

XP132A11A1SR



Power MOS FET

- ◆ P-Channel Power MOS FET
- ◆ DMOS Structure
- ◆ Low On-State Resistance : 0.11Ω (max)
- ◆ Ultra High-Speed Switching
- ◆ SOP-8 Package

General Description

The XP132A11A1SR 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

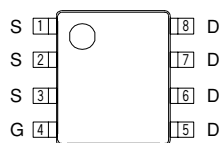
Low on-state resistance : Rds (on) = 0.065Ω (Vgs = -10V)
: Rds (on) = 0.11Ω (Vgs = -4.5V)

Ultra high-speed switching

Operational Voltage : -4.5V

High density mounting : SOP-8

Pin Configuration

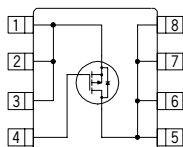


SOP-8
(TOP VIEW)

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	- 30	V
Gate - Source Voltage	Vgss	± 20	V
Drain Current (DC)	Id	- 5	A
Drain Current (Pulse)	Idp	- 20	A
Reverse Drain Current	Idr	- 5	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

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Electrical Characteristics

DC Characteristics

Ta=25°C

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Drain Cut-off Current	I _{dss}	V _{ds} = -30V, V _{gs} = 0V			-10	μA
Gate-Source Leakage Current	I _{gss}	V _{gs} = ±20V, V _{ds} = 0V			±1	μA
Gate-Source Cut-off Voltage	V _{gs (off)}	I _d = -1mA, V _{ds} = -10V	-1.0		-2.5	V
Drain-Source On-state Resistance (note)	R _{ds (on)}	I _d = -3A, V _{gs} = -10V		0.055	0.065	Ω
		I _d = -3A, V _{gs} = -4.5V		0.095	0.11	Ω
Forward Transfer Admittance (note)	Y _{fs}	I _d = -3A, V _{ds} = -10V		6		S
Body Drain Diode Forward Voltage	V _f	I _f = -5A, V _{gs} = 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	C _{iss}	V _{ds} = -10V, V _{gs} = 0V f = 1 MHz		680		pF
Output Capacitance	C _{oss}			450		pF
Feedback Capacitance	C _{rss}			170		pF

Switching Characteristics

Ta=25°C

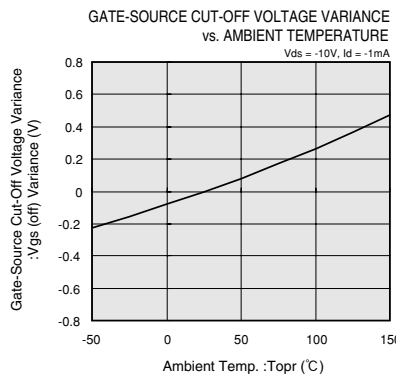
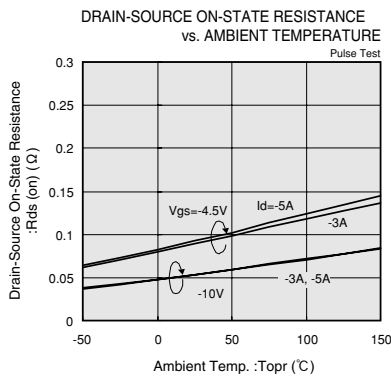
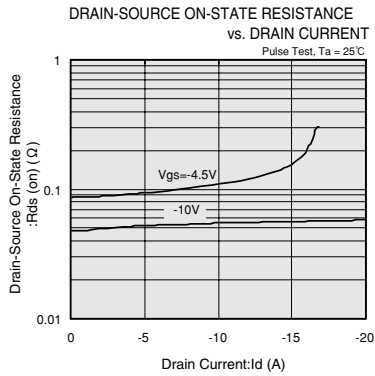
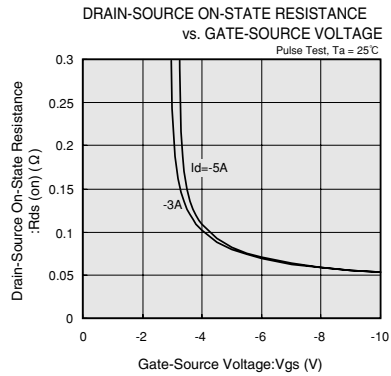
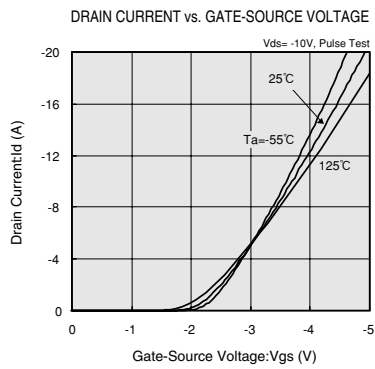
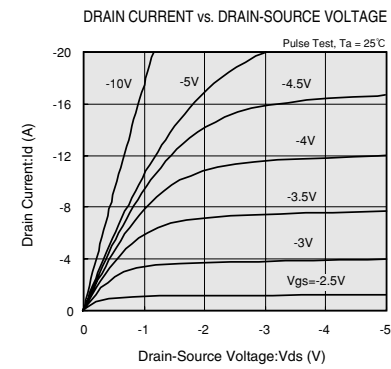
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Turn-on Delay Time	t _{d (on)}	V _{gs} = -5V, I _d = -3A V _{dd} = -10V		15		ns
Rise Time	t _r			20		ns
Turn-off Delay Time	t _{d (off)}			30		ns
Fall Time	t _f			20		ns

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Thermal Characteristics

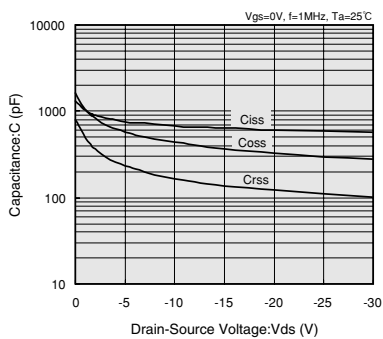
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Thermal Resistance (channel-ambience)	R _{th (ch-a)}	Implement on a glass epoxy resin PCB		50		°C / W

Typical Performance Characteristics

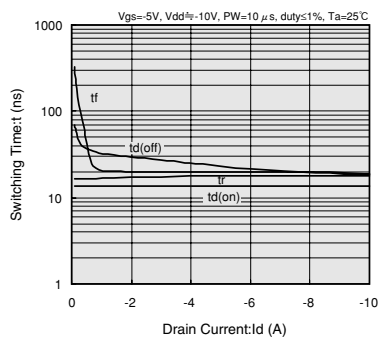


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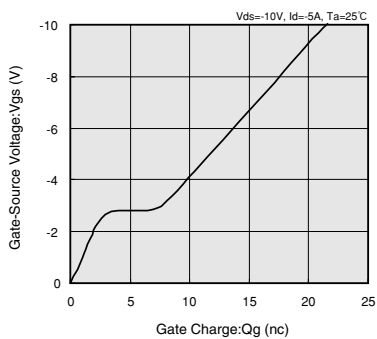
CAPACITANCE vs. DRAIN-SOURCE VOLTAGE



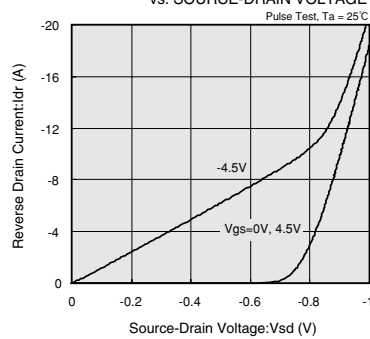
SWITCHING TIME vs. DRAIN CURRENT



GATE-SOURCE VOLTAGE vs. GATE CHARGE



REVERSE DRAIN CURRENT vs. SOURCE-DRAIN VOLTAGE



STANDARDIZED TRANSITION THERMAL RESISTANCE vs. PULSE WIDTH

