

XP132A1275SR



Power MOS FET

- ◆P-Channel Power MOS FET
- ◆DMOS Structure
- ◆Low On-State Resistance : 0.075Ω (max)
- ◆Ultra High-Speed Switching
- ◆SOP-8 Package

General Description

The XP132A1275SR is a P-Channel Power MOS FET 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

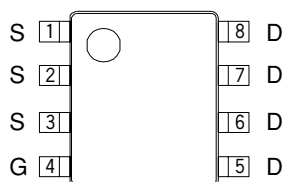
Low on-state resistance : $R_{ds(on)} = 0.075\Omega$ ($V_{gs} = -4.5V$)
: $R_{ds(on)} = 0.115\Omega$ ($V_{gs} = -2.5V$)

Ultra high-speed switching

Operational Voltage : $-2.5V$

High density mounting : SOP-8

Pin Configuration

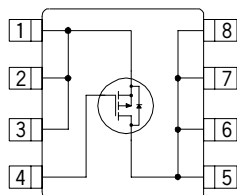


SOP-8
(TOP VIEW)

Pin Assignment

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

Equivalent Circuit



P-Channel MOS FET
(1 device built-in)

Absolute Maximum Ratings $T_a = 25^\circ C$

PARAMETER	SYMBOL	RATINGS	UNITS
Drain - Source Voltage	V_{ds}	-20	V
Gate - Source Voltage	V_{gs}	± 12	V
Drain Current (DC)	I_d	-5	A
Drain Current (Pulse)	I_{dp}	-20	A
Reverse Drain Current	I_{dr}	-5	A
Continuous Channel Power Dissipation (note)	P_d	2.5	W
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$

(note) : When implemented on a glass epoxy PCB

Electrical Characteristics

DC Characteristics

Ta=25°C

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Drain Cut-off Current	Idss	Vds = - 20V , Vgs = 0V			- 10	μA
Gate-Source Leakage 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 (note)	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 (note)	Yfs	Id = - 3A , Vds = - 10V		8		S
Body Drain Diode Forward Voltage	Vf	If = - 5A , Vgs = 0V		- 0.85	- 1.1	V

(note) : Effective during pulse test.

Dynamic Characteristics

Ta=25°C

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

Switching Characteristics

Ta=25°C

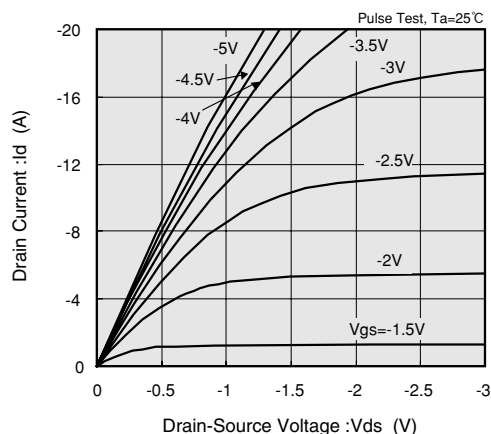
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Turn-on Delay Time	td (on)	Vgs = - 5V , Id = - 3A Vdd = - 10V		10		ns
Rise Time	tr			25		ns
Turn-off Delay Time	td (off)			45		ns
Fall Time	tf			40		ns

Thermal Characteristics

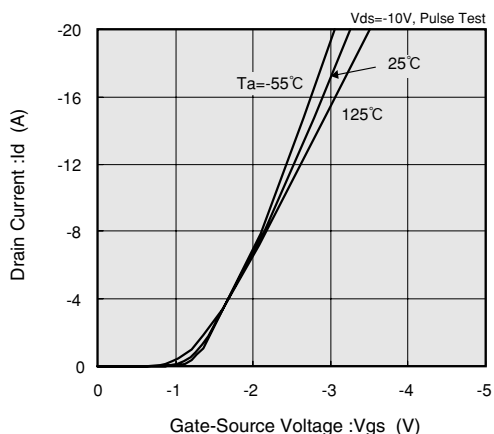
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Thermal Resistance (channel-ambience)	Rth (ch-a)	Implement on a glass epoxy resin PCB		50		°C / W

Typical Performance Characteristics

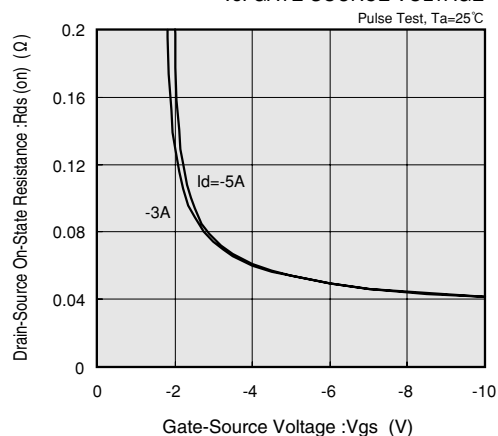
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



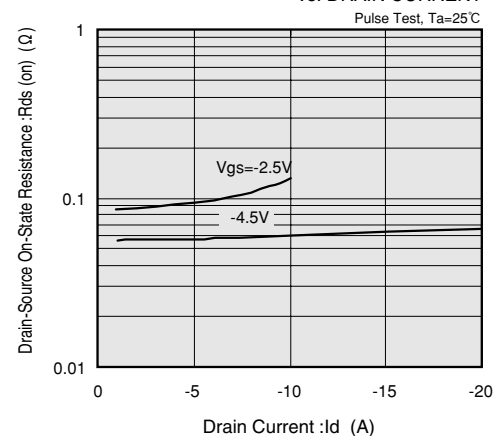
DRAIN CURRENT vs. GATE-SOURCE VOLTAGE



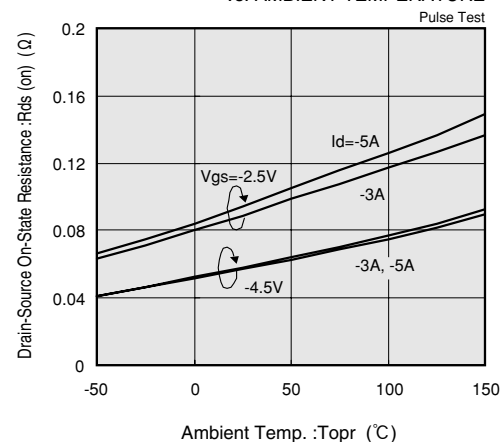
DRAIN-SOURCE ON-STATE RESISTANCE vs. GATE-SOURCE VOLTAGE



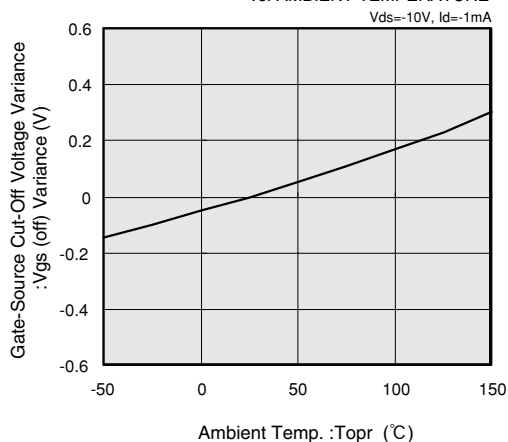
DRAIN-SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



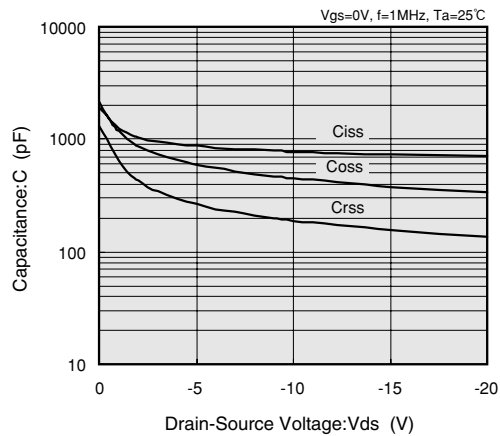
DRAIN-SOURCE ON-STATE RESISTANCE vs. AMBIENT TEMPERATURE



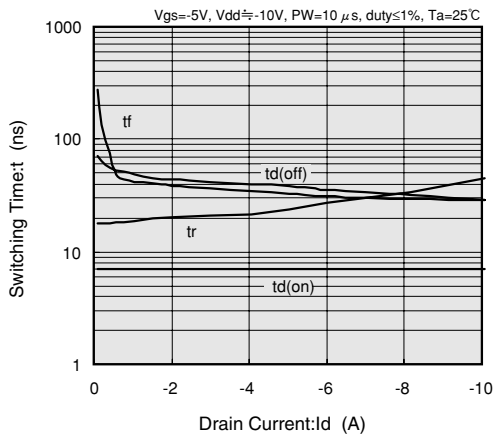
GATE-SOURCE CUT-OFF VOLTAGE VARIANCE vs. AMBIENT TEMPERATURE



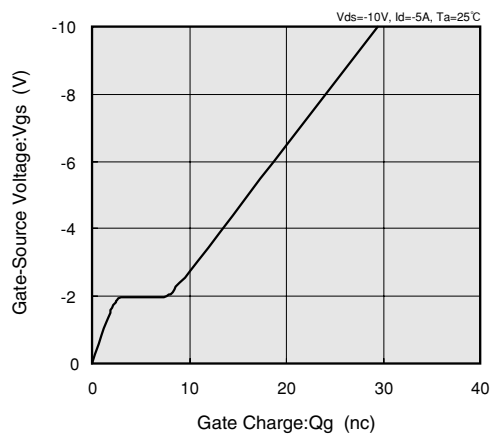
CAPACITANCE vs. DRAIN-SOURCE VOLTAGE



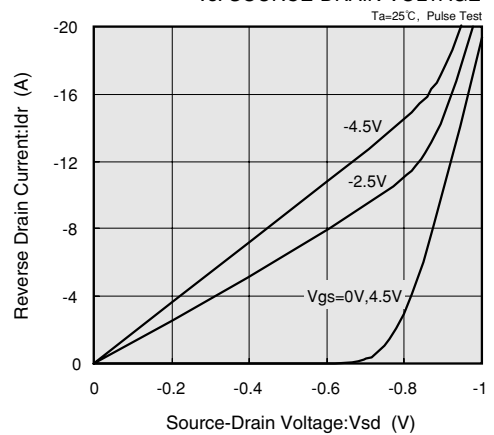
SWITCHING TIME vs. DRAIN CURRENT



GATE-SOURCE VOLTAGE vs. GATE CHARGE



REVERSE DRAIN CURRENT vs. SOURCE-DRAIN VOLTAGE



STANDARDIZED TRANSITION THERMAL RESISTANCE vs. PULSE WIDTH

