

GR3139K

P-Channel Power MOSFET

VOLTAGE 20 Volt **CURRENT** 0.66 Ampere

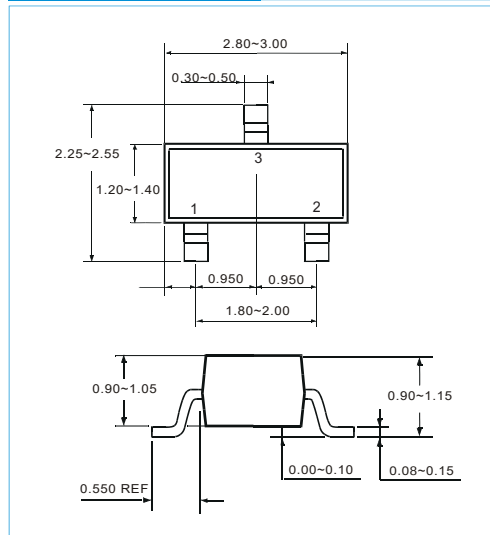
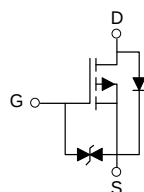
SOT-23 Unit:mm

FEATURES

- P-Channel Switch with Low RDS(on)
- Operated at Low Logic Level Gate Drive
- Lead free in compliance with EU RoHS

MECHANICAL DATA

- Case Material: Molded Plastic.
- UL Flammability Classification Rating 94V-0



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

Parameter	Symbol	Value	Unit
Drain-Source voltage	V _{DSS}	-20	V
Typical Gate-Source Voltage	V _{GS}	±12	
Drain Current-Continuous	I _{D(DC)}	-0.66	A
Drain Current -Pulsed(note1)	I _{DM(pulse)}	-1.2	
Power Dissipation (note 2)	P _D	350	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	357	°C/W
Storage Temperature	T _j	150	°C
Junction Temperature	T _{stg}	-55~150	

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ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

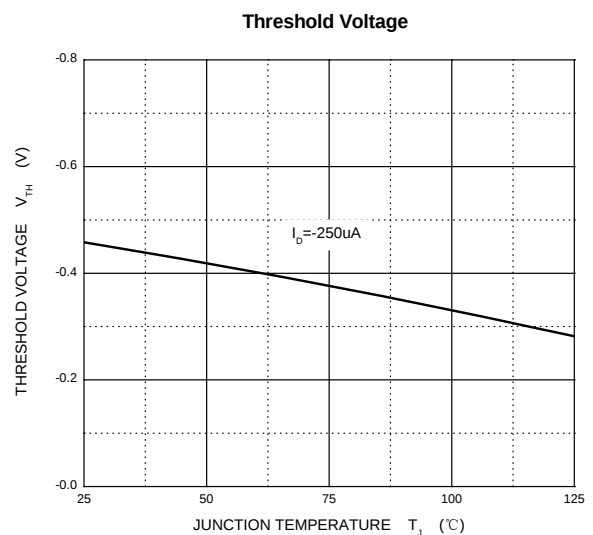
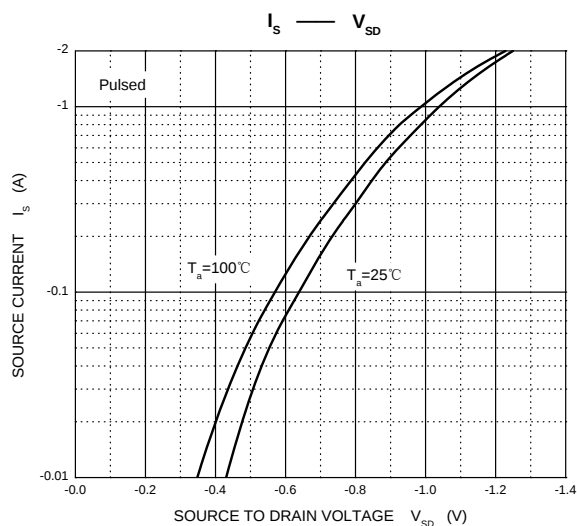
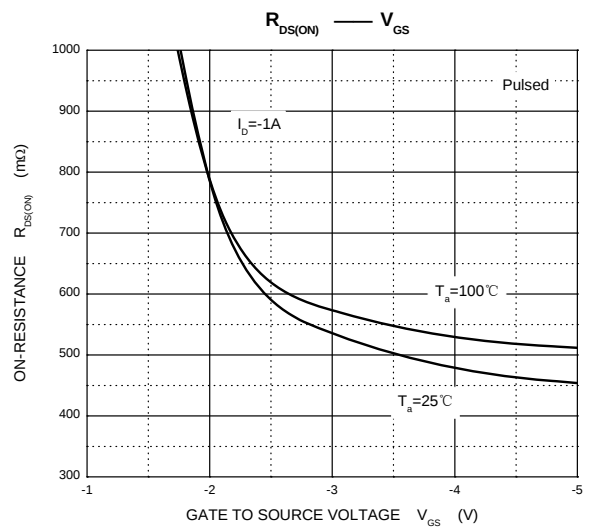
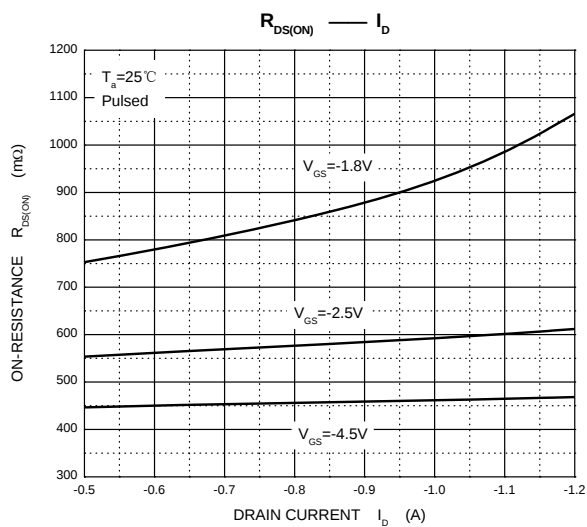
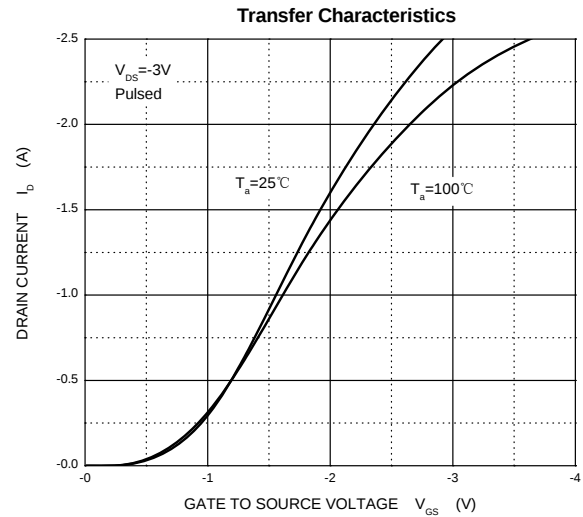
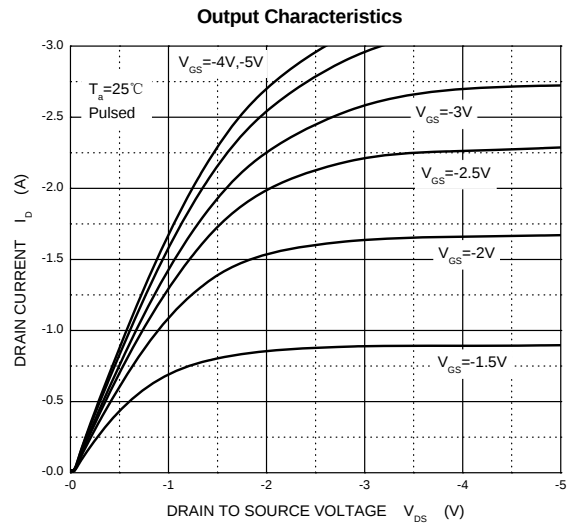
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-20V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±10V, V _{DS} = 0V			±20	μ
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.35	-0.45	-1.1	V
Drain-source on-resistance (note 2)	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1A		430	520	Ω
		V _{GS} =-2.5V, I _D =-0.8A		624	700	Ω
		V _{GS} =-1.8V, I _D =-0.5A		950		mΩ
Forward transconductance (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	170	pF
Output capacitance	C _{oss}			15	25	pF
Reverse transfer capacitance	C _{rss}			9	15	pF
SWITCHING CHARACTERISTICS (note 4)						
Turn-on delay time (note 3)	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-200mA, R _{GEN} =10Ω		9		ns
Turn-on rise time (note 3)	t _r			5.8		ns
Turn-off delay time (note3)	t _{d(off)}			32.7		ns
Turn-off fall time (note 3)	t _f			20.3		ns

Notes :

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

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Electrical characteristic curves

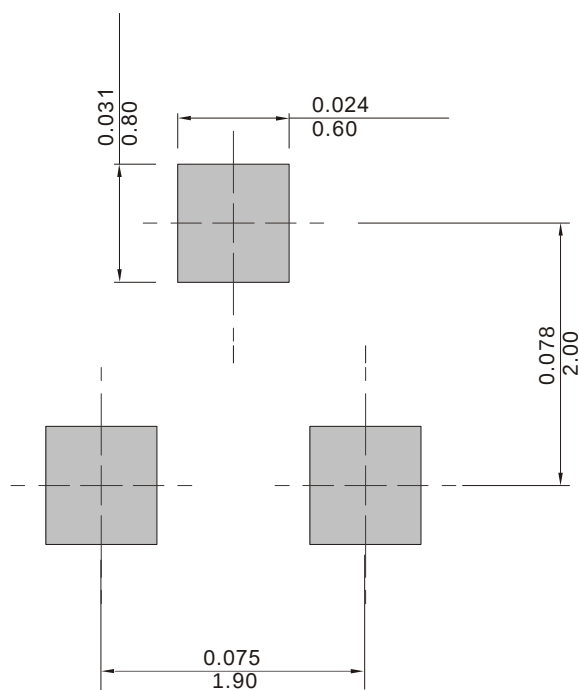


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MOUNTING PAD LAYOUT

SOT-23

Unit:Inch(mm)



ORDER INFORMATION

• Packing information

Part Number	Case	Reel Size	QUANTITY
GR3139K	SOT-23	7 Inch	3000