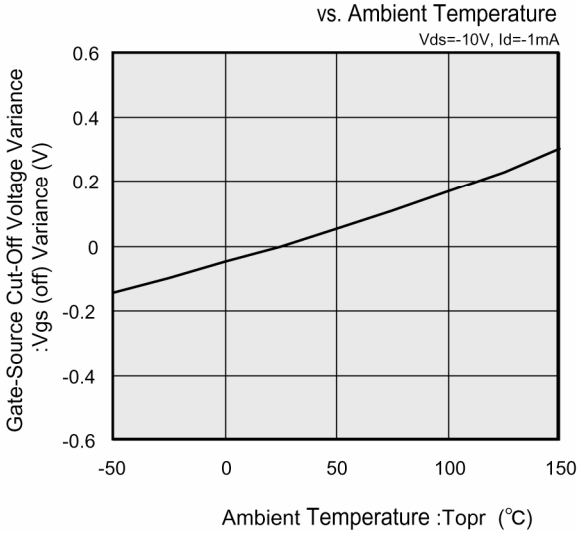
(4) Drain-Source On-State Resistance vs. Drain Current



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

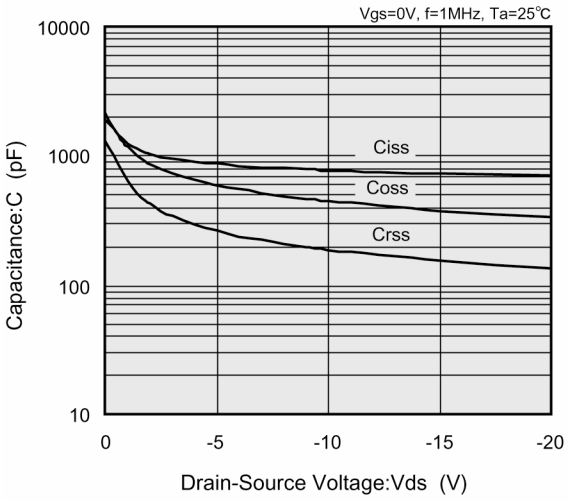


(6) Gate-Source Cut-Off Voltage Variance vs. Ambient Temperature

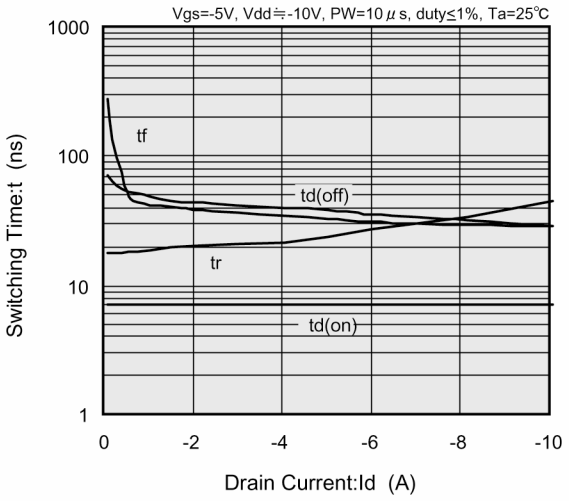


■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

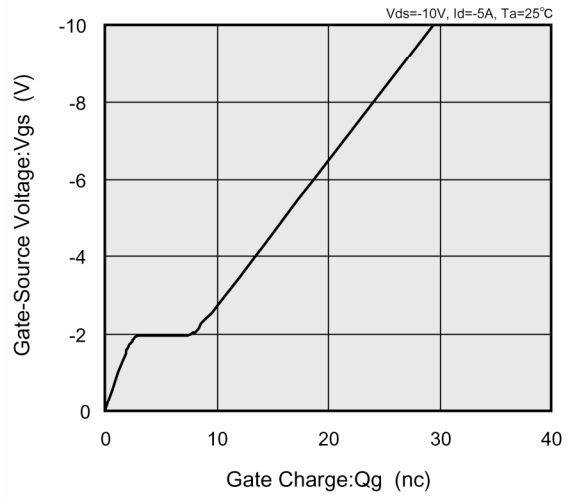
(7) Capacitance vs. Drain-Source Voltage



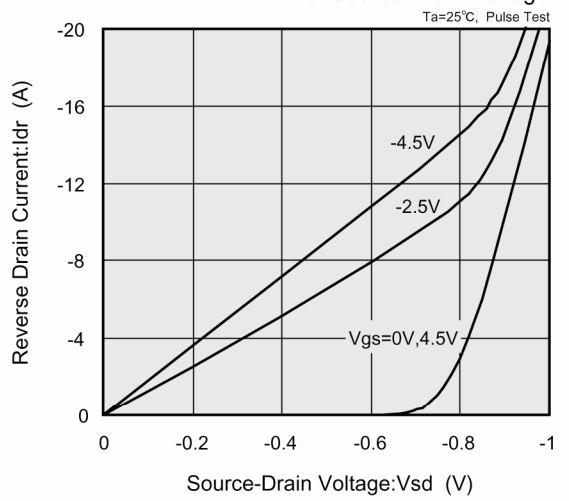
(8) Switching Time vs. Drain Current



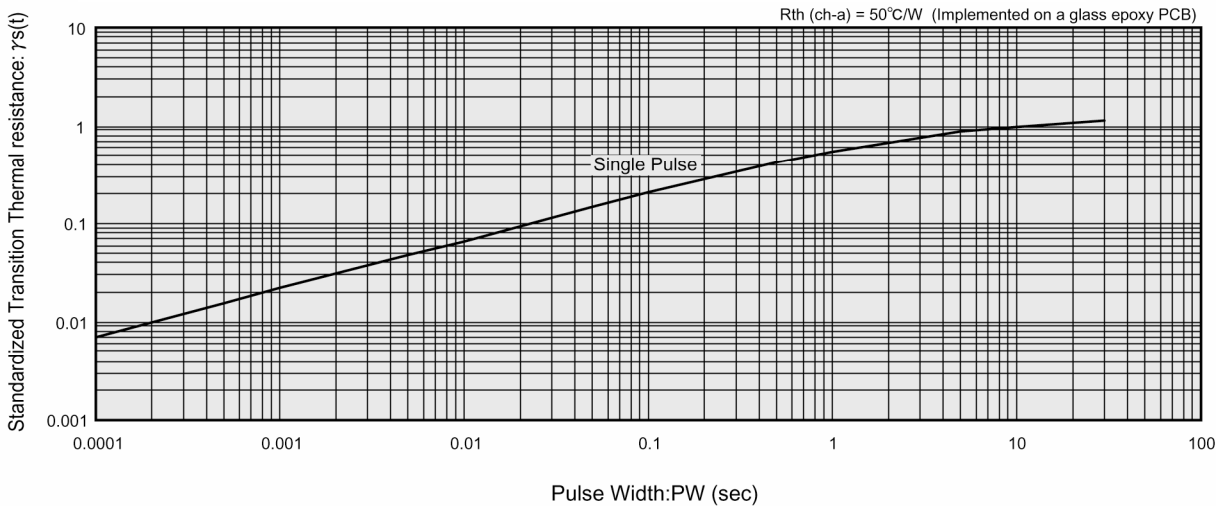
(9) Gate-Source Voltage vs. Gate Charge



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



(11) Standardized transition Thermal Resistance vs. Pulse Width



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