



Micro Commercial Components



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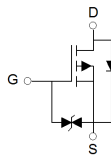
SI3139KL

P-Channel MOSFET

Features

- Lead Free Product is Acquired
- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Operated at Low Logic Level Gate Drive
- P-Channel Switch with Low RDS(on)
- Surface Mount Package
- Marking :39

Equivalent Circuit



Absolute maximum ratings @ 25°C

Symbol	Parameter	Value	Unit
V _{DS}	Drain-source Voltage	-20	V
V _{GS}	Gate-source Voltage	±12	V
I _D	Continuous Drain Current ⁽¹⁾	-0.68	A
I _{DM}	Pulsed Drain Current	-1.2	A
P _D	Total Power Dissipation ⁽²⁾	100	mW
T _J	Operating Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature	-55 to +150	°C
T _L	Lead Temperature for Soldering Purposes	260	°C
R _{thJA}	Thermal Resistance from Junction to Ambient	1250	°C/W

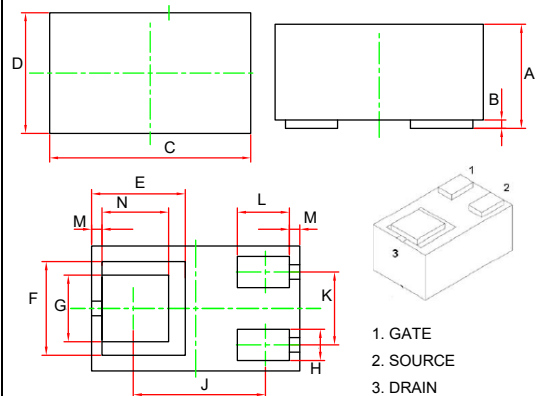
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units	
STATIC PARAMETERS						
V _{(BR)DSS}	Drain-Source Breakdown Voltage (V _{GS} =0Vdc, I _D =-250µAdc)	-20	---	---	Vdc	
V _{GS(th)}	Gate-Threshold Voltage (V _{DS} =V _{GS} , I _D =-250µAdc)	-0.35	---	-1.1	Vdc	
I _{GSS}	Gate-body Leakage (V _{GS} =±10V, V _{DS} =0V)	---	---	±20	µA	
I _{DSS}	Zero Gate Voltage Drain Current (V _{DS} =-20Vdc, V _{GS} =0Vdc)	---	---	-1	µAdc	
V _{SD}	Diode Forward Voltage (I _S =-0.5A, V _{GS} =0V)	---	---	-1.2	Vdc	
r _{DS(on)}	Drain-Source On-Resistance (V _{GS} =-4.5Vdc, I _D =-1.0Adc) (V _{GS} =-2.5Vdc, I _D =-0.8Adc) (V _{GS} =-1.8Vdc, I _D =-0.5Adc)	---	---	0.52 0.70	Ω	
g _{FS}	Forward transconductance (V _{DS} =-10Vdc, I _D =-0.5Adc)	---	1.2	---	S	
DYNAMIC PARAMETERS ⁽⁴⁾						
C _{iss}	Input Capacitance	V _{DS} =-16Vdc, V _{GS} =0Vdc f=1MHz	---	113	170	pF
C _{OSS}	Output Capacitance		---	15	25	
C _{rSS}	Reverse Transfer capacitance		---	9	15	
SWITCHING PARAMETERS ⁽⁴⁾						
t _{d(on)}	Turn-on Time ⁽³⁾	V _{DD} =-4.5V, V _{GS} =-10V, I _D =-200mA R _{GEN} =10Ω	---	9.0	---	ns
t _{d(off)}	Turn-off Time ⁽³⁾		---	32.7	---	
t _r	Rise Time ⁽³⁾		---	5.8	---	
t _f	Fall Time ⁽³⁾		---	20.3	---	

Notes :

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

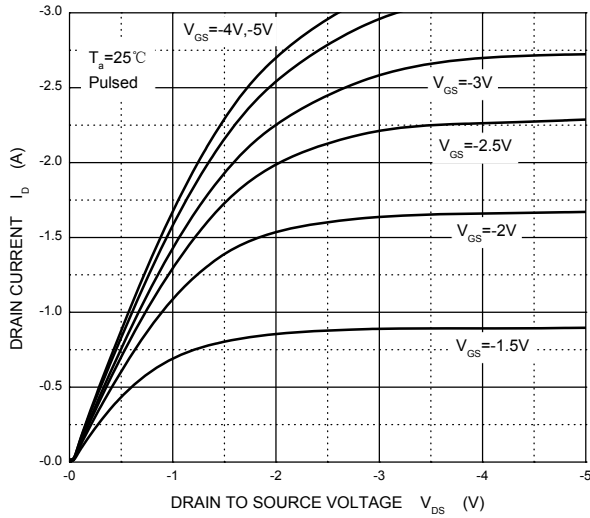
SOT-883



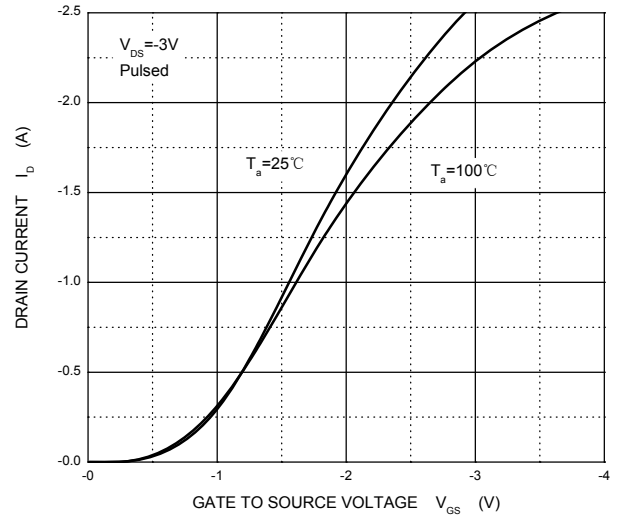
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.450	0.550	
B	0.000	0.004	0.010	0.100	
C	0.037	0.041	0.950	1.050	
D	0.022	0.026	0.550	0.650	
E	0.018REF.		0.450REF.		
F	0.018REF.		0.450REF.		
G	0.011	0.015	0.270	0.370	
H	0.004	0.008	0.100	0.200	
J	0.025REF.		0.635REF.		
K	0.012	0.016	0.300	0.400	
L	0.008	0.012	0.200	0.300	
M	0.002REF.		0.050REF.		
N	0.011	0.015	0.270	0.370	

Typical Characteristics

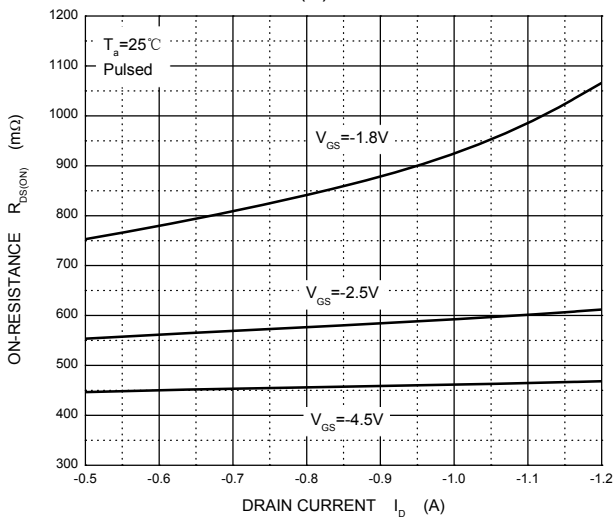
Output Characteristics



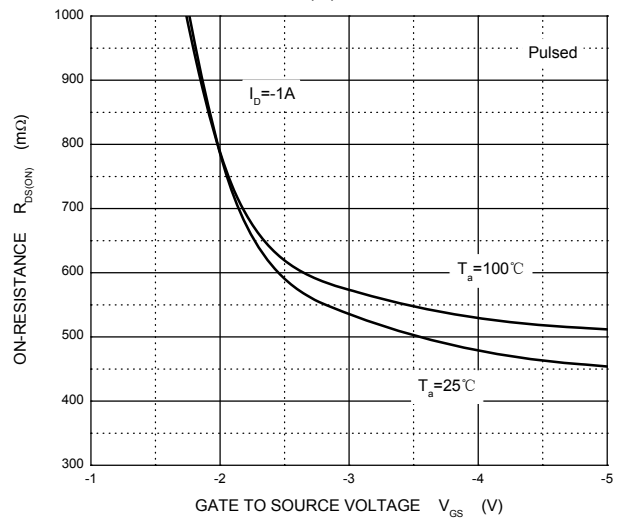
Transfer Characteristics



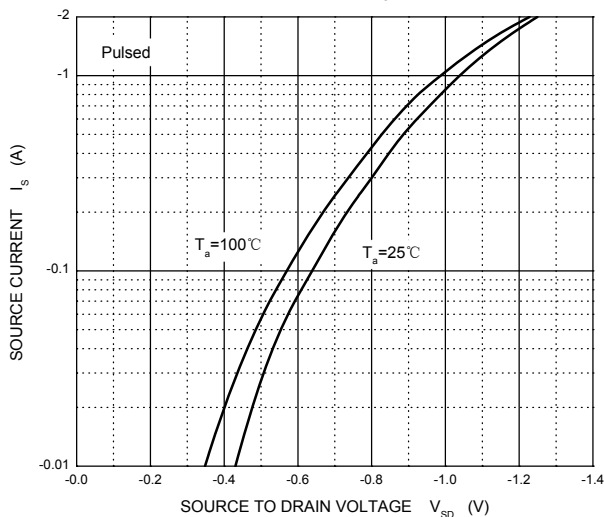
$R_{DS(ON)}$ — I_D



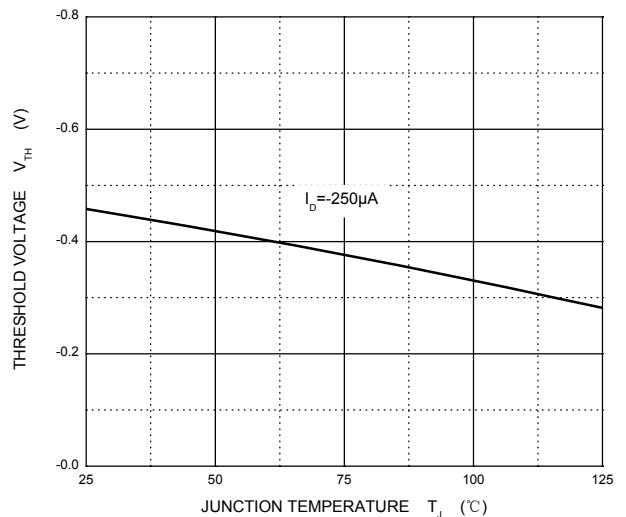
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage





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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 10Kpcs/Reel

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

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