

PW3599KDW

30V N-Channel + P-Channel MOSFET

-0.4A -30V; $R_{DS(ON)typ}=690m\Omega@-4.5V$, $R_{DS(ON)typ}=480m\Omega@-10V$.
 0.75A30V; $R_{DS(ON)typ}=320m\Omega@4.5V$, $R_{DS(ON)typ}=290m\Omega@10V$.

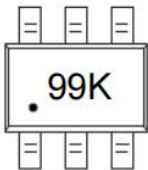
FEATURE

- Surface Mount Package
- Low $R_{DS(on)}$
- Low leakage current
- ESD Protected

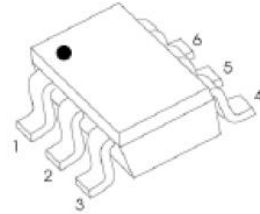
Application

- Low voltage applications
- Load/Power Switching
- Battery Management for Ultra Small Portable Electronics

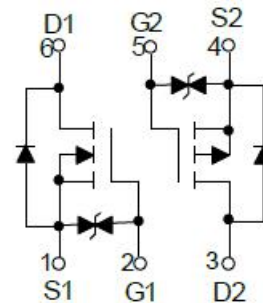
MARKING:



SOT-363



Schematic diagram



ABSOLUTE MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
P-MOSFET			
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	±12	V
Continuous Drain Current ⁽¹⁾	I _D	-0.4	A
Pulsed Drain Current	I _{DM}	-1.2	A
Power Dissipation	P _D	1.4	W
N-MOSFET			
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	±12	V
Continuous Drain Current	I _D	0.75	A
Pulsed Drain Current ⁽¹⁾	I _{DM}	2.2	A
Power Dissipation	P _D	1.4	W
Temperature and Thermal Resistance			
Thermal Resistance from Junction to Ambient ⁽²⁾	R _{θJA}	89	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~ +150	°C

P-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	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±10	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.55	-1.45	-1.95	V
Drain-source on-resistance ⁽³⁾	R _{DS(on)}	V _{GS} = -10V, I _D = -0.30A		480	620	mΩ
		V _{GS} = -4.5V, I _D = -0.30A		690	900	
Forward tranconductance	g _{FS}	V _{DS} = -10V, I _D = -0.30A		1.2		S
DYNAMIC CHARACTERISTICS⁽⁴⁾						
Input Capacitance	C _{iss}	V _{DS} = -10V, V _{GS} = 0V, F = 1.0MHz		120		pF
Output Capacitance	C _{oss}			18		
Reverse Transfer Capacitance	C _{rss}			9		
SWITCHING CHARACTERISTICS⁽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			6		
Turn-off delay time	t _{d(off)}			34		
Turn-off fall time	t _f			20		
SOURCES-DRAIN DIODE CHARACTERISTICS						
Diode forward voltage	V _{DS}	I _S = -0.4A, V _{GS} = 0V			-1.2	V

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

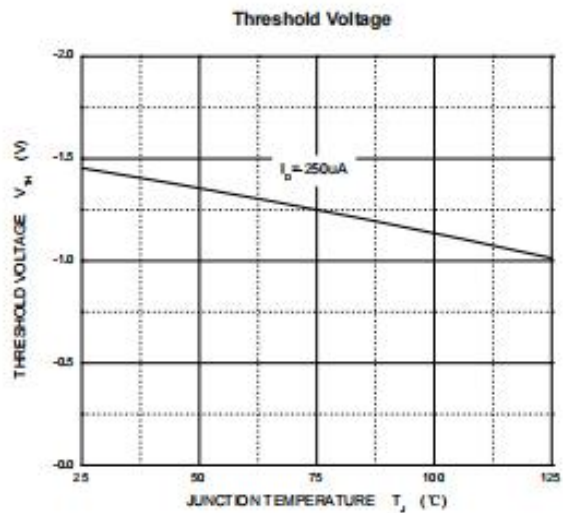
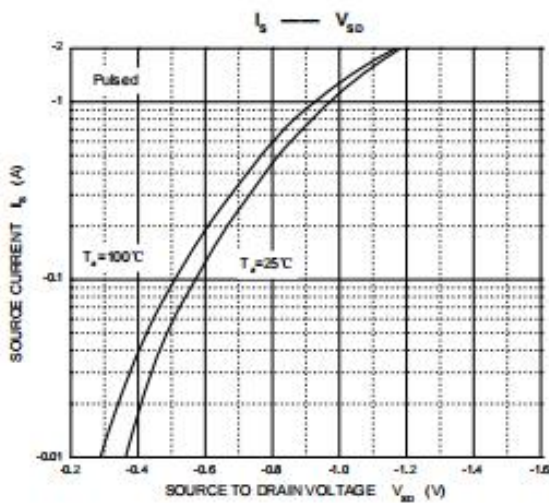
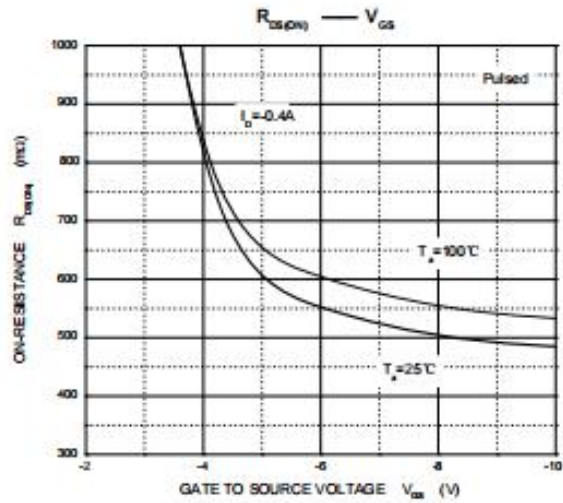
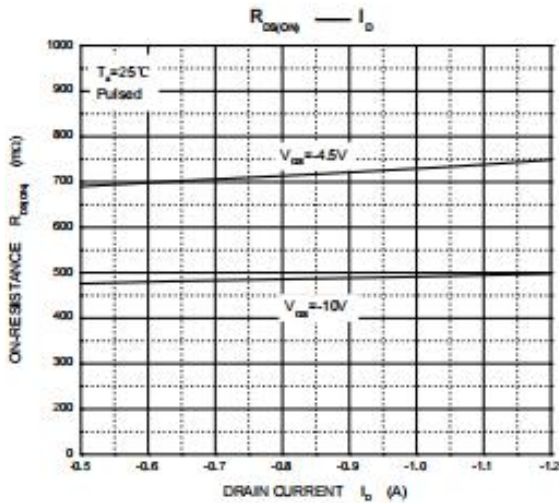
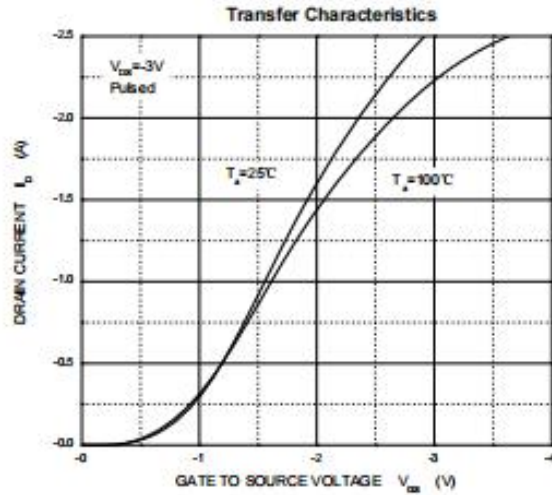
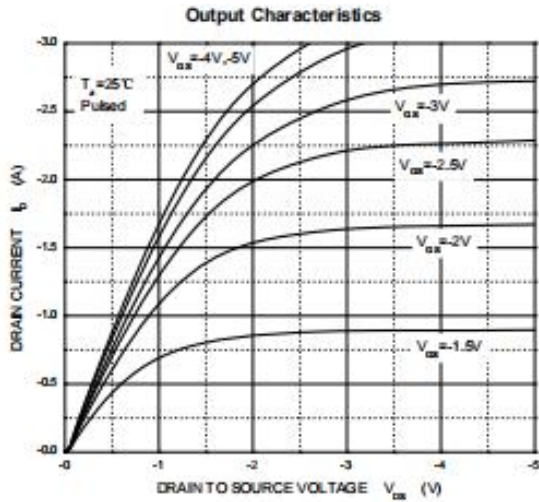
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±3	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.5	1.0	1.5	V
Drain-source on-resistance ⁽³⁾	R _{DS(on)}	V _{GS} = 10V, I _D = 0.6A		290	370	mΩ
		V _{GS} = 4.5V, I _D = 0.6A		320	420	
Forward tranconductance	g _{FS}	V _{DS} = 5V, I _D = 0.5A		0.9		S
DYNAMIC CHARACTERISTICS⁽⁴⁾						
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, F = 1.0MHz		44		pF
Output Capacitance	C _{oss}			15		
Reverse Transfer Capacitance	C _{rss}			8		
SWITCHING CHARACTERISTICS⁽⁴⁾						
Turn-on delay time	t _{d(on)}	V _{DD} = 10V, I _D = 0.7A V _{GS} = 4.5V, R _{GEN} = 51Ω		5		nS
Turn-on rise time	t _r			8		
Turn-off delay time	t _{d(off)}			23		
Turn-off fall time	t _f			41		
SOURCES-DRAIN DIODE CHARACTERISTICS						
Diode forward voltage	V _{DS}	I _S = 0.6A, V _{GS} = 0V		0.87	1.2	V

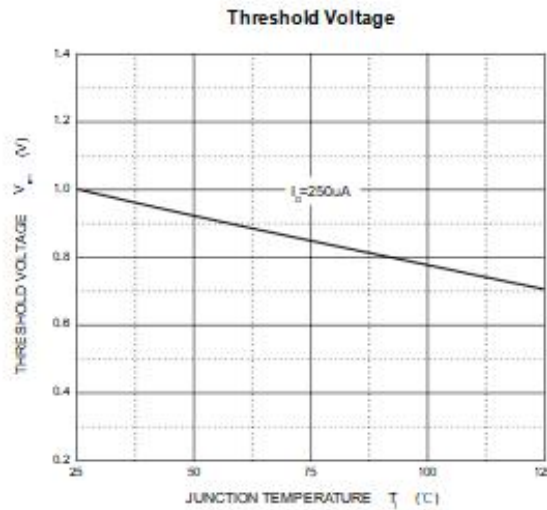
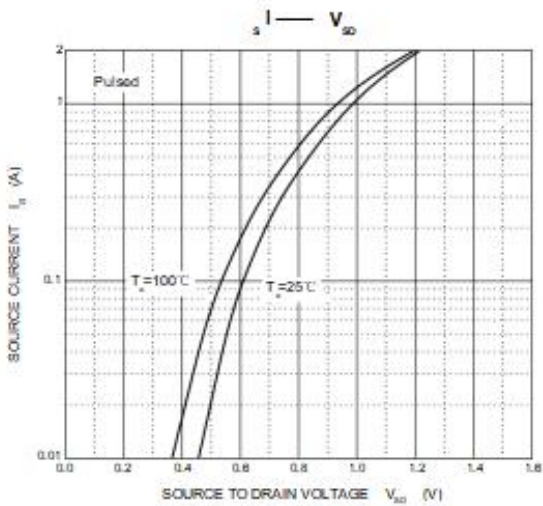
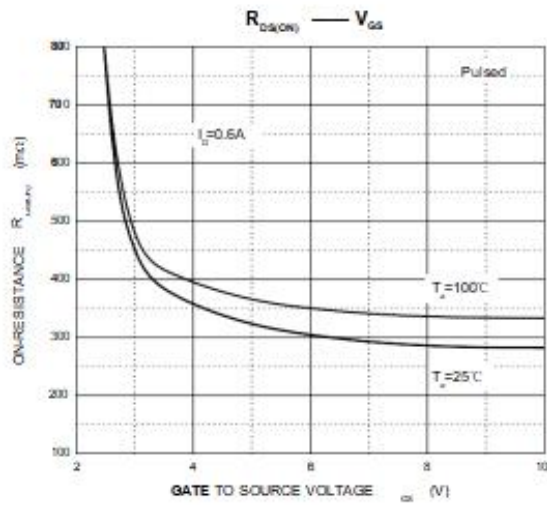
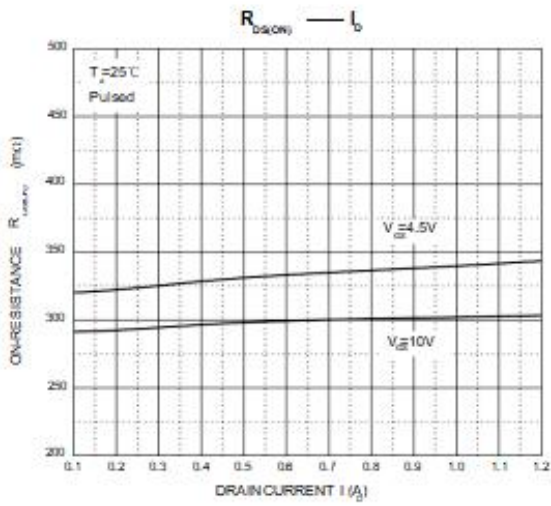
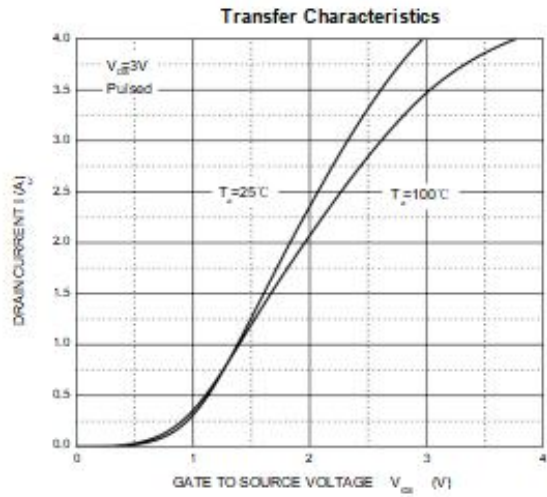
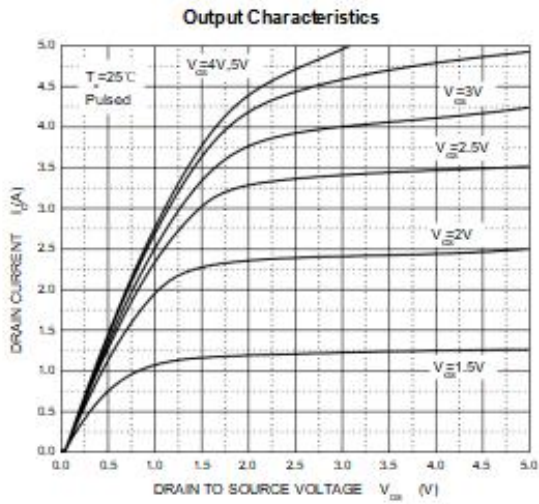
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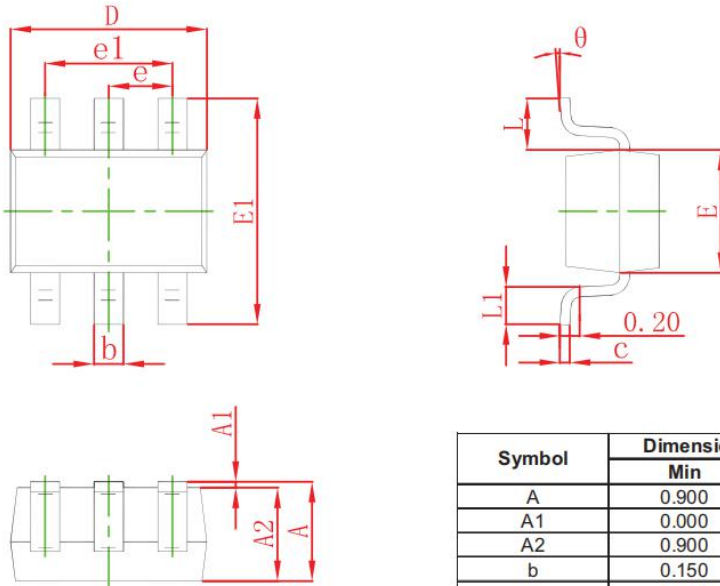
- 1.Repetitive Rating : Pulse width limited by maximum junction temperature.
- 2.Surface Mounted on FR4 Board, t < 5 sec.
- 3.Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
- 4.Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

P-Channel MOS



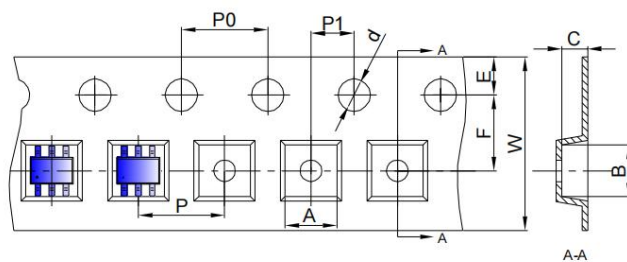




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 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°

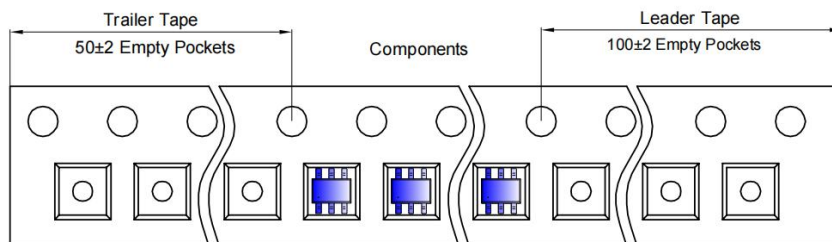
SOT-363 Tape and Reel

SOT-363 Embossed Carrier Tape

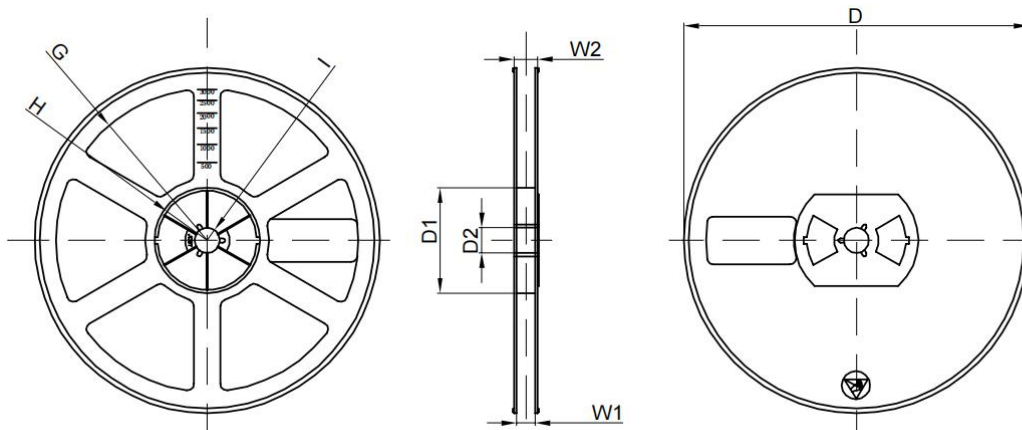


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-363	2.55	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	12.00

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	