



Micro Commercial Components



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SI3439KDW

N-Channel P-Channel MOSFET

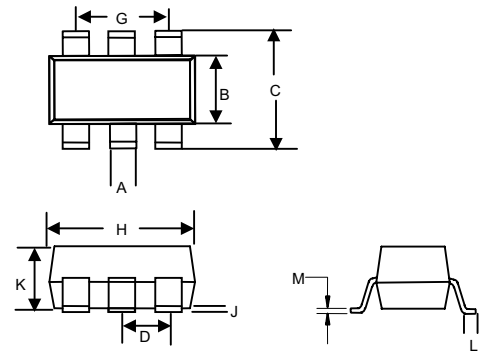
Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Low RDS(on)
- Operated at Low Logic Level Gate Drive
- Surface Mount Package
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings @ 25°C Unless Otherwise Specified

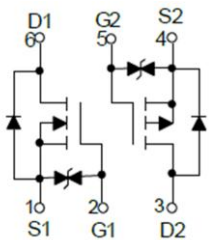
Symbol	Rating	Rating	Unit
N-MOSFET			
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current	0.75	A
I_{DM}	Pulsed Drain Current (tp=10us)	1.8	A
P-MOSFET			
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current	-0.66	A
I_{DM}	Pulsed Drain Current (tp=10us)	-1.2	A
Temperature and Thermal Resistance			
R_{thJA}	Thermal Resistance from Junction to Ambient (note1)	833	$^{\circ}C/W$
P_d	Power Dissipation	150	mW
T_J	Junction Temperature	150	$^{\circ}C$
T_{STG}	Storage Temperature	-55~150	$^{\circ}C$
T_L	Lead Temperature for Soldering Purposes (1/8" from case for 10s)	260	$^{\circ}C$

SOT-363



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.006	.014	0.15	0.35	
B	.045	.053	1.15	1.35	
C	.079	.096	2.00	2.45	
D	.026		0.65Nominal		
G	.047	.055	1.20	1.40	
H	.071	.087	1.80	2.20	
J	---	.004	---	0.10	
K	.031	.043	0.80	1.10	
L	.010	.018	0.26	0.46	
M	.003	.006	0.08	0.15	

Circuit diagram



Marking:



N-ch MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±10V, V _{DS} = 0V			±20	μA
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.35	0.75	1.1	V
Drain-source on-resistance(note 2)	R _{DS(on)}	V _{GS} =4.5V, I _D =0.65A		190	380	mΩ
		V _{GS} =2.5V, I _D =0.55A		260	450	mΩ
		V _{GS} =1.8V, I _D =0.45A		390	800	mΩ
Forward tranconductance(note 2)	g _{FS}	V _{DS} =10V, I _D =0.8A		1.6		S
Diode forward voltage	V _{SD}	I _S =0.15A, V _{GS} = 0V			1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C _{iss}	V _{DS} =16V, V _{GS} =0V, f =1MHz		79	120	pF
Output Capacitance	C _{oss}			13	20	pF
Reverse Transfer Capacitance	C _{rss}			9	15	pF
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	t _{d(on)}	V _{GS} =4.5V, V _{DS} =10V, I _D =500mA, R _{GEN} =10Ω		6.7		ns
Turn-on rise time	t _r			4.8		ns
Turn-off delay time	t _{d(off)}			17.3		ns
Turn-off fall time	t _f			7.4		ns

P-ch MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-20V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±10V, V _{DS} = 0V			±20	μA
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.35	-0.60	-1.1	V
Drain-source on-resistance(note 2)	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1A		450	520	mΩ
		V _{GS} =-2.5V, I _D =-0.8A		650	780	mΩ
		V _{GS} =-1.8V, I _D =-0.5A		950		mΩ
Forward tranconductance(note 2)	g _{FS}	V _{DS} =-10V, I _D =-0.54A		1.2		S
Diode forward voltage	V _{SD}	I _S =-0.5A, V _{GS} = 0V			-1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C _{iss}	V _{DS} =-16V, V _{GS} =0V, f =1MHz		113		pF
Output Capacitance	C _{oss}			15		pF
Reverse Transfer Capacitance	C _{rss}			9		pF
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-200mA, R _{GEN} =10Ω		9		ns
Turn-on rise time	t _r			5.8		ns
Turn-off delay time	t _{d(off)}			32.6		ns
Turn-off fall time	t _f			20.3		ns

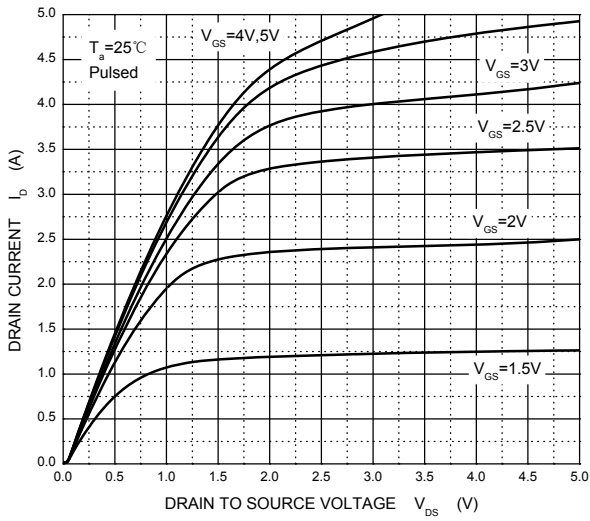
Notes :

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse width=300μs, duty cycle≤2%.
3. Switching characteristics are independent of operating junction temperature.
4. Guaranteed by design, not subject to producing.

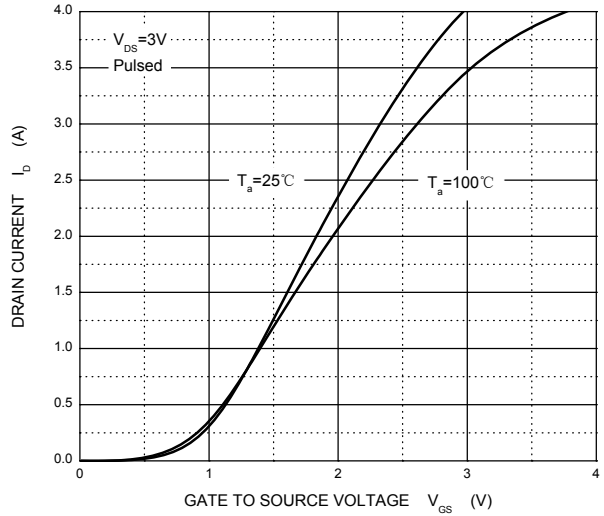
Typical Characteristics

N-Channel MOS

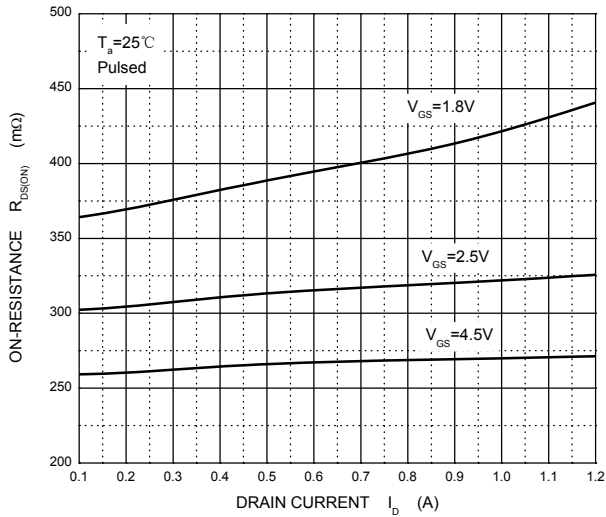
Output Characteristics



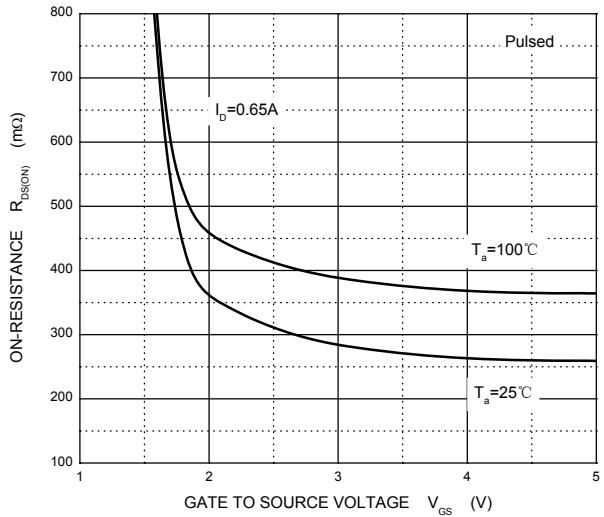
Transfer Characteristics



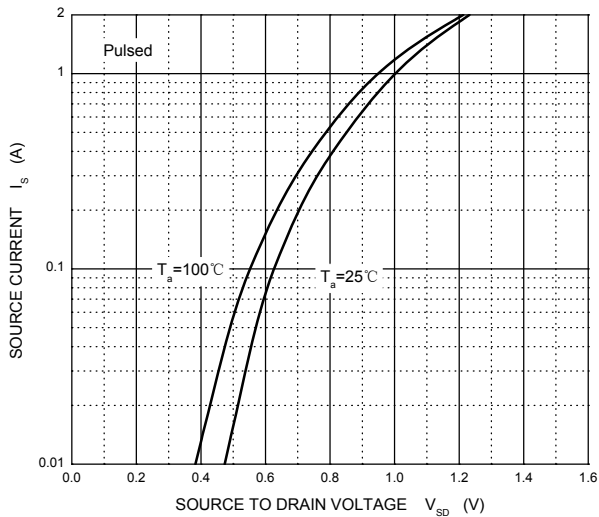
$R_{DS(ON)}$ — I_D



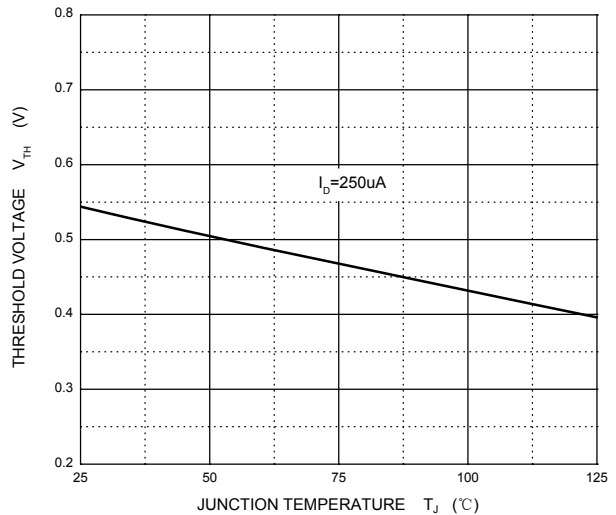
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

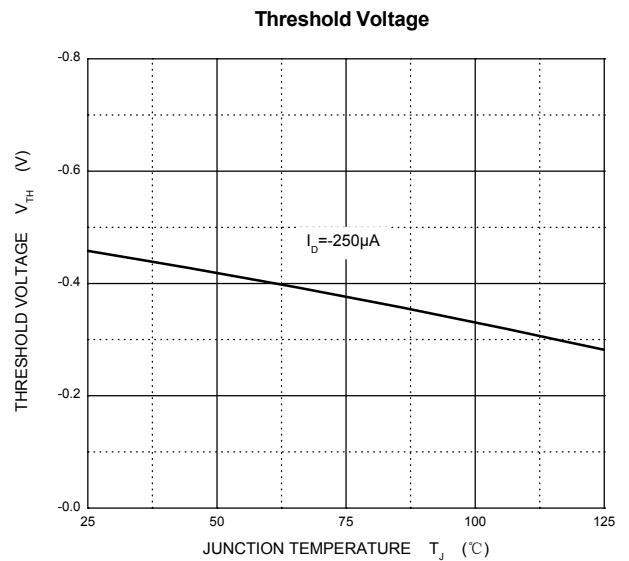
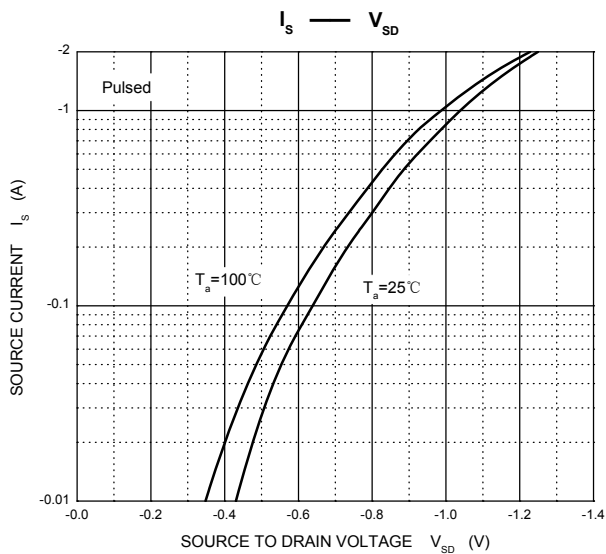
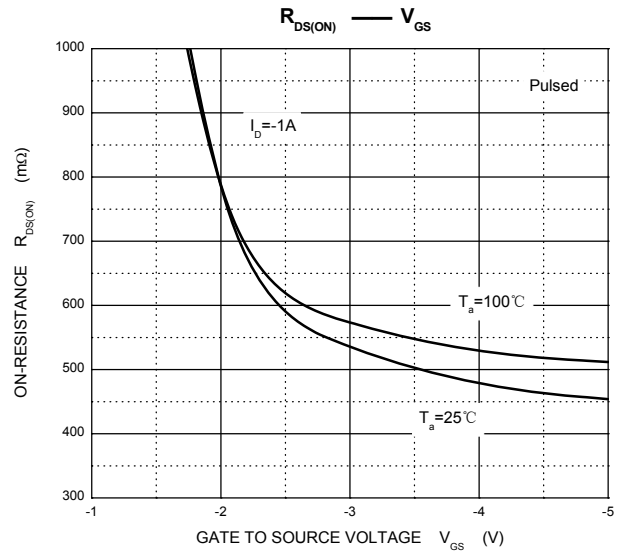
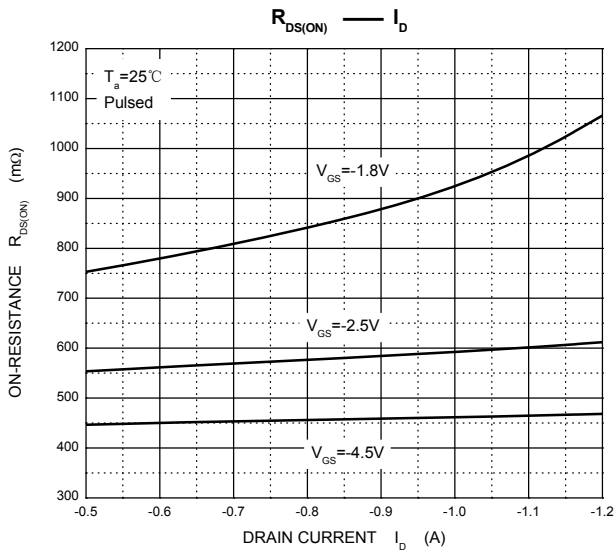
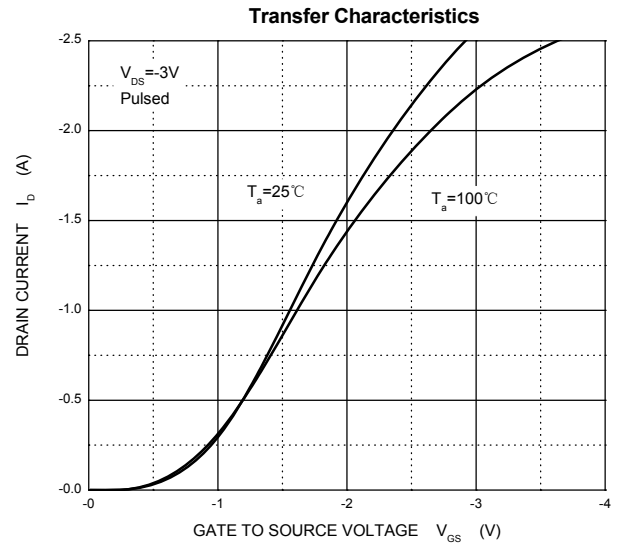
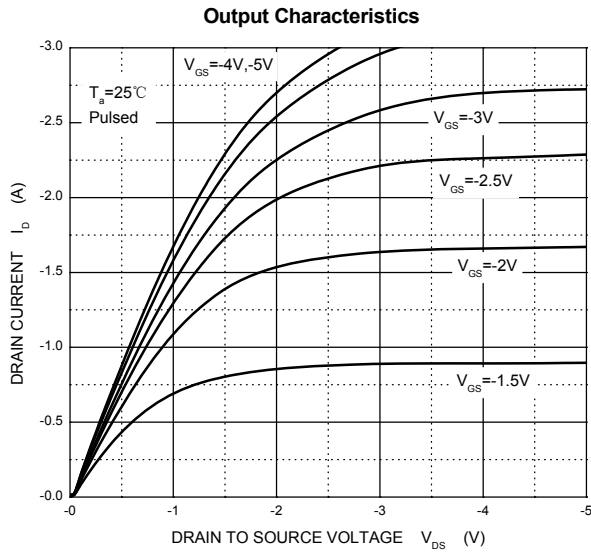


Threshold Voltage



Typical Characteristics

P-Channel MOS





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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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