TL-CJ3139KDW

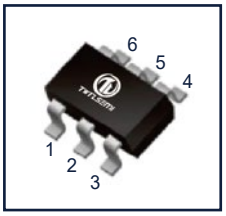
SOT-363 -20V Dual P-Channel Power MOSFET

Description

This Dual P-Channel MOSFET has been designed using advanced Power Trench process to optimize the RDS(ON). Including two P-ch CJ3139K MOSFET (independently) in a package.

General Features

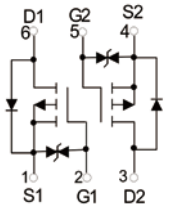
- High-Side Switching
- Low On-Resistance
- Low Threshold
- Fast Switching Speed



SOT-363

Applications

- Drivers:Relays, Solenoids, Lamps, H ammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers



Equivalent Circuit

Ordering information

Product ID	Pack	Naming rule	Marking	Qty(PCS)
CJ3139KDW	SOT-363	CJ3139KDW 产品名称 product name	39K	3000

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DSS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±12	V
$I_{D(DC)}$	Drain Current-Continuous	-0.66	A
$I_{DM(pulse)}$	Drain Current -Pulsed(note1)	-2.64	A
P_D	Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	℃/W
T_J	Junction temperature	150	℃
T_{stg}	Storage temperature	-55~+150	℃

Electrical Characteristics (T_A=25℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
On/Off States						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250μA	-20	---	---	V
$V_{GS(th)}$	Gate Threshold Voltage(note 3)	V_{GS}=V_{DS} , I_D =-250μA	-0.35	-0.45	-1.1	V
I_{GSS}	Gate-Source Leakage Current	V_{DS} =0V, V_{GS} =±10V	---	---	±20	μA
I_{DSS}	Drain-Source Leakage Current	V_{DS} =-20V, V_{GS} =0V	---	---	-1	μA
$R_{DS(ON)}$	Drain-source on-resistance(note 3)	V_{GS}=-4.5V, I_D=-1A	---	430	520	mΩ
		V_{GS}=-2.5V,I_D=-800mA	---	624	700	
		V_{GS}=-1.8V , I_D=-500mA	---	950	---	
gfs	Forward Transconductance	V_{DS} =-10V, I_D=-540mA	0.8	---	---	S
Dynamic Characteristics(note 4)						
C_{iss}	Input Capacitance	V_{DS}=-16V , V_{GS}=0V , f=1MHz	---	---	170	pF
C_{oss}	Output Capacitance		---	---	25	
C_{rss}	Reverse Transfer Capacitance		---	---	15	
Switching Times (note 4)						
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-10V,I_D=-200mA, V_{GS}=-4.5V,R_G=10Ω	---	9	---	ns
T_r	Rise Time		---	5.8	---	
$T_{d(off)}$	Turn-Off Delay Time		---	32.7	---	
T_f	Fall Time		---	20.3	---	
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage(note 3)	I_S=-0.5A, V_{GS}= 0V	---	---	-1.2	V

Notes:

1.Repetitive Rating: Pulse width limited by maximum junction temperature.

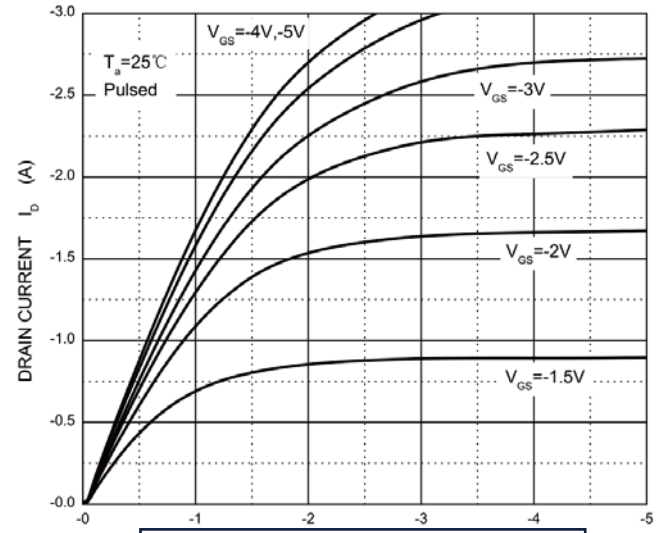
2.This test is performed with no heat sink at Ta=25℃.

3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.

4.These parameters have no way to verify.

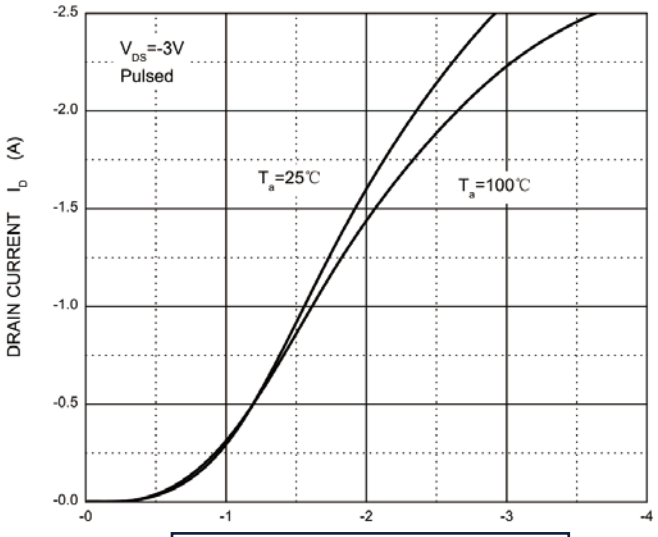
Typical Characteristics

Output Characteristics



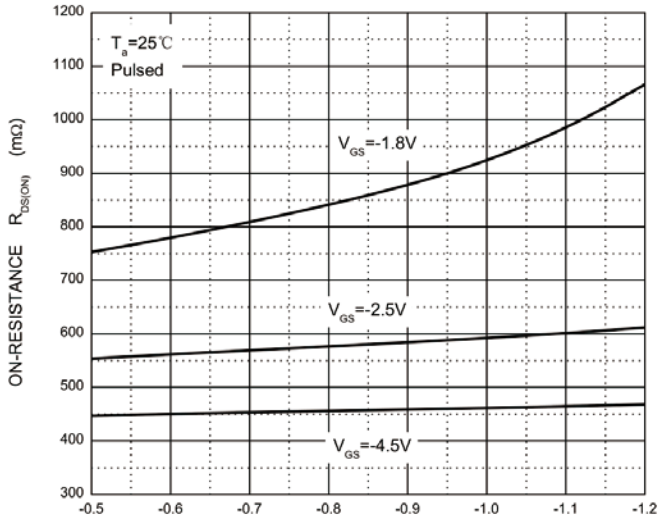
DRAIN TO SOURCE VOLTAGE V_{DS}(V)

Transfer Characteristics



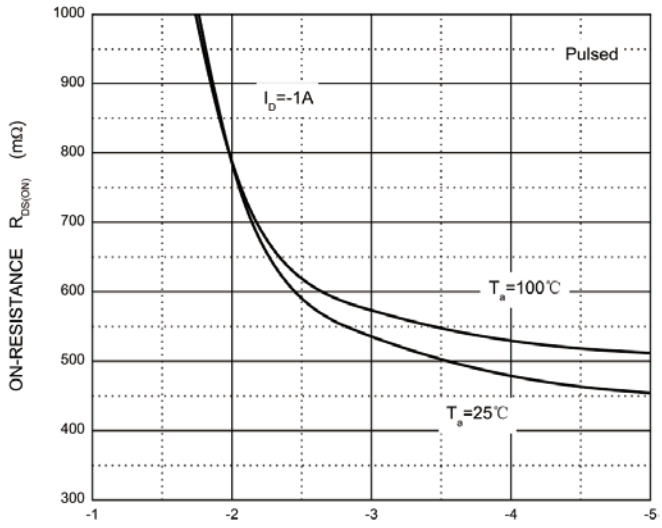
GATE TO SOURCE VOLTAGE V_{GS}(V)

$R_{DS(ON)}$ — I_D



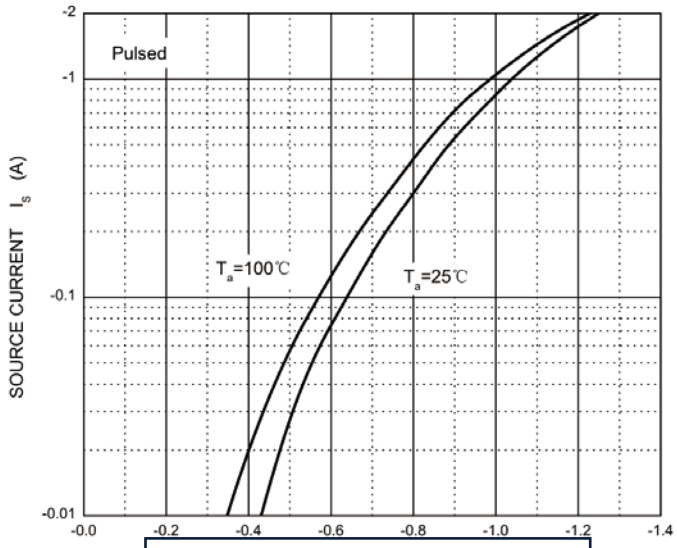
DRAIN CURRENT I_D(A)

$R_{DS(ON)}$ — V_{GS}



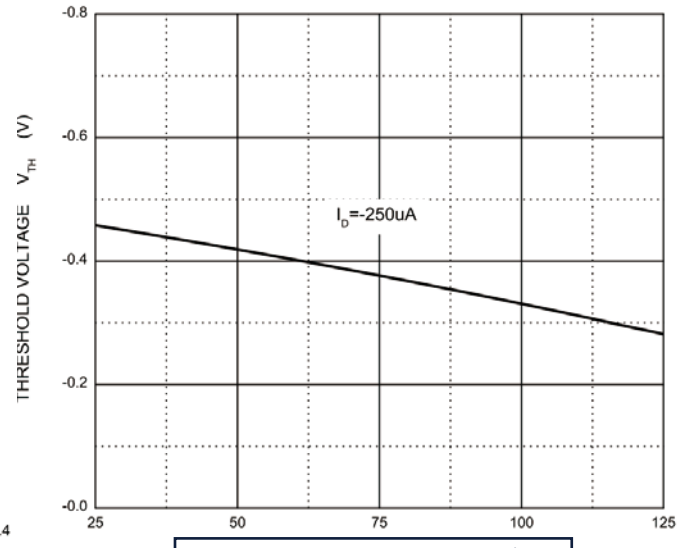
GATE TO SOURCE VOLTAGE V_{GS}(V)

I_S — V_{SD}



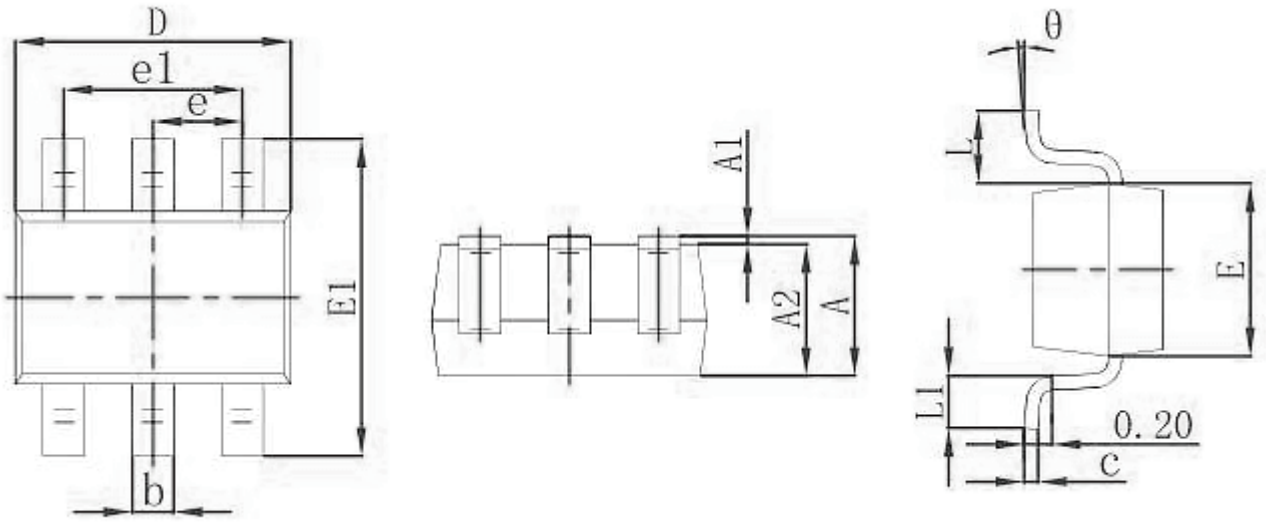
SOURCE TO DRAIN VOLTAGE V_{SD}(V)

Threshold Voltage



JUNCTION TEMPERATURE T_j(℃)

SOT-363 Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°