

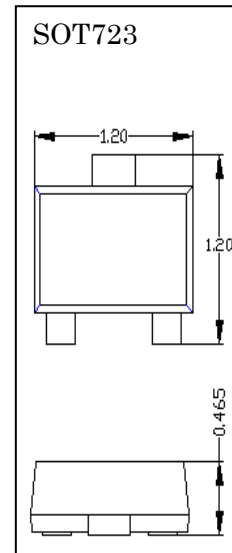
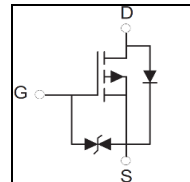
DATA SHEET

PPL3139K

- ◇ 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

Device Marking Code	
CJ3139K	KD

Circuit Diagram



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Drain Current-Continuous (Note 1)	-0.66	A
I_{DM}	Pulsed Drain Current ($t_p = 10\mu s$)	-1.2	A
P_D	Power Dissipation (Note1)	150	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	833	$^{\circ}C/W$
T_j	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}C$

ELECTRICAL CHARACTERISTICS @25°C Unless Otherwise Specified

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-20			V
$V_{GS(th)}$	Gate-Threshold Voltage (Note2)	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35	-0.45	-1.1	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS} = \pm 10V, V_{DS}=0V$			± 20	μA
$R_{DS(on)}$	Drain-Source On-Resistance (Note2)	$V_{GS}=-4.5V, I_D=-1A$		430	520	$m\Omega$
		$V_{GS}=-2.5V, I_D=-0.8A$		624	700	$m\Omega$
		$V_{GS}=-1.8V, I_D=-0.5A$		950		$m\Omega$
g_{FS}	Forward Transconductance (Note2)	$V_{DS} = -10V, I_D = -0.54A$		1.2		S
V_{SD}	Diode Forward Voltage	$I_S = -0.5A, V_{GS} = 0V$			-1.2	V

DYNAMIC CHARACTERISTICS(Note4)

C _{iss}	Input Capacitance	$V_{DS}=-16V, V_{GS}=0V,$ $f=1MHz$		113	170	pF
C _{oss}	Output Capacitance			15	25	
C _{rss}	Reverse Transfer Capacitance			9	15	

SWITCHING CHARACTERISTICS (Note4)

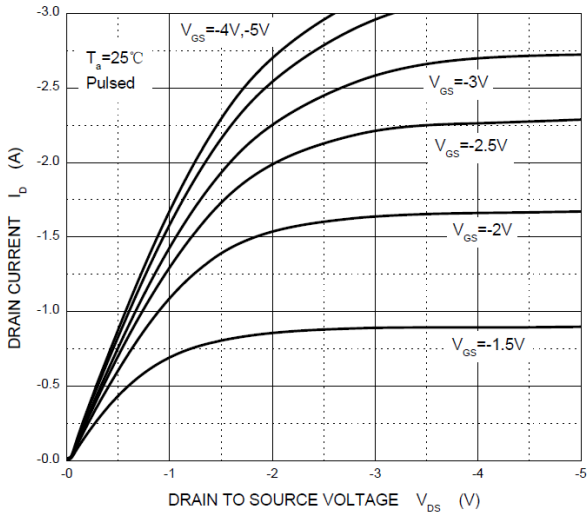
t _{d(on)}	Turn-on Delay Time (Note3)	$V_{GS}=-4.5V, V_{DS}=-10V,$ $I_D=-200mA, R_{GEN}=10\Omega$		9		nS
t _r	Turn-on Rise Time (Note3)			5.8		
t _{d(off)}	Turn-off Delay Time (Note3)			32.7		
t _f	Turn-off Fall Time (Note3)			20.3		

Notes:

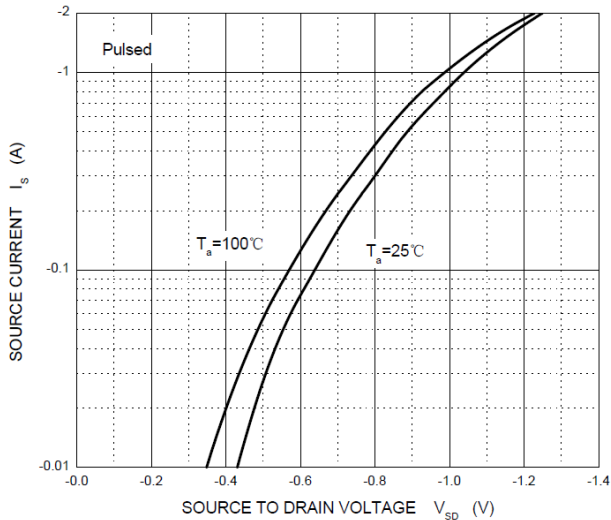
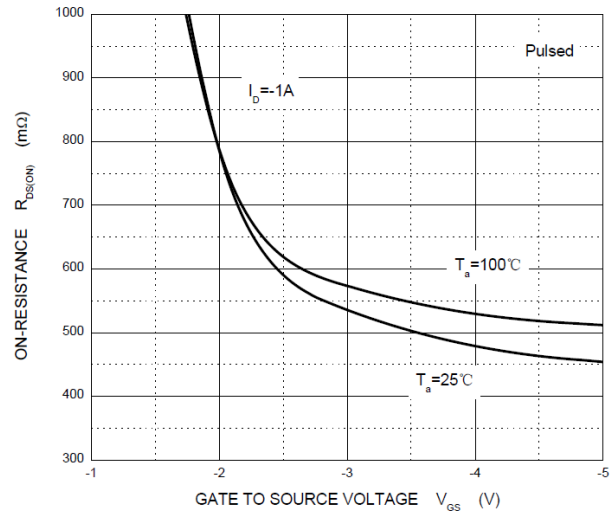
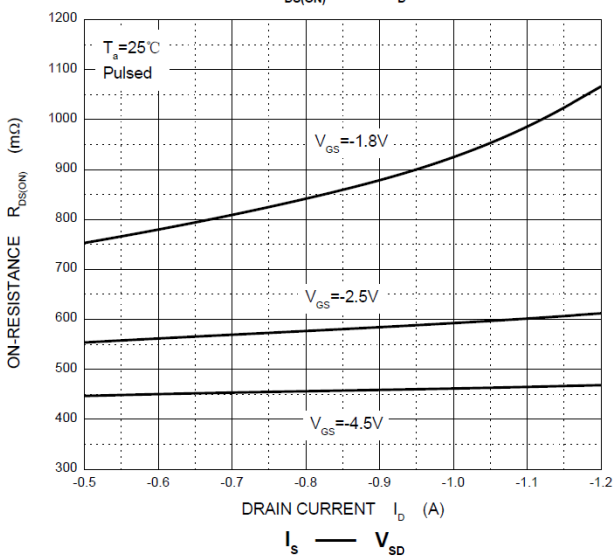
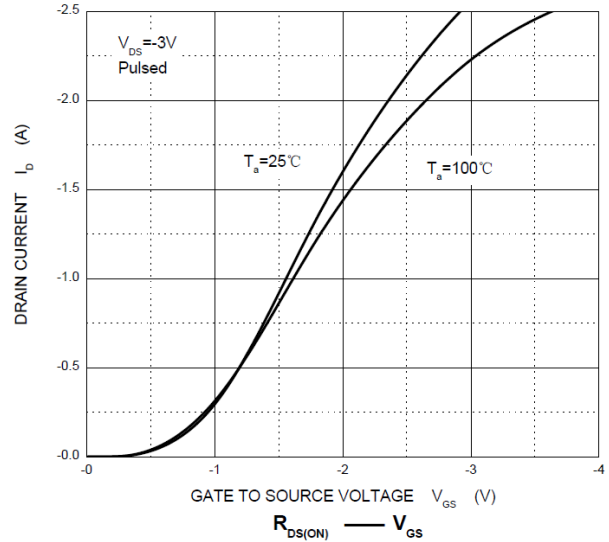
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test: Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

CHARACTERISTICS CURVE

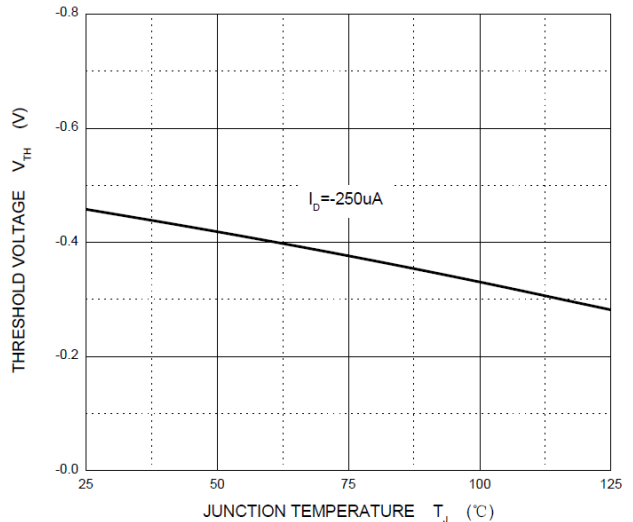
Output Characteristics



Transfer Characteristics



Threshold Voltage



ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
CJ3139K	SOT723	Tape & Reel 8000pcs /7" Reel	8mm	4mm	Conductive	

PACKAGE DIMENSIONS

Package outline : SOT723

Top view

Side view

SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.430	0.500
A1	0.000	0.050
b	0.170	0.270
b1	0.270	0.370
c	0.080	0.150
D	1.150	1.250
E	1.150	1.250
E1	0.750	0.850
e	0.800 TYP.	
θ	0°	7°

Front view

Soldering Pattern

Notice:

1. Lead plating: Pb free solder
2. Lead thickness includes solder plating
3. Lead frame: CAC-5
4. Other Tolerance: ±0.05
5. Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions
6. Unit: mm