

## PW3139KDW

### 20V Dual P-Channel MOSFET

$-0.66A -20V$ ;  $R_{DS(ON)typ}=450m\Omega@-4.5V$ ,  $R_{DS(ON)typ}=650m\Omega@-2.5V$   
 $R_{DS(ON)typ}=950m\Omega@-1.8V$ .

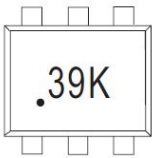
#### FEATURE

- Surface Mount Package
- P-Channel Switch with Low  $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive

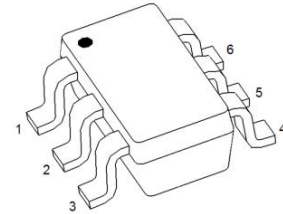
#### Application

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

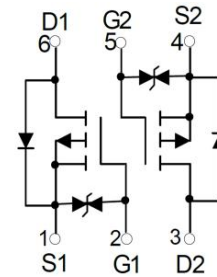
#### MARKING:



#### SOT-363



#### Schematic diagram



**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

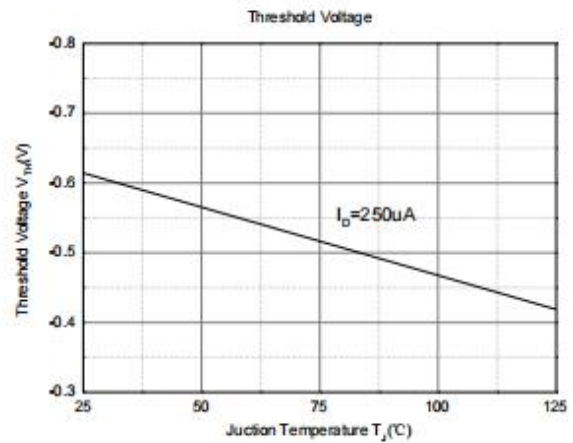
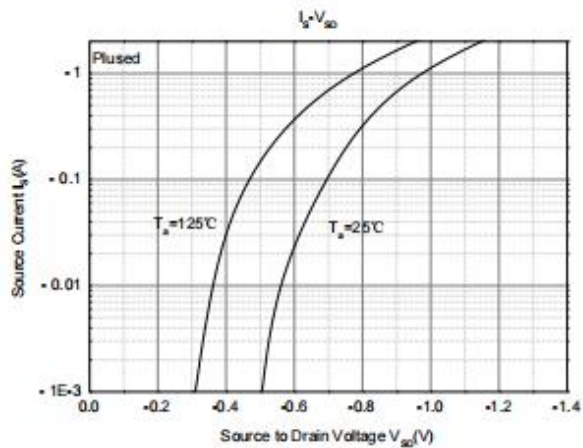
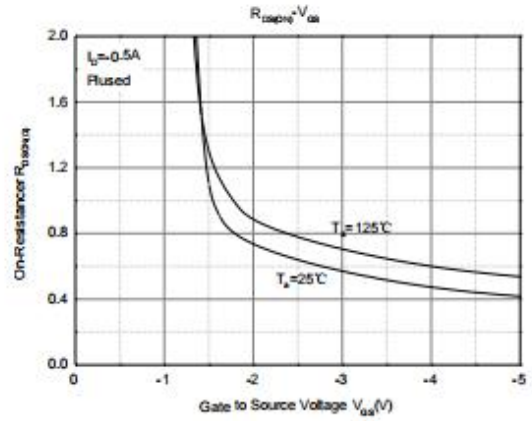
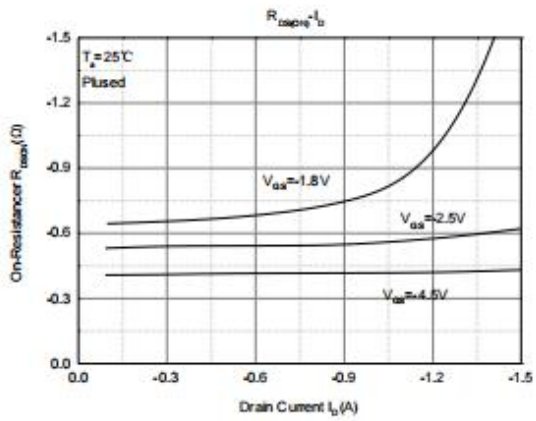
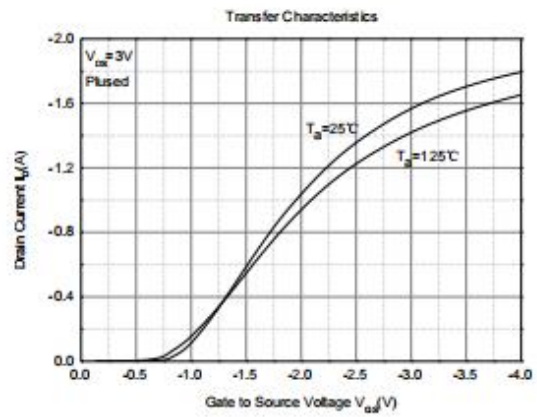
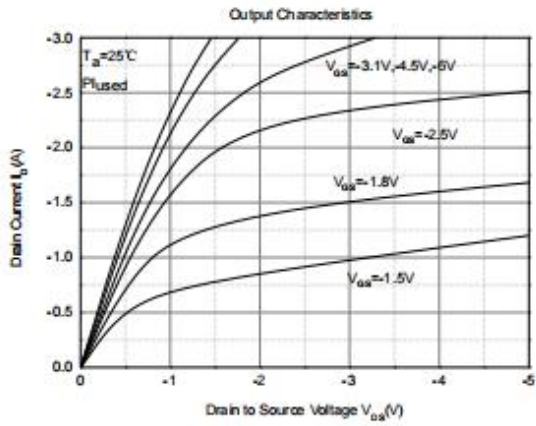
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	-20	V
Gate-Source Voltage	V <sub>GS</sub>	±12	V
Continuous Drain Current	I <sub>D</sub>	-0.66	A
Pulsed Drain Current <sup>(1)</sup>	I <sub>DM</sub>	-1.8	A
Power Dissipation <sup>(2)</sup>	P <sub>D</sub>	150	W
Thermal Resistance from Junction to Ambient <sup>(1)</sup>	R <sub>θJA</sub>	833	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55~ +150	°C

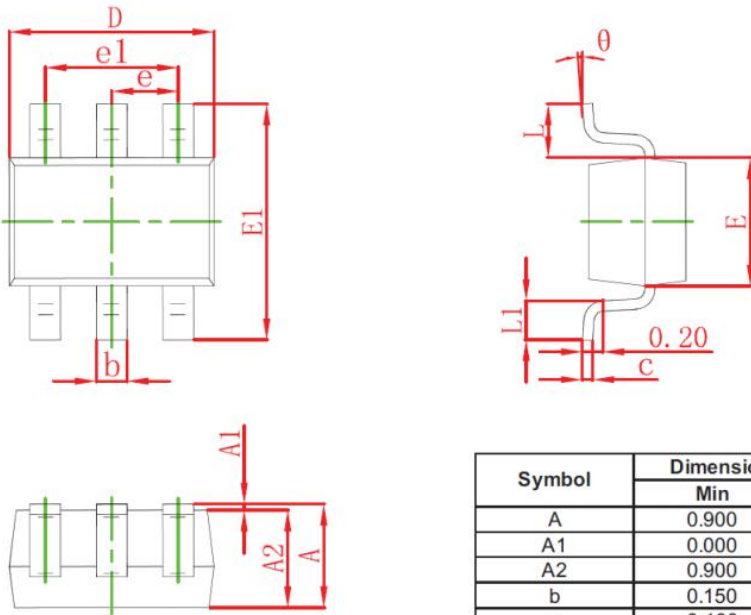
**MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>STATIC CHARACTERISTICS</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±20	uA
Gate threshold voltage <sup>(3)</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.35	-0.61	-1.1	V
Drain-source on-resistance <sup>(3)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -1A		450	580	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -0.8A		650	840	
		V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -0.5A		950		
Forward tranconductance	g <sub>FS</sub>	V <sub>DS</sub> = -10V, I <sub>D</sub> = -0.54A	0.8			S
<b>DYNAMIC CHARACTERISTICS<sup>(4)</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V, f = 1MHz		113		pF
Output Capacitance	C <sub>oss</sub>			15		
Reverse Transfer Capacitance	C <sub>rss</sub>			9		
<b>SWITCHING CHARACTERISTICS<sup>(4)</sup></b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DS</sub> = -10V, I <sub>D</sub> = -200mA, V <sub>GS</sub> = -4.5V, R <sub>G</sub> = 10Ω		9		nS
Turn-on rise time	t <sub>r</sub>			5.7		
Turn-off delay time	t <sub>d(off)</sub>			32.6		
Turn-off fall time	t <sub>f</sub>			20.3		
<b>SOURCE-DRAIN DIODE CHARACTERISTICS</b>						
Diode Forward voltage	V <sub>DS</sub>	I <sub>S</sub> = -0.5A, V <sub>GS</sub> = 0V			-1.2	V

**Notes :**

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2.This test is performed with no heat sink at T<sub>a</sub>=25°C.
- 3.Pulse Test : Pulse Width ≤ 300 μ s, Duty Cycle ≤ 0.5%.
- 4.These parameters have no way to verify.

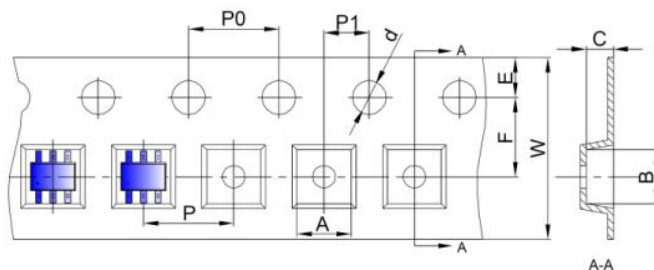




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
$\theta$	0°	8°	0°	8°

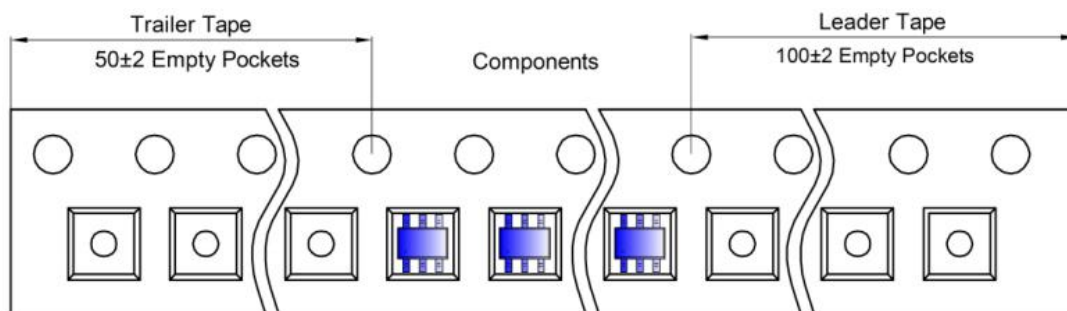
SOT-363 Tape and Reel

SOT-363 Embossed Carrier Tape

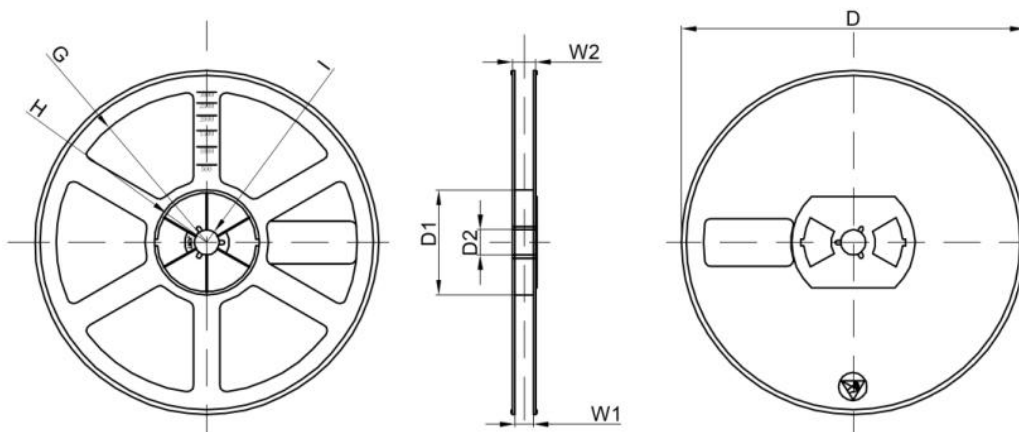


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-363 Tape Leader and Trailer



SOT-363 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	