重庆平伟实业股份有限公司
CHONGQING PINGWEI ENTERPRISE CO.,LTD

PW3439K

20V N-Channel + P-Channel MOSFET

-0.66A -20V；$R_{DS(ON)typ}$=450mΩ@-4.5V，
$R_{DS(ON)typ}$=650mΩ@-2.5V,$R_{DS(ON)typ}$=950mΩ@-1.8V.
0.75A20V；$R_{DS(ON)typ}$=190mΩ@4.5V，
$R_{DS(ON)typ}$=260mΩ@2.5V,$R_{DS(ON)typ}$=390mΩ@1.8V.

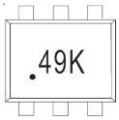
FEATURE

- Surface Mount Package
- Low $R_{DS(on)}$)
- Operated at Low Logic Level Gate Drive
- ESD Protected Gate

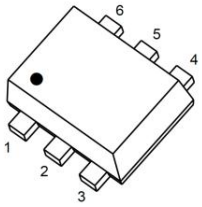
Application

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

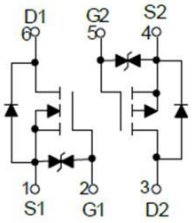
MARKING:



SOT-563



Schematic diagram



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
P-MOSFET			
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current(1)	I_D	-0.66	A
Pulsed Drain Current(tp=10μs)	I_{DM}	-1.2	A
N-MOSFET			
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current(1)	I_D	0.75	A
Pulsed Drain Current(tp=10μs)	I_{DM}	1.8	A
Temperature and Thermal Resistance			
Thermal Resistance from Junction to Ambient(1)	$R_{\theta JA}$	833	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃
Lead Temperature for Soldering Purposes(1/8” from case for 10s)	T_L	260	℃

P-channel MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	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	μA
Gate threshold voltage(2)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.35	-0.60	-1.1	V
Drain-source on-resistance(2)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-1A		450	580	mΩ
		V_{GS} =-2.5V, I_D =-0.8A		650	840	
		V_{GS} =-1.8V, I_D =-0.5A		950		
Forward tranconductance	g_{FS}	V_{DS} =-10V, I_D =-0.54A		1.2		S
Diode forward voltage(3)	V_{DS}	I_S=-0.5A, V_{GS} = 0V			-1.2	V
DYNAMIC CHARACTERISTICS(4)						
Input Capacitance	C_{iss}	V_{DS} =-16V,V_{GS} =0V,f =1MHz		113		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			9		
SWITCHING CHARACTERISTICS(3,4)						
Turn-on delay time	$t_{d(on)}$	V_{DS}=-10V,I_D=-200mA, V_{GS}=-4.5V,R_G=10Ω		9		nS
Turn-on rise time	t_r			5.7		
Turn-off delay time	$t_{d(off)}$			32.6		
Turn-off fall time	t_f			20.3		

N-channel MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	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	μA
Gate threshold voltage(2)	$V_{GS(th)}$	V_{DS} =VGS, I_D =250μA	0.35	0.75	1.1	V
Drain-source on-resistance(2)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =650mA		190	260	mΩ
		V_{GS} =2.5V, I_D =550mA		260	360	
		V_{GS} =1.8V, I_D =450mA		390	590	
Forward tranconductance	g_{FS}	V_{DS} =10V, I_D =800mA		1.6		S
Diode forward voltage(3)	V_{DS}	I_S=0.15A, V_{GS} = 0V			1.2	V
DYNAMIC CHARACTERISTICS(4)						
Input Capacitance	C_{iss}	V_{DS}=16V,V_{GS}=0V,f=1MHz		79	120	pF
Output Capacitance	C_{oss}			13	20	
Reverse Transfer Capacitance	C_{rss}			9	15	
SWITCHING CHARACTERISTICS(3,4)						
Turn-on delay time	$t_{d(on)}$	V_{DS}=10V,I_D=500mA, V_{GS}=4.5V,R_G=10Ω		6.7		nS
Turn-on rise time	t_r			4.8		
Turn-off delay time	$t_{d(off)}$			17.3		
Turn-off fall time	t_f			7.4		

Notes:

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

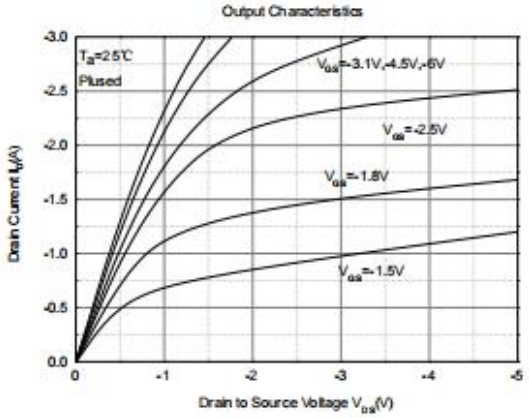
2.Pulse Test : Pulse Width=300μs, Duty Cycle=2%.

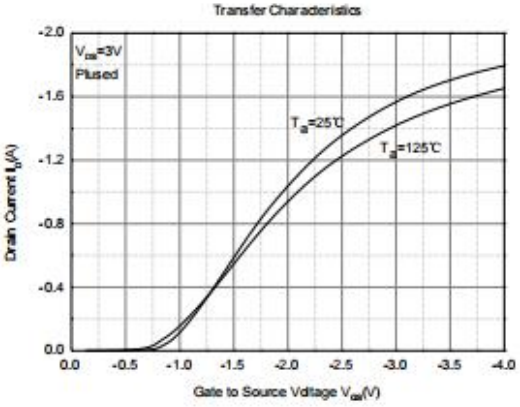
3.Switching characteristics are independent of operating junction temperatures.

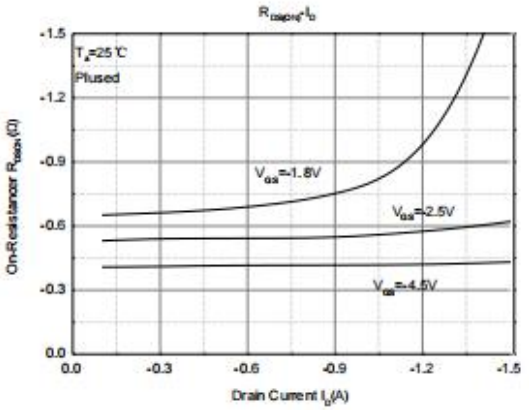
4.Guaranteed by design, not subject to producting.

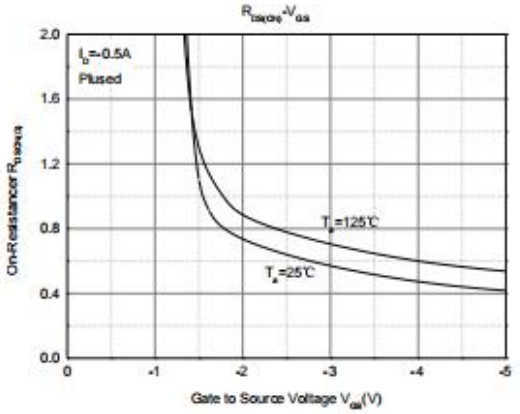
Typical Electrical and Thermal Characteristics

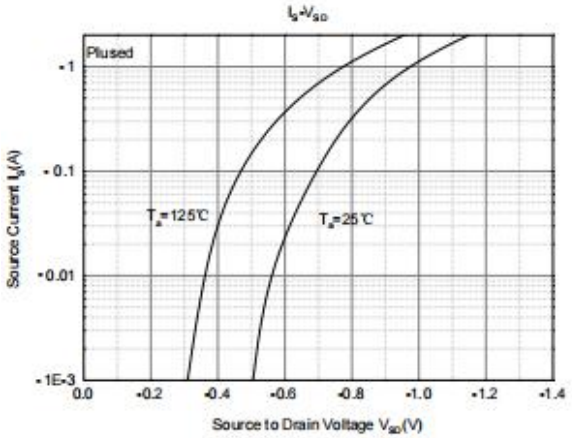
P-Channel MOS

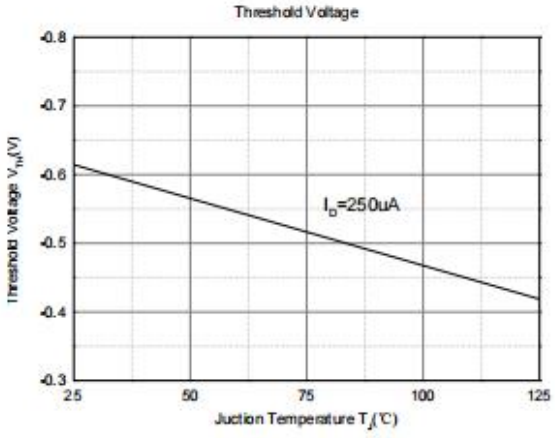


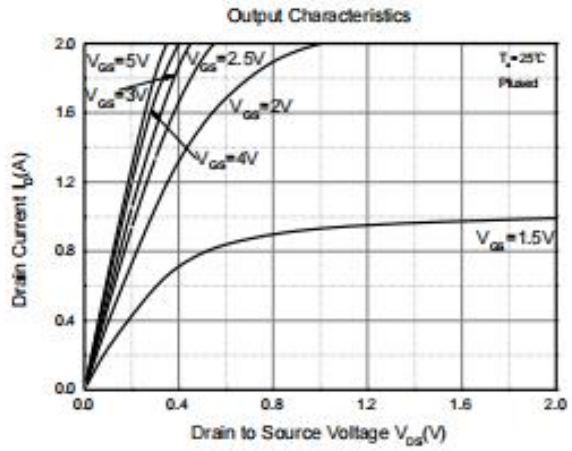


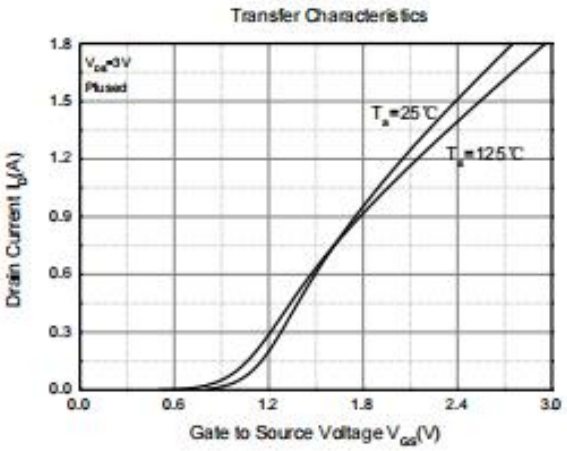


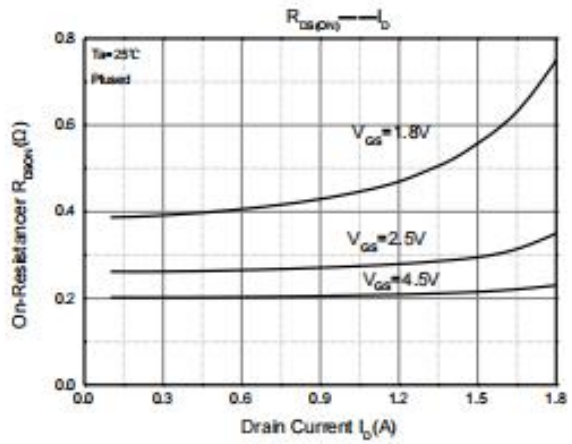


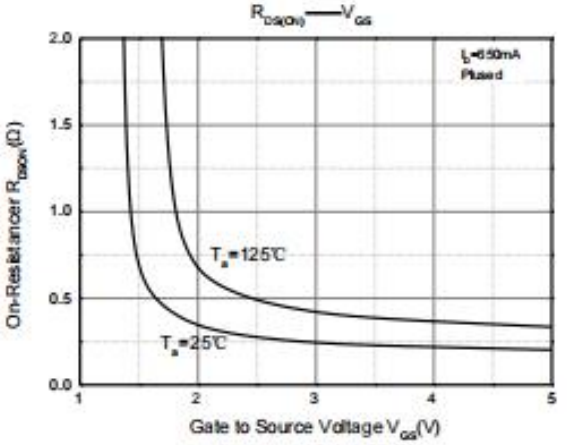


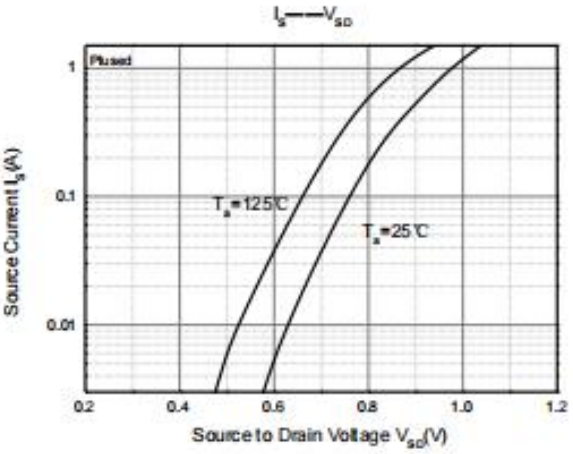


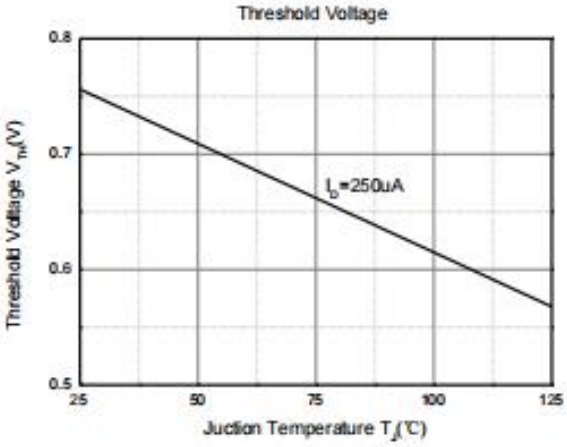

Output Characteristics
Drain Current I_D(A)
Drain to Source Voltage V_{DS}(V)
V_{GS}=5V
V_{GS}=3V
V_{GS}=2.5V
V_{GS}=2V
V_{GS}=4V
V_{GS}=1.5V
T_a=25℃
Pluse


Transfer Characteristics
Drain Current I_D(A)
Gate to Source Voltage V_{GS}(V)
T_a=25℃
T_a=125℃
Pluse

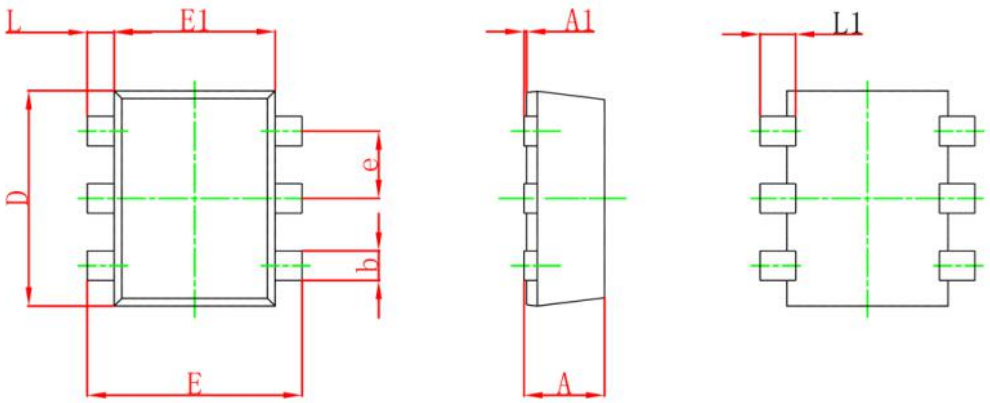

$R_{DS(ON)}$——I_D
On-Resistance $R_{DS(ON)}$(Ω)
Drain Current I_D(A)
V_{GS}=1.8V
V_{GS}=2.5V
V_{GS}=4.5V
Pluse

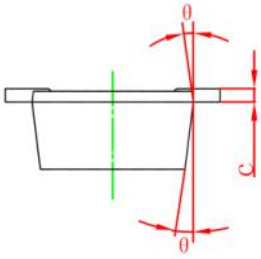

$R_{DS(ON)}$——V_{GS}
On-Resistance $R_{DS(ON)}$(Ω)
Gate to Source Voltage V_{GS}(V)
T_a=125℃
T_a=25℃
Pluse


I_S——V_{SD}
Source Current I_S(A)
Source to Drain Voltage V_{SD}(V)
T_a=125℃
T_a=25℃
Pluse


Threshold Voltage
Threshold Voltage V_{th}(V)
Junction Temperature T_j(℃)
I_D=250uA

SOT-563 Package Information

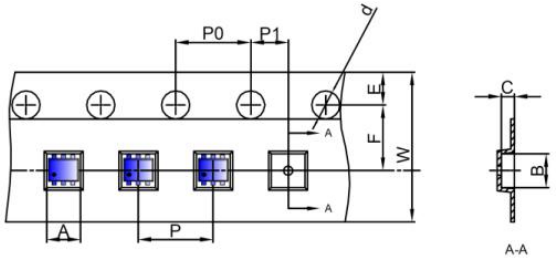




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
c	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E1	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
L1	0.200	0.400	0.008	0.016
θ	7 °REF.		7 °REF.	

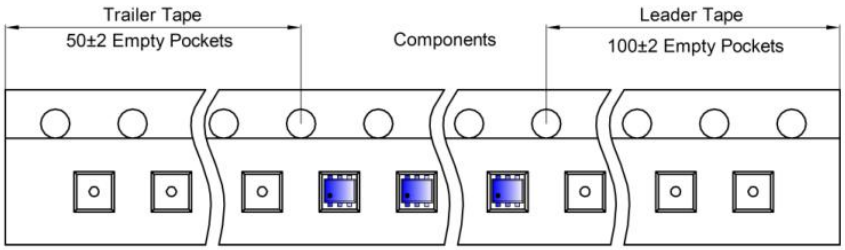
SOT-563 Tape and Reel

SOT-563 Embossed Carrier Tape

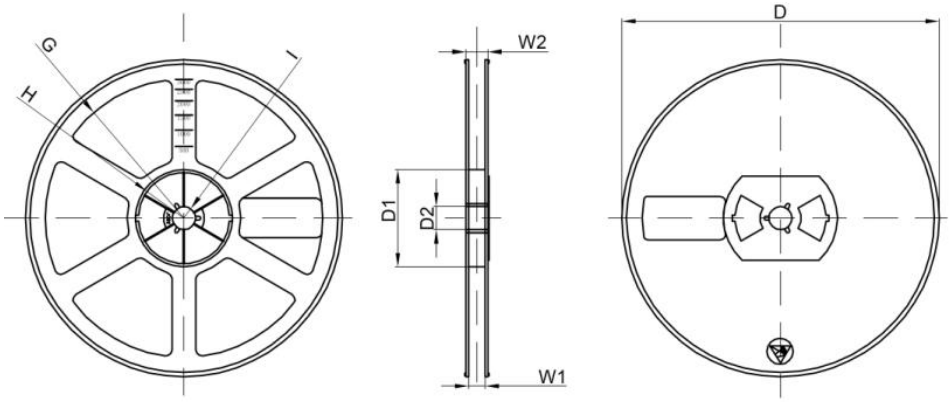


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-563	1.78	1.78	0.69	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-563 Tape Leader and Trailer



SOT-563 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	