

XP132A0340SR



Power MOS FET

- ◆P-Channel Power MOS FET
- ◆DMOS Structure
- ◆Low On-State Resistance: 0.04Ω (max)
- ◆Ultra High-Speed Switching
- ◆SOP-8 Package

General Description

The XP132A0340SR 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.

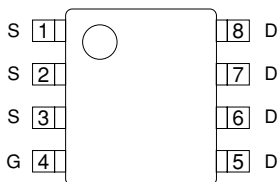
Applications

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

Features

- Low on-state resistance** : $R_{ds(on)}=0.04\Omega(V_{gs}=-4.5V)$
: $R_{ds(on)}=0.06\Omega(V_{gs}=-2.5V)$
- Ultra high-speed switching**
- Operational Voltage** : -4.5V
- High density mounting** : SOP-8

Pin Configuration

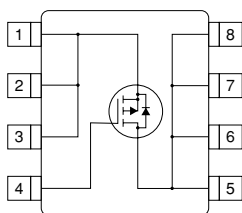


SOP-8
(TOP VIEW)

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

Ta=25°C

PARAMETER	SYMBOL	RATINGS	UNITS
Drain-Source Voltage	Vdss	-20	V
Gate-Source Voltage	Vgss	±8	V
Drain Current (DC)	Id	-7	A
Drain Current (Pulse)	Idp	-25	A
Reverse Drain Current	Idr	-7	A
Continuous Channel Power Dissipation (note)	Pd	2.5	W
Channel Temperature	Tch	150	°C
Storage Temperature	Tstg	-55-150	°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=±8V, 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=-4A, Vgs=-4.5V		0.03	0.04	Ω
		Id=-4A, Vgs=-2.5V		0.045	0.06	Ω
Forward Transfer Admittance (note)	Yfs	Id=-4A, Vds=-10V		13		S
Body Drain Diode Forward Voltage	Vf	If=-7A, 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=1MHz		2000		pF
Output Capacitance	Coss			1100		pF
Feedback Capacitance	Crss			550		pF

Switching Characteristics

Ta=25°C

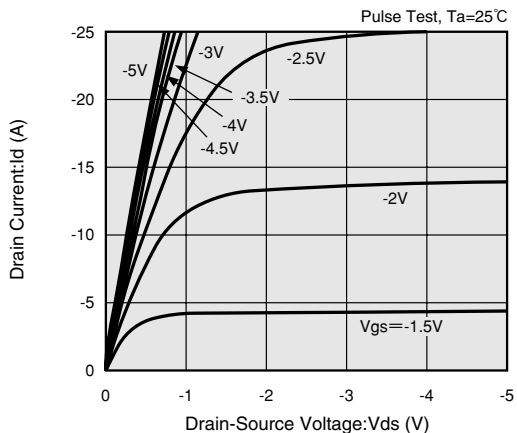
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Turn-on Delay Time	td (on)	Vgs=-5V, Id=-4A Vdd=-10V		15		ns
Rise Time	tr			25		ns
Turn-off Delay Time	td (off)			75		ns
Fall Time	tf			50		ns

Thermal Characteristics

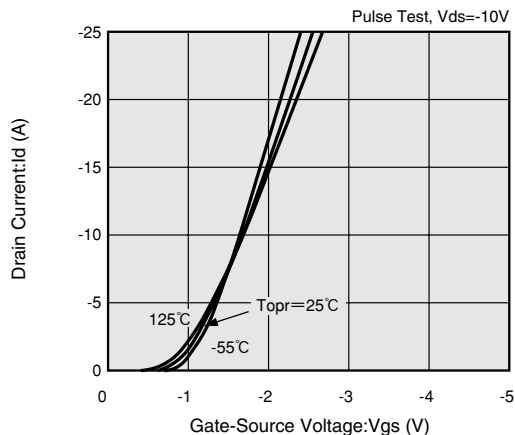
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Thermal Resistance (channel-ambience)	Rth (ch-a)	Implement on a glass epoxy resin PCB		50		°C/W

Typical Performance Characteristics

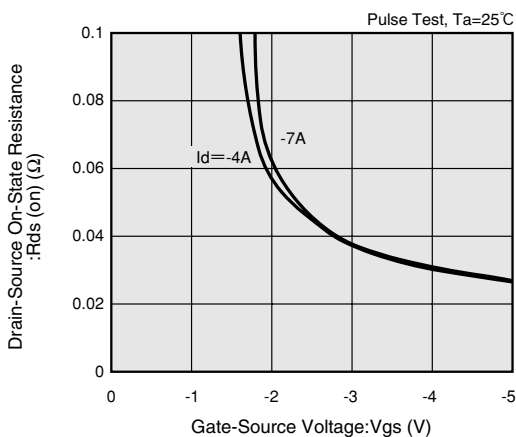
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



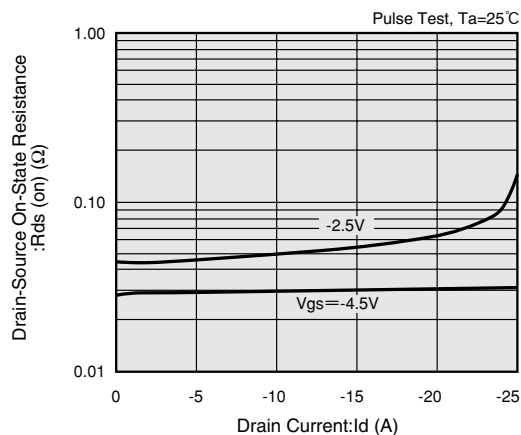
DRAIN CURRENT vs. GATE-SOURCE VOLTAGE



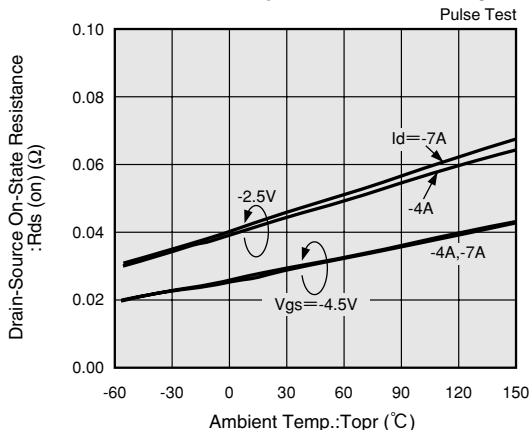
DRAIN-SOURCE ON-STATE RESISTANCE vs. GATE-SOURCE VOLTAGE



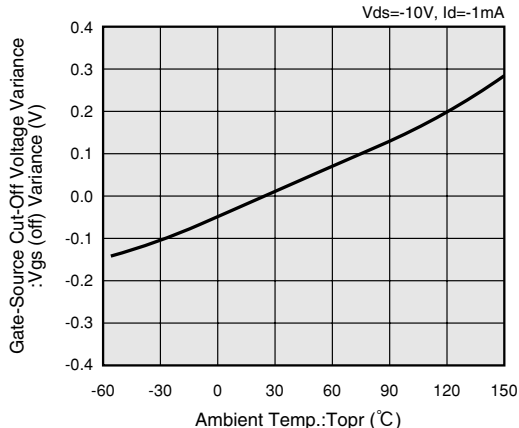
DRAIN-SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



DRAIN-SOURCE ON-STATE RESISTANCE vs. AMBIENT TEMPERATURE

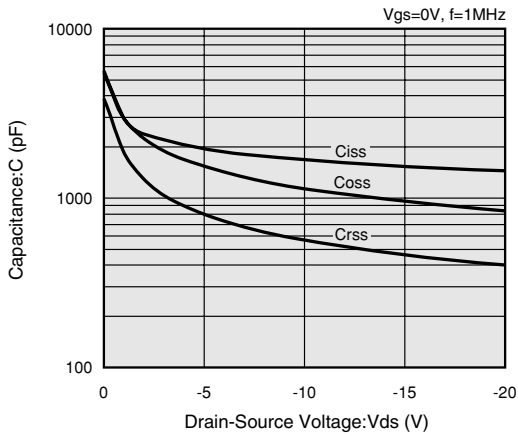


GATE-SOURCE CUT-OFF VOLTAGE VARIANCE vs. AMBIENT TEMPERATURE

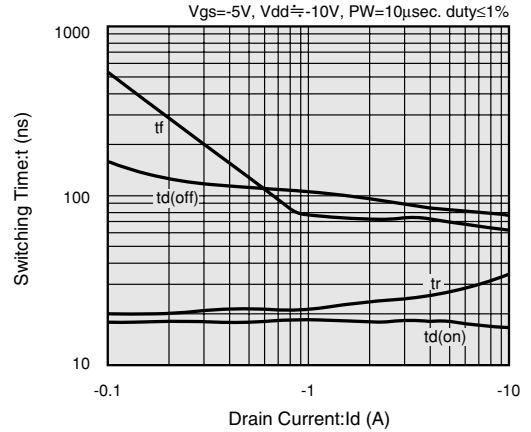


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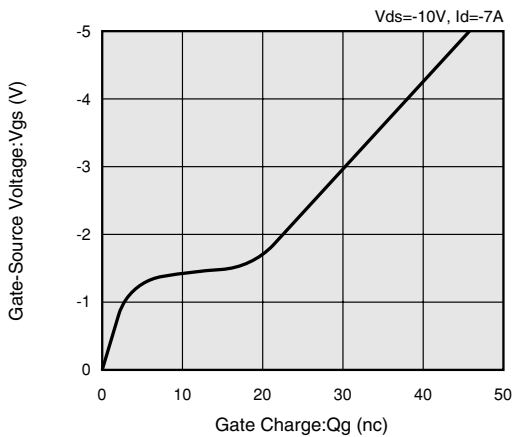
CAPACITANCE vs. DRAIN-SOURCE VOLTAGE



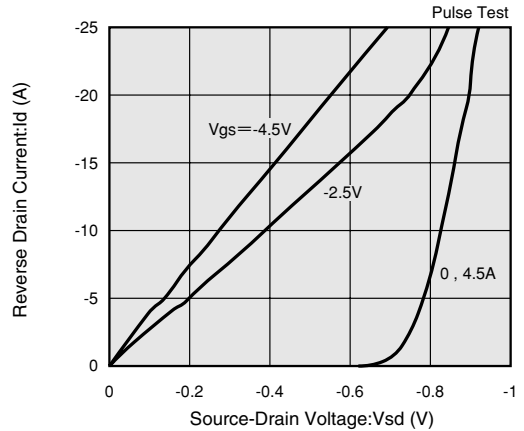
SWITCHING TIME vs. DRAIN CURRENT



GATE-SOURCE VOLTAGE vs. GATE CHARGE



REVERSE DRAIN CURRENT vs. SOURCE-DRAIN VOLTAGE



STANDARDIZED TRANSITION THERMAL RESISTANCE vs. PULSE WIDTH

