



HY3139K

P-CHANNEL MOSFET

-0.66A, -20V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The HY3139K meet the ROHS and Green Product requirement with full function reliability approved.

FEATURE

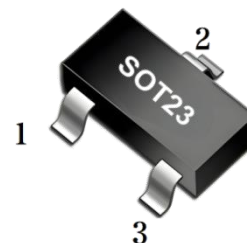
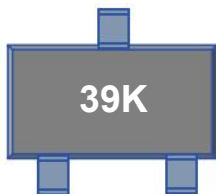
- * Lead Free Product is Acquired
- * Surface Mount Package
- * P-Channel Switch with Low RDS(on)
- * Operated at Low Logic Level Gate Drive

APPLICATION

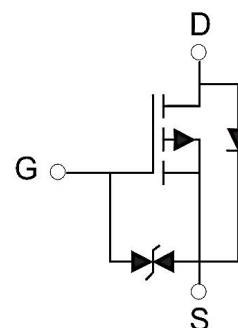
- * Load/Power Switching
- * Interfacing, Logic Switching
- * Battery Management for Ultra Small Portable Electronics

MARKING

Type Code: Marking: 39K



Equivalent Circuit



ABSOLUTE MAXIMUM RATINGS(TA=25°C, unless otherwise specified.)

SYMBOL	PARAMETER	VALUE	UNIT
VDS	Drain-Source Voltage	-20	V
VGS	Gate Source Voltage	±12	V
ID	Continuous Drain Current (note 1)	-0.66	A
IDM	Pulsed Drain Current (tp=10 μs)	-1.2	A
PD	Power Dissipation (Note 1)	0.35	W
TJ	Junction Temperature	150	°C
TSTG	Storage Temperature	-55~150	°C
RθJA	Thermal Resistance From Junction To Ambient (Note 1)	357	°C/W
TL	Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	260	°C

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

1.Surface mounted on FR4 board using the minimum recommended pad size.



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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-20			V
Gate Threshold Voltage(Note 2)	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =-250μA	-0.35	-0.45	-1.1	V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V			±20	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Drain-source on-state resistance(Note 2)	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-1A		430	520	mΩ
		V _{GS} =-2.5V, I _D =-0.8A		624	700	
		V _{GS} =-1.8V, I _D =-0.5A		950		
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 _{GS} =0V, V _{DS} =-16V, f=1MHz		113	170	pF
Output Capacitance	C _{OSS}			15	25	
Reverse Transfer Capacitance	C _{RSS}			9	15	
SWITCHING CHARACTERISTICS(Note 4)						
Turn-On Delay Time(Note 3)	td(on)	V _{DS} =-10V, I _D =-0.2A, V _{GS} =-4.5V, R _{GEN} =10Ω		9		ns
Rise Time(Note 3)	tr			5.8		
Turn-Off Delay Time(Note 3)	td(off)			32.7		
Fall Time(Note 3)	tf			20.3		

Notes:

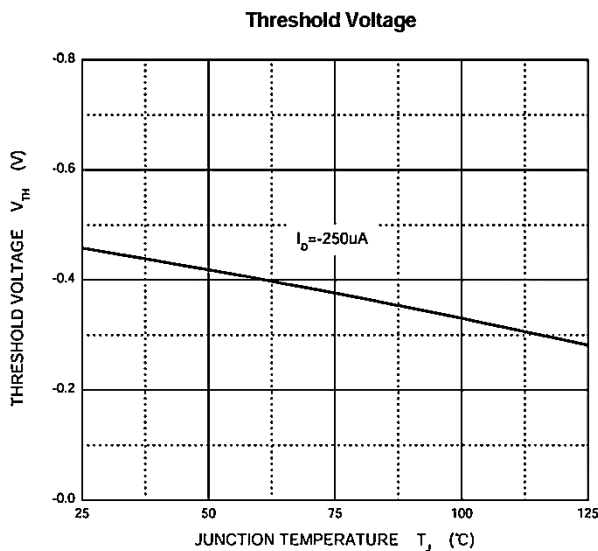
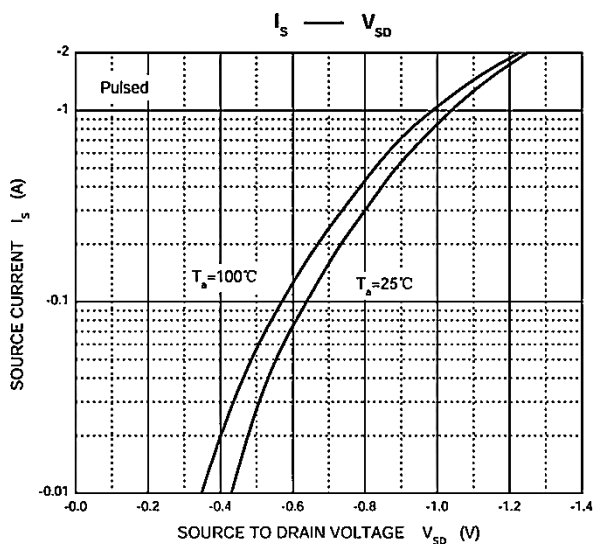
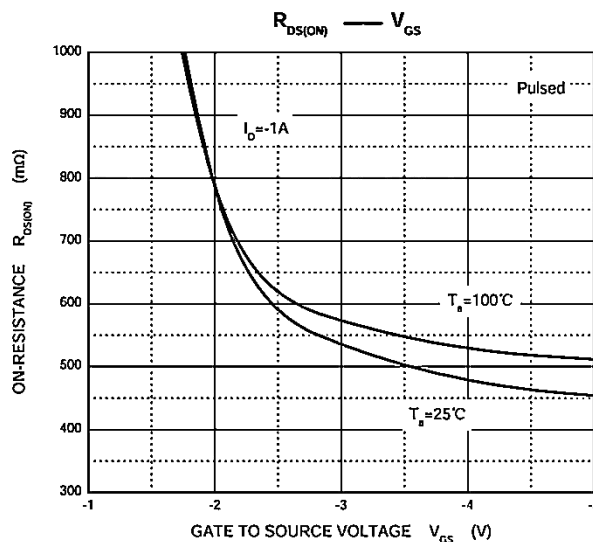
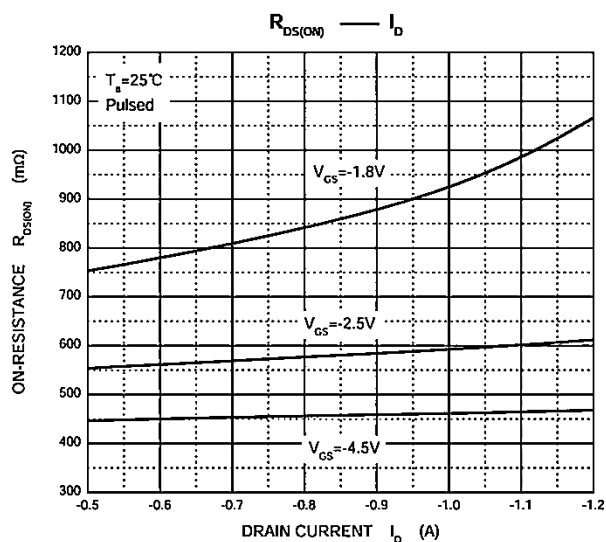
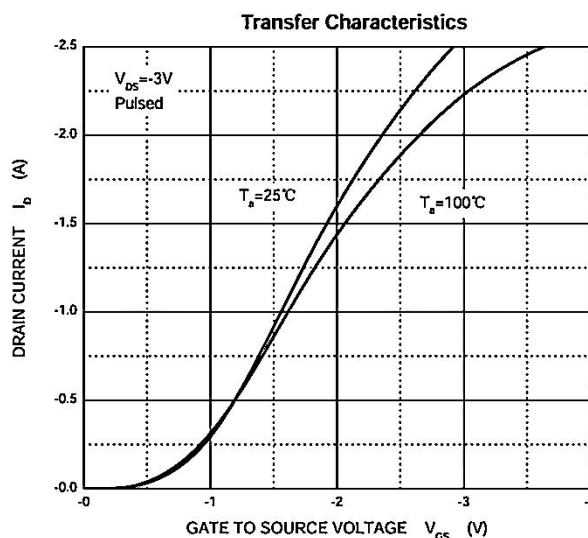
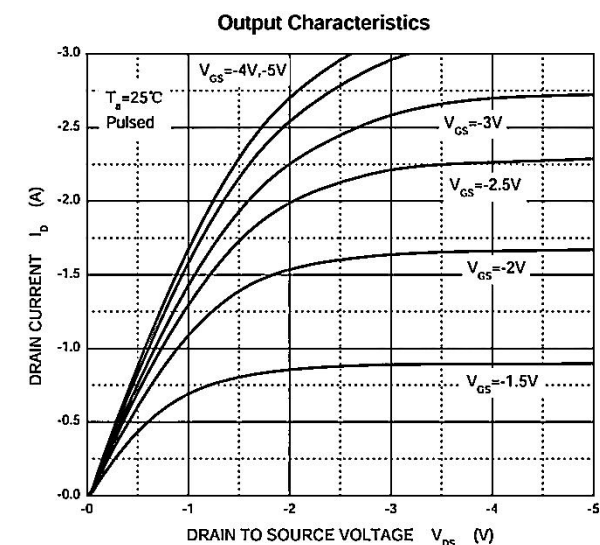
1. Pulse Test : Pulse Width =300 μs , Duty Cycle = 2 %.
2. Switching characteristics are independent of operating junction temperatures.
3. Guaranteed by design, not subject to producing.



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TYPICAL CHARACTERISTICS

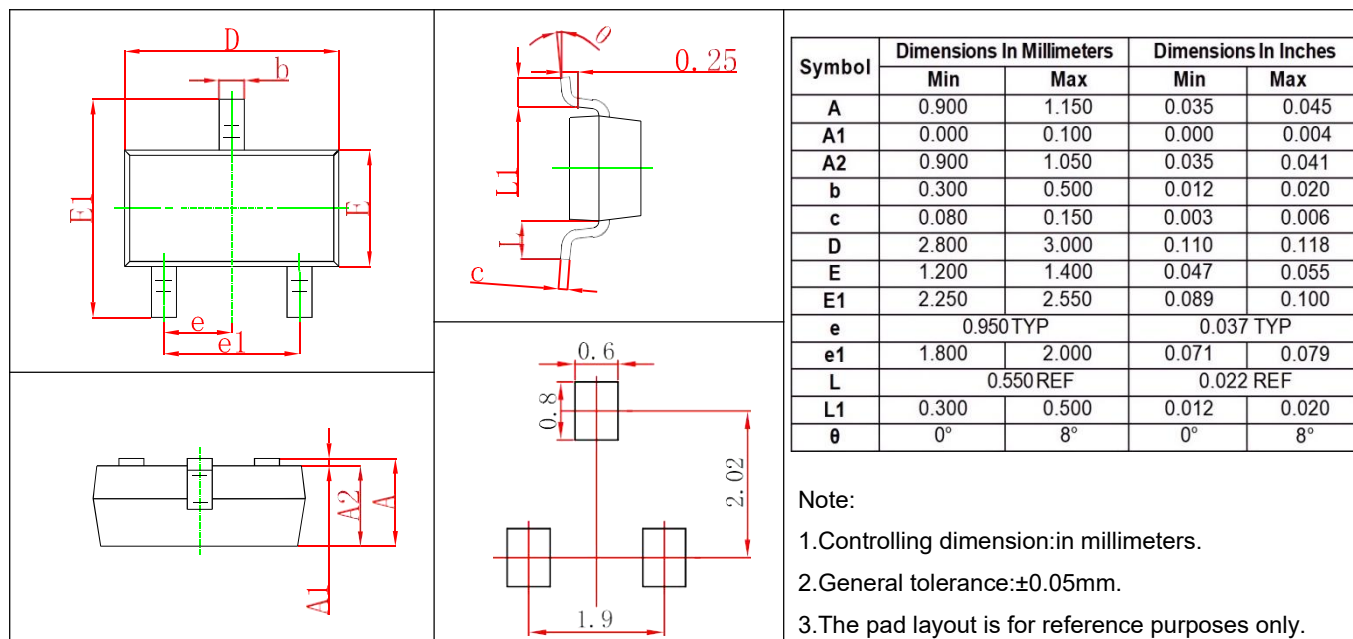




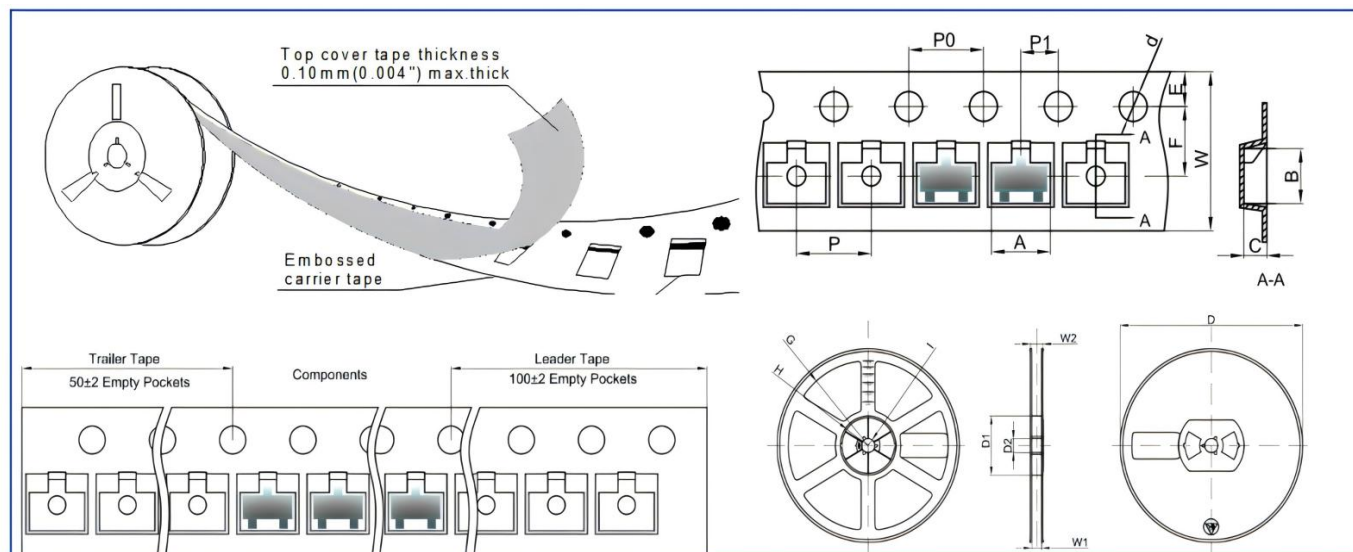
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SOT23 PACKAGE OUTLINE DIMENSIONS



REEL PACKING



Dimensions are in millimeter

PKG TYPE	A	B	C	d	E	F	Po	P	P1	W
SOT-23	3.15	2.77	1.22	Φ1.50	1.75	3.50	4.00	4.00	2.00	8.00
Reel Option	D	D1	D2	G	H	I	W1	W2	Q.TY PER REEL	
7" Dia	Φ178.0	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30	3000PCS	
13" Dia	Φ330.0	/	13.00	/	/	R6.50	9.50	12.30	10000PCS	