

Description

The CJ3139K is P-Channel enhancement MOS Field Effect Transistor. Uses advanced trench technology and design to provide excellent $R_{DS(on)}$, with low gate charge. Device is suitable for use in DC-DC conversion, power switch and charging circuit.

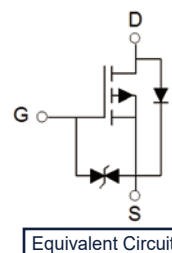
General Features

- Lead Free Product is Acquired
- Surface Mount Package
- P-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected Gate



Applications

- Load/ Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift



Ordering information

Product ID	Pack	Naming rule	Marking	Qty(PCS)
CJ3139K	DFN1006-3L	CJ3139K ↓ 产品名称 product name	39	10000

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current (note 1)	-0.66	A
I_{DM}	Pulsed Drain Current ($t_p=10\mu\text{s}$)	-1.2	A
P_D	Power Dissipation (note 1)	275	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient (note 1)	455	$^{\circ}\text{C}/\text{W}$
T_J, T_{STG}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$
T_L	Lead Temperature for Soldering Purposes	260	$^{\circ}\text{C}$

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

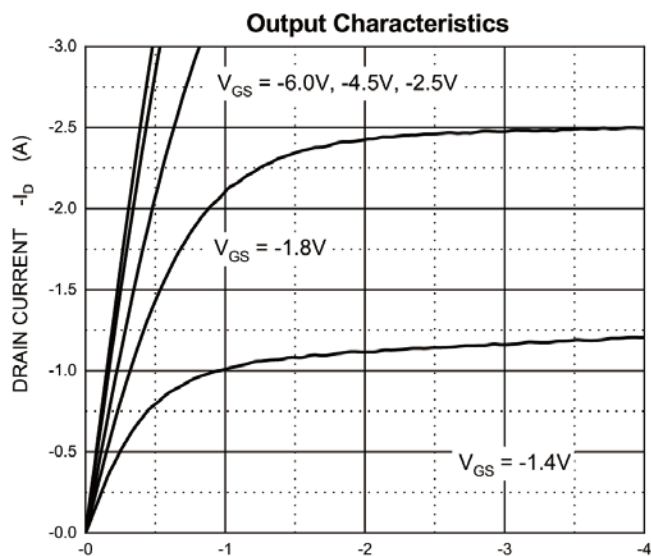
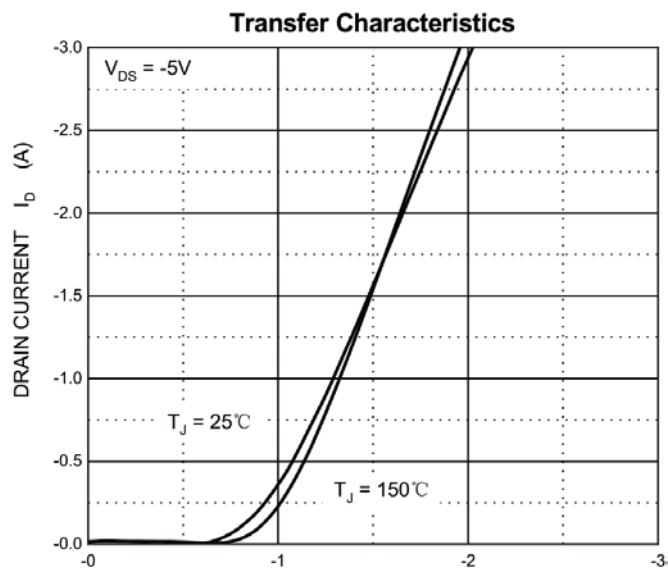
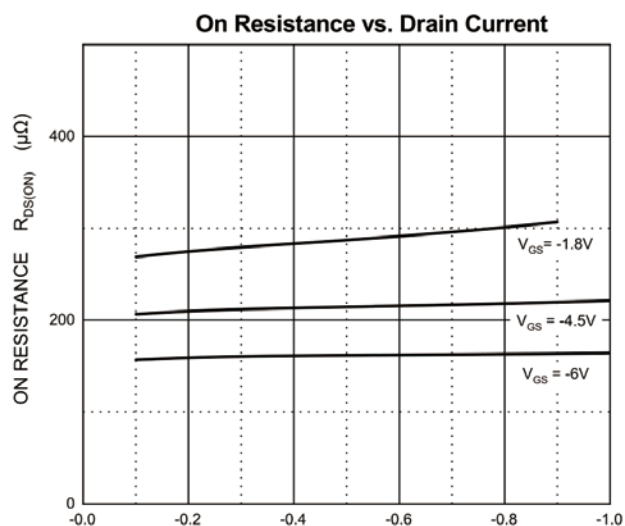
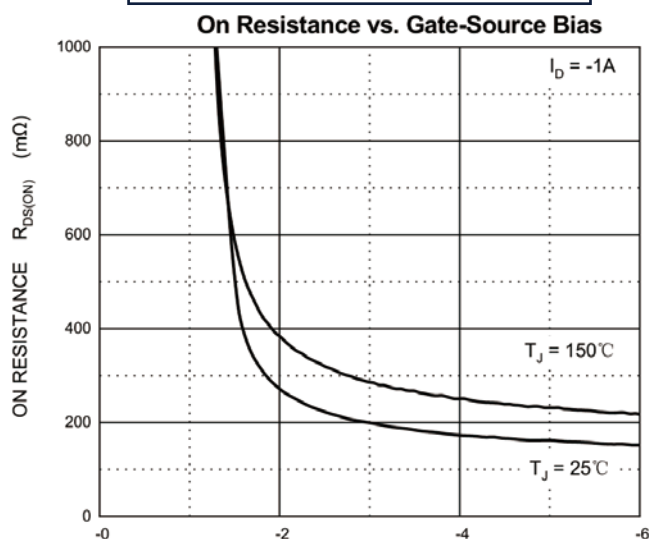
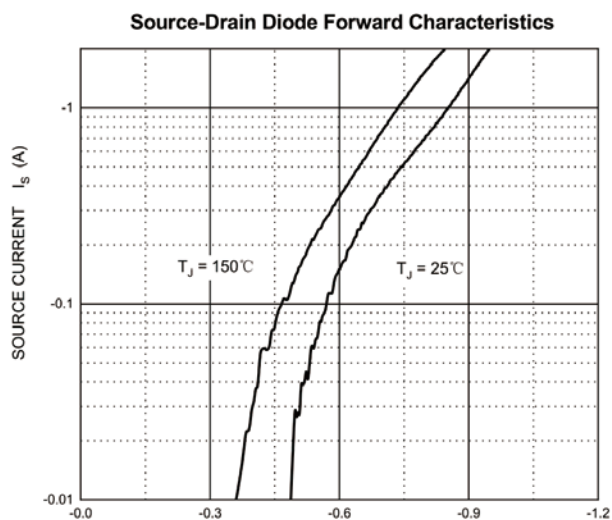
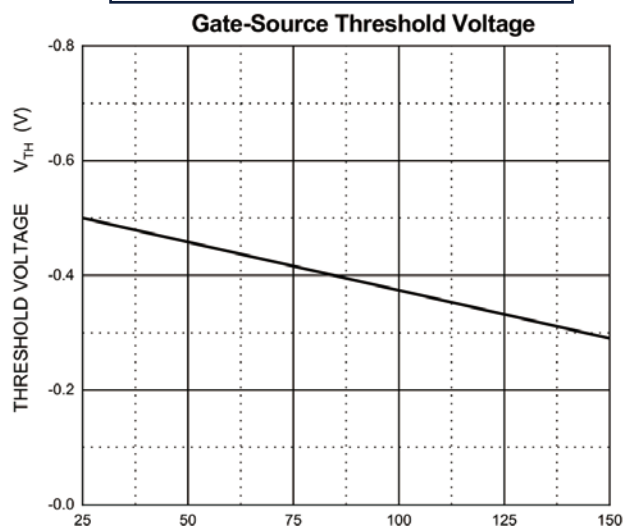
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
STATIC PARAMETERS						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =-250μA	-20	---	---	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-20V,V _{GS} =0V	---	---	-1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±10V , V _{DS} =0V	---	---	±20	μA
V _{GS(th)}	Gate threshold voltage ⁽²⁾	V _{GS} =V _{DS} , I _D =-250μA	-0.35	-0.50	-1.1	V
R _{DS(ON)}	Drain-source on-resistance ⁽²⁾	V _{GS} =-4.5V, I _D =-1A	---	165	450	mΩ
		V _{GS} =-2.5V,I _D =-0.8A	---	218	780	
		V _{GS} =-1.8V , I _D =-0.5A	---	286	---	
g _{FS}	Forward tranconductance ⁽²⁾	V _{DS} =10V, I _D =-0.54A	---	1.8	---	S
V _{SD}	Diode Forward Voltage	I _S =-0.5A,V _{GS} =0V	---	---	-1.2	V
DYNAMIC PARAMETERS(note 4)						
C _{iss}	Input Capacitance ⁽⁴⁾	V _{DS} =-16V , V _{GS} =0V , f=1MHz	---	51	---	pF
C _{oss}	Output Capacitance ⁽⁴⁾		---	16	---	
C _{rss}	Reverse Transfer Capacitance ⁽⁴⁾		---	9	---	
SWITCHING PARAMETERS (note 4)						
Q _g	Total gate charge	V _{GS} =-10V,V _{DS} =-10V, I _D =-1A	---	2.8	---	nC
Q _{gs}	Gate-source charge		---	0.6	---	
Q _{gd}	Gate-drain charge		---	0.4	---	
T _{d(on)}	Turn-On Delay Time ⁽³⁾	V _{DD} =-10V,V _{GS} =-10V, I _D =-500mA,R _{GEN} =10Ω	---	5.0	---	ns
T _r	Rise Time ⁽³⁾		---	23	---	
T _{d(off)}	Turn-Off Delay Time ⁽³⁾		---	504	---	
T _f	Fall Time ⁽³⁾		---	243	---	

Notes:

- 1.Surface mounted on FR4 board using 1 square inch pad size, 1oz copper.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

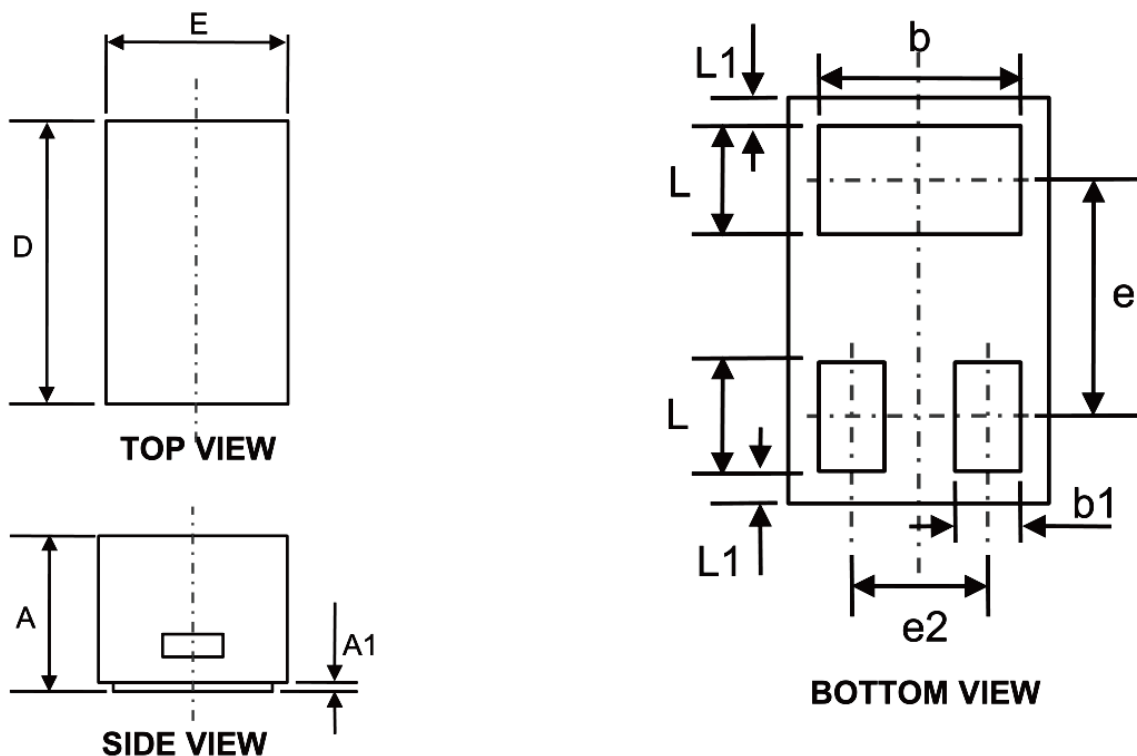


Typical Characteristics

DRAIN TO SOURCE VOLTAGE $-V_{DS}(V)$ GATE TO SOURCE VOLTAGE $V_{GS}(V)$ DRAIN CURRENT $I_D(A)$ GATE TO SOURCE VOLTAGE $V_{GS}(V)$ SOURCE TO DRAIN VOLTAGE $V_{SD}(V)$ JUNCTION TEMPERATURE $T_J(^{\circ}C)$



DFN1006-3L Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.400	0.500	0.016	0.020
A1	0.000	0.050	0.000	0.002
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.450	0.550	0.018	0.022
e	0.650 REF.		0.026 REF.	
e2	0.350 REF.		0.014 REF.	
L1	0.050 REF.		0.002 REF.	
L	0.200	0.300	0.008	0.012
b1	0.100	0.200	0.004	0.008