

XP134A01A9SR



Power MOS FET

- ◆P-Channel Power MOS FET
- ◆DMOS Structure
- ◆Low On-State Resistance: 0.19Ω (max)
- ◆Ultra High-Speed Switching
- ◆SOP-8 Package
- ◆Two FET Devices Built-in

General Description

The XP134A01A9SR is a P-Channel Power MOS FET with low on-state resistance and ultra high-speed switching characteristics.

Two FET devices are built into the one package.

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

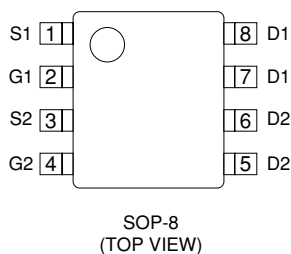
Low on-state resistance : $R_{ds(on)}=0.12\Omega$ ($V_{gs}=-10V$)
: $R_{ds(on)}=0.19\Omega$ ($V_{gs}=-4.5V$)

Ultra high-speed switching

Operational Voltage : $-4.5V$

High density mounting : SOP-8

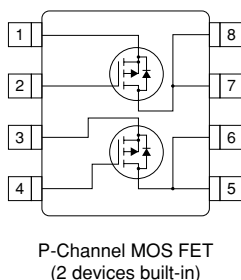
Pin Configuration



Pin Assignment

PIN NUMBER	PIN NAME	FUNCTION
1	S1	Source
2	G1	Gate
3	S2	Source
4	G2	Gate
5~6	D2	Drain
7~8	D1	Drain

Equivalent Circuit



Absolute Maximum Ratings

$T_a=25^\circ C$

PARAMETER	SYMBOL	RATINGS	UNITS
Drain-Source Voltage	V_{ds}	-30	V
Gate-Source Voltage	V_{gs}	± 20	V
Drain Current (DC)	I_d	-3.5	A
Drain Current (Pulse)	I_{dp}	-10	A
Reverse Drain Current	I_{dr}	-3.5	A
Continuous Channel Power Dissipation (note)	P_d	2	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℃

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 =-2A, V _{gs} =-10V		0.095	0.12	Ω
		I _d =-2A, V _{gs} =-4.5V		0.15	0.19	Ω
Forward Transfer Admittance (note)	Y _{fs}	I _d =-2A, V _{ds} =-10V		4		S
Body Drain Diode Forward Voltage	V _f	I _f =-3.5A, V _{gs} =0V		-0.85	-1.1	V

Note: Effective during pulse test.

Dynamic Characteristics

Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Capacitance	C _{iss}	V _{ds} =-10V, V _{gs} =0V f=1MHz		600		pF
Output Capacitance	C _{oss}			350		pF
Feedback Capacitance	C _{rss}			110		pF

Switching Characteristics

Ta=25℃

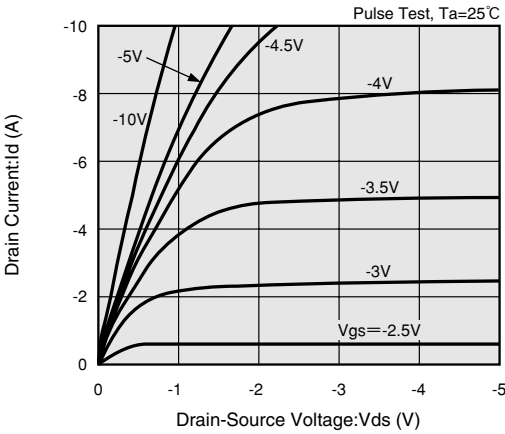
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Turn-on Delay Time	t _{d (on)}	V _{gs} =-5V, I _d =-2A V _{dd} =-10V		15		ns
Rise Time	t _r			25		ns
Turn-off Delay Time	t _{d (off)}			25		ns
Fall Time	t _f			15		ns

Thermal Characteristics

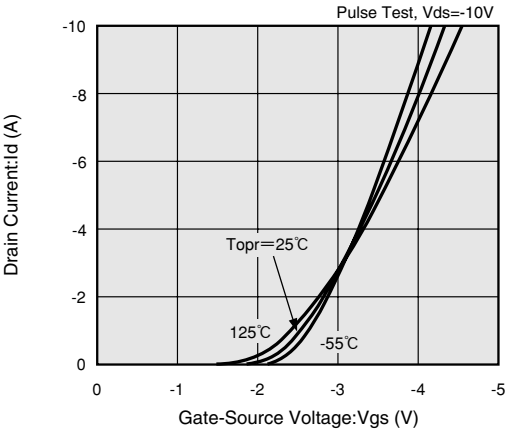
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Thermal Resistance (channel-ambience)	R _{th (ch-a)}	Implement on a glass epoxy resin PCB		62.5		℃/W

Typical Performance Characteristics

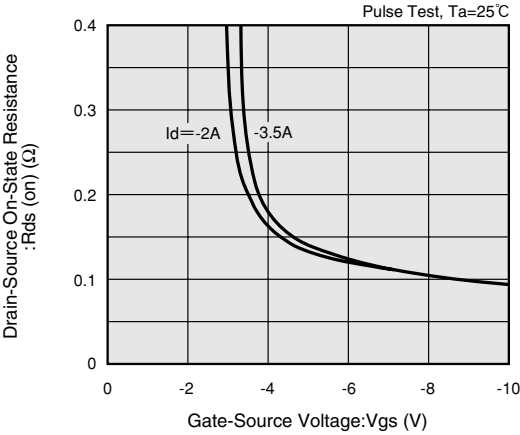
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



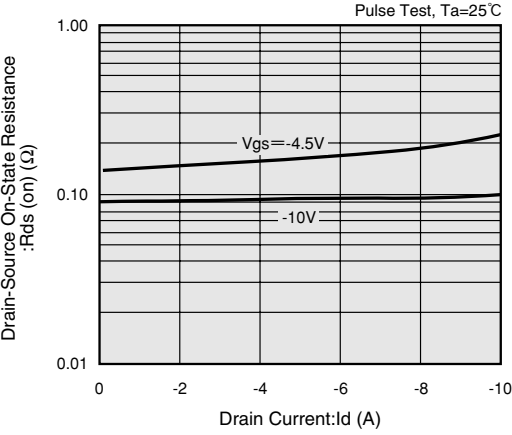
DRAIN CURRENT vs. GATE-SOURCE VOLTAGE



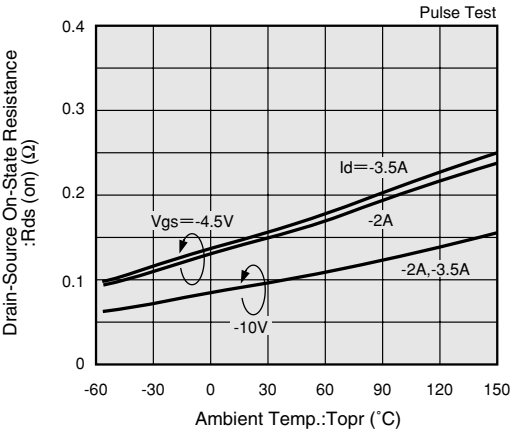
DRAIN-SOURCE ON-STATE RESISTANCE vs. GATE-SOURCE VOLTAGE



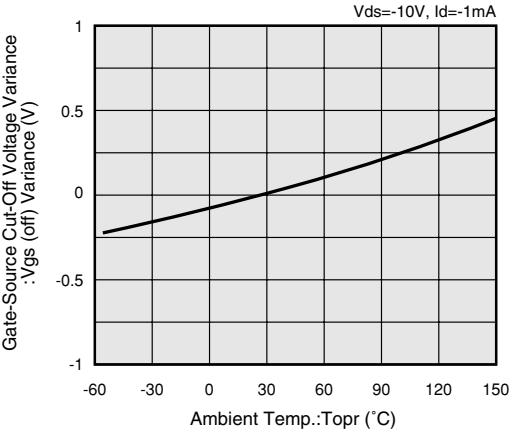
DRAIN-SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



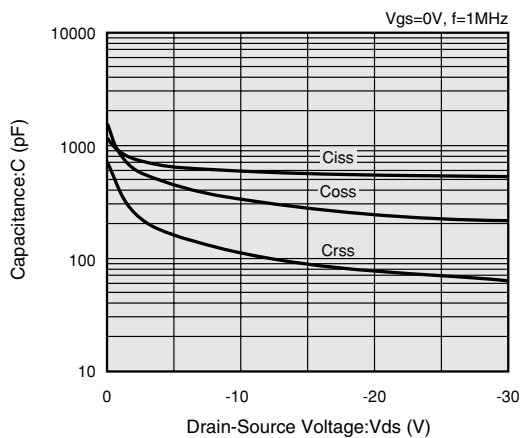
DRAIN-SOURCE ON-STATE RESISTANCE vs. AMBIENT TEMPERATURE



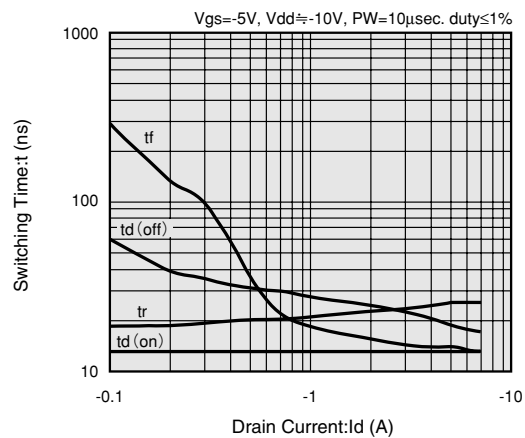
GATE-SOURCE CUT-OFF VOLTAGE VARIANCE vs. AMBIENT TEMPERATURE



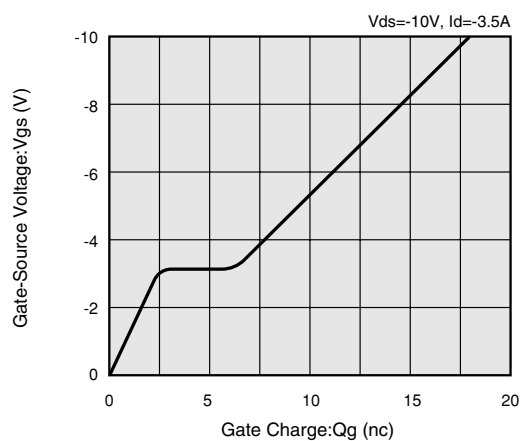
CAPACITANCE vs. DRAIN-SOURCE VOLTAGE



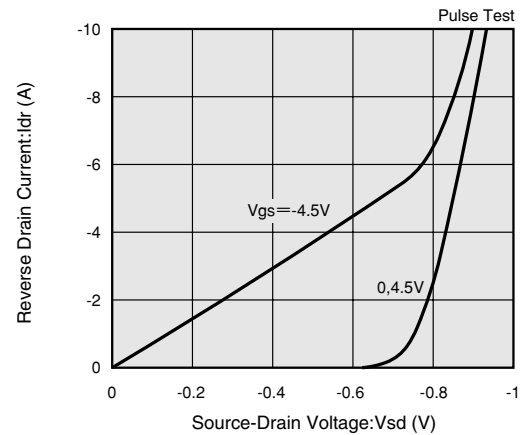
SWITCHING TIME vs. DRAIN CURRENT



GATE-SOURCE VOLTAGE vs. GATE CHARGE



REVERSE DRAIN CURRENT
vs. SOURCE-DRAIN VOLTAGE



STANDARDIZED TRANSITION THERMAL RESISTANCE vs. PULSE WIDTH

