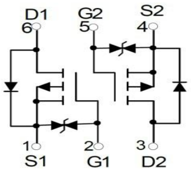
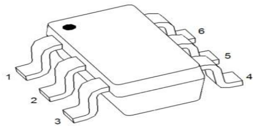
MT3139KDW 20V Dual P-Channel MOSFET



Feature

- 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: 39K

SOT-363

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8	V
Continuous Drain Current	I_D	-0.66	A
Pulsed Drain Current(1)	I_{DM}	-1.2	A
Power Dissipation(2)	P_D	150	mW
Thermal Resistance from Junction to Ambient(1)	$R_{\theta JA}$	833	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

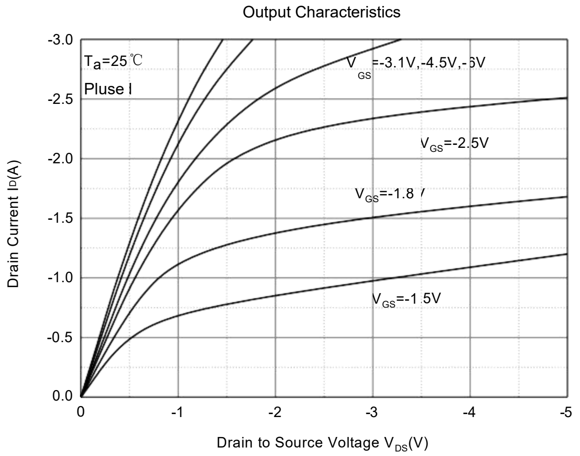
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

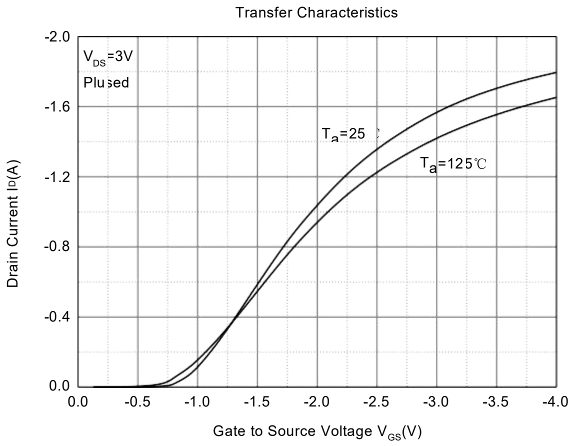
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±20	μA
Gate threshold voltage(3	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.35	-0.61	-1.1	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-1A		450	520	mΩ
		V_{GS} =-2.5V, I_D =-0.8A		650	780	
		V_{GS} =-1.8V, I_D =-0.5A		950		
Forward tranconductance	g_{FS}	V_{DS} =-10V, I_D =-0.54A	0.8			S
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(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		
Source-Drain Diode characteristics						
Diode forward voltage(3)	V_{DS}	I_S=-0.5A, V_{GS} = 0V			-1.2	V

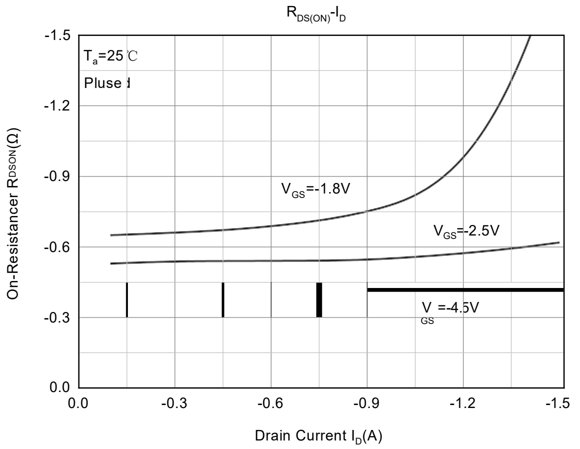
Notes:

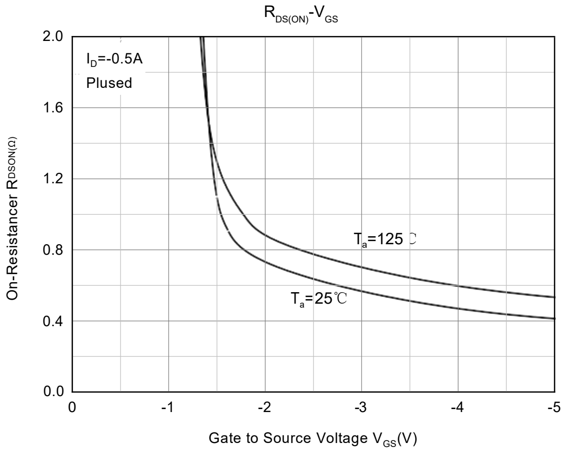
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at Ta=25℃.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

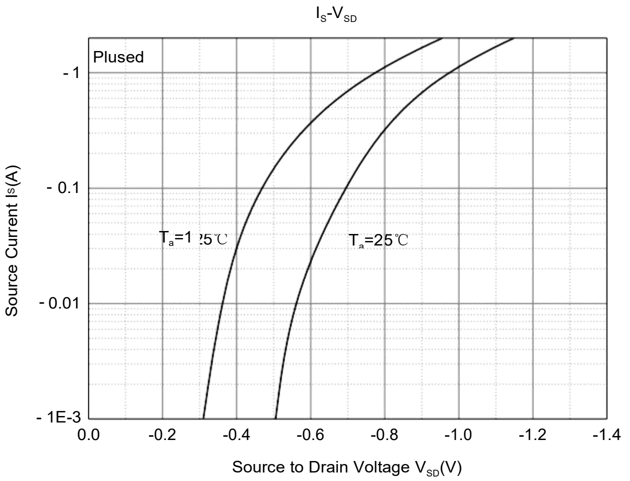
Typical Electrical and Thermal Characteristics

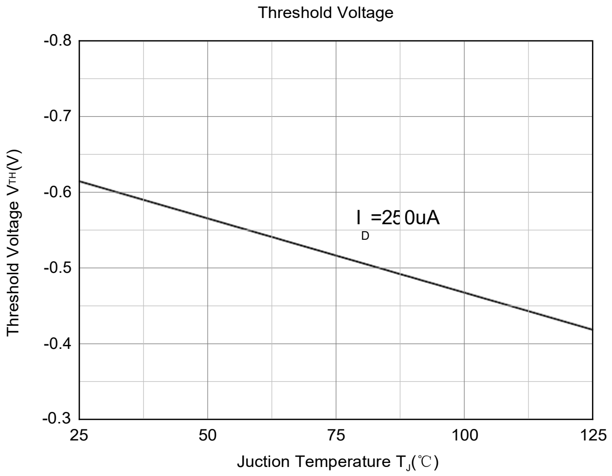




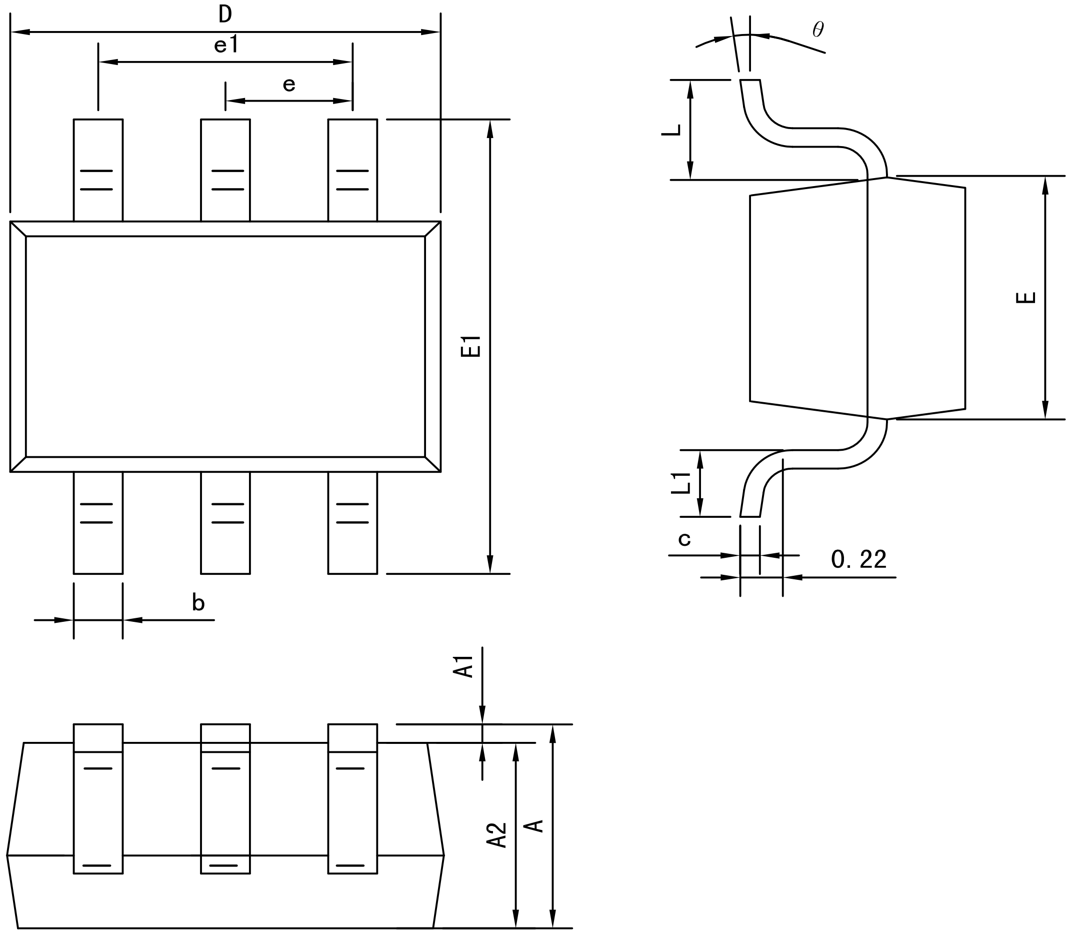






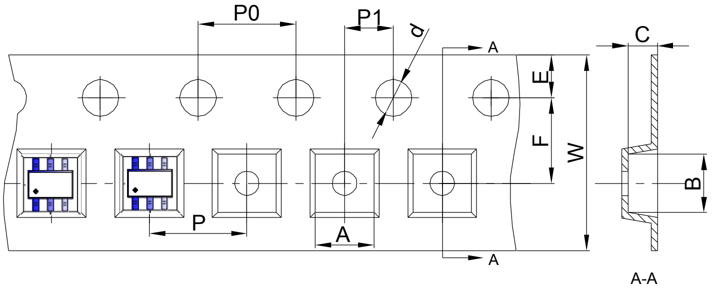


SOT-363 Package outline dimensions



Symbol	Dimension in Millimeters	
	Min	**Max**
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
θ	0°	8°

SOT-363 Embossed Carrier Tape



Packaging Description:

SOT-363 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

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