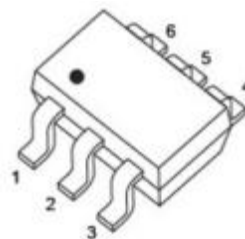


SOT-363 Plastic-Encapsulate MOSFETS

N-Channel+ P-Channel Enhancement Mode MOSFET

$V_{(BR)DSS}$	$R_{DS(on)Max}$	$I_D MAX$
20V	380mΩ@4.5V	0.75A
	450mΩ@2.5V	
	800mΩ@1.8V	
-20V	520mΩ@-4.5V	-0.66A
	700mΩ@-2.5V	
	950mΩ(TYP)@-1.8V	

SOT-363



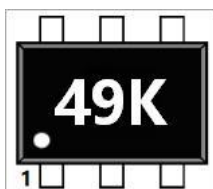
Feature

- Lead Free Product is Acquired
- Surface Mount Package
- Moisture Sensitivity Level 3
- High-Side Switching
- Fast Switching Speed
- ESD Protected Gate

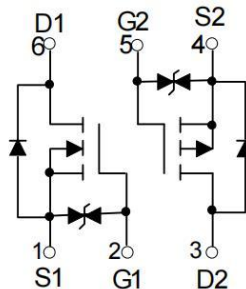
Mechanical Data

- SOT-363 Small Outline Plastic Package.
- Epoxy UL: 94V-0.
- Mounting Position: Any.

Marking



Equivalent circuit



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

Parameter	Symbol	Value	Unit
N-Channel 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=10us)	I_{DM}	1.8	A
P-Channel 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=10us)	I_{DM}	-1.2	A

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

Parameter	Symbol	Value	Unit
Power Dissipation, Temperature and Thermal Resistance			
Power Dissipation	P _D	150	mW
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C
Thermal Resistance from Junction to Ambient ^①	R _{θJA}	833	°C/W
Lead Temperature for Soldering Purposes (1/8" from case for 10s)	T _L	260	°C

MOSFET ELECTRICAL CHARACTERISTICS
T_a=25°C unless otherwise specified

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	20	--	--	V
V _{GS(TH)}	Gate Threshold Voltage ^②	V _{DS} =V _{GS} , I _D =250μA	0.35	0.54	1.1	V
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±10V, V _{DS} =0V	--	--	±20	μA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V	--	--	1	μA
R _{DS(ON)}	Drain-Source On-Resistance ^②	V _{GS} =4.5V, I _D =0.65A	--	270	380	mΩ
		V _{GS} =2.5V, I _D =0.55A	--	320	450	mΩ
		V _{GS} =1.8V, I _D =0.45A	--	390	800	mΩ
g _{fs}	Forward trans conductance ^②	V _{DS} =10V, I _D =0.8A	--	1.6	--	S
V _{SD}	Diode forward voltage	V _{GS} =0V, I _S =0.15A	--	--	1.2	V

Dynamic Electrical Characteristics^④

C _{iss}	Input Capacitance	V _{DS} =16V V _{GS} =0V f= 1MHz	--	79	120	pF
C _{oss}	Output Capacitance		--	13	20	pF
C _{rss}	Reverse Transfer Capacitance		--	9	15	pF

Switching Characteristics^{③④}

t _{d(on)}	Turn on Delay Time	V _{DS} =10V V _{GS} =4.5V I _D =500mA R _{GEN} =10Ω	--	6.7	--	ns
t _r	Turn-on Rise Time		--	4.8	--	ns
t _{d(off)}	Turn Off Delay Time		--	17.3	--	ns
t _f	Turn-off Fall Time		--	7.4	--	ns

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-20	--	--	V
$V_{GS(TH)}$	Gate Threshold Voltage ^③	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35	-0.45	-1.1	V
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 10V, V_{DS}=0V$	--	--	± 20	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-20V, V_{GS}=0V$	--	--	-1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance ^③	$V_{GS}=-4.5V, I_D=-1A$	--	430	520	m Ω
		$V_{GS}=-2.5V, I_D=-0.8A$	--	624	700	m Ω
		$V_{GS}=-1.8V, I_D=-0.5A$	--	950	--	m Ω
g_{fs}	Forward trans conductance	$V_{DS}=-10V, I_D=-0.54A$	0.8	--	--	S
V_{SD}	Diode forward voltage	$V_{GS}=0V, I_S=-0.5A$	--	--	-1.2	V

Dynamic Electrical Characteristics^④

C_{iss}	Input Capacitance	$V_{DS}=-16V$ $V_{GS}=0V$ $f=1MHz$	--	113	170	pF
C_{oss}	Output Capacitance		--	15	25	pF
C_{rss}	Reverse Transfer Capacitance		--	9	15	pF

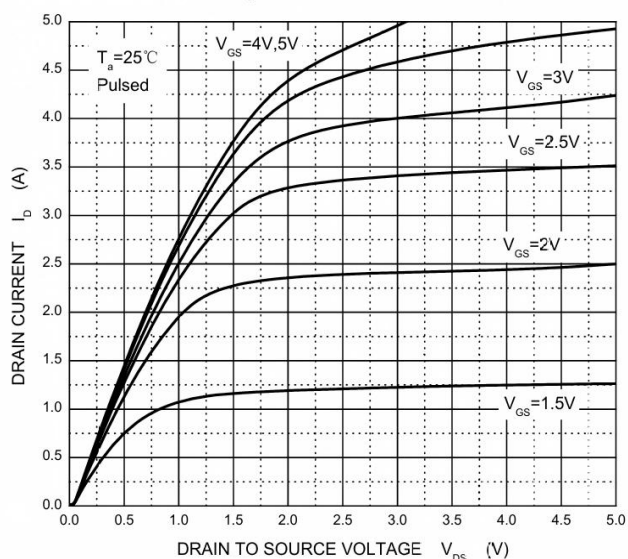
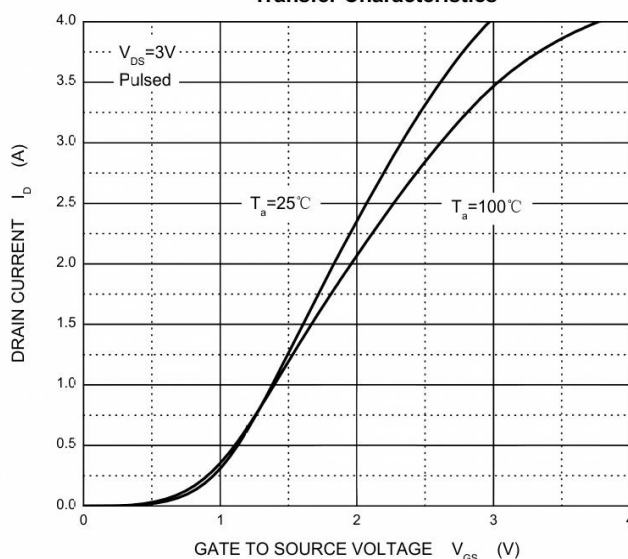
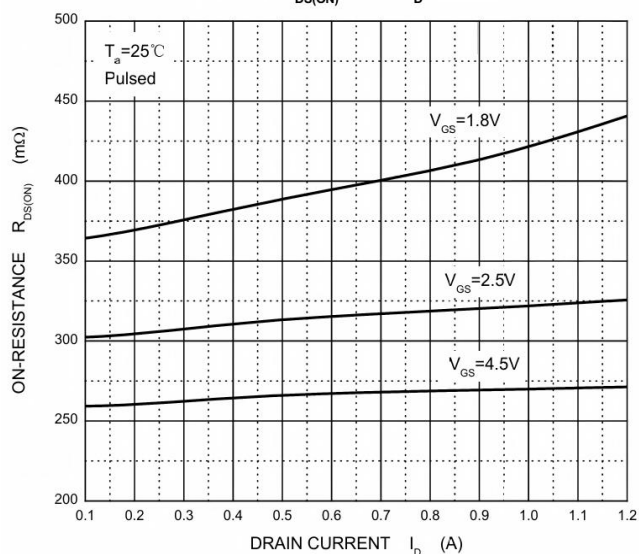
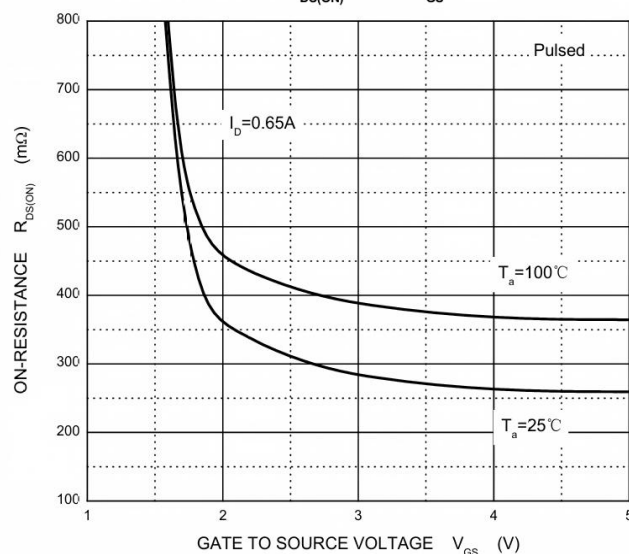
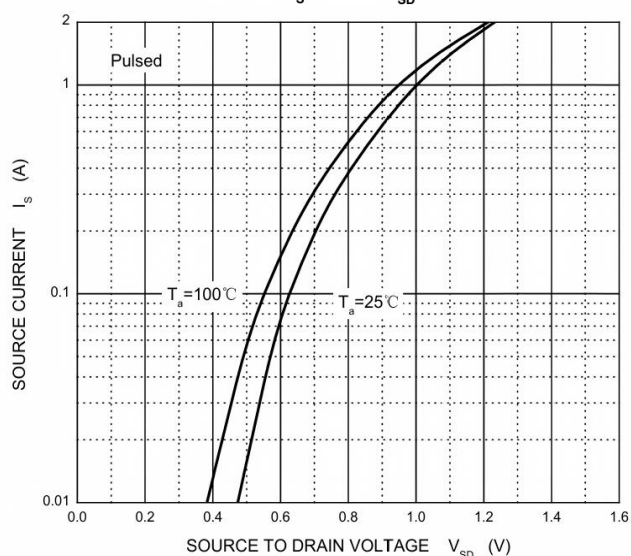
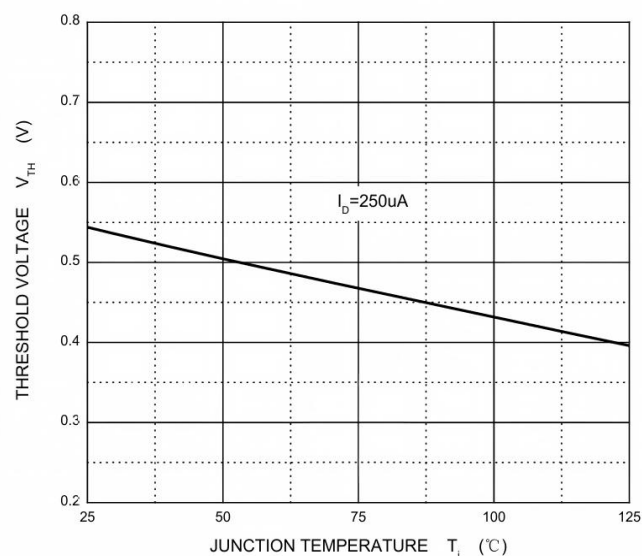
Switching Characteristics^{③④}

$t_{d(on)}$	Turn on Delay Time	$V_{DS}=-10V$ $V_{GS}=-4.5V$ $I_D=-200mA$ $R_{GEN}=10\Omega$	--	9	--	ns
t_r	Turn-on Rise Time		--	5.8	--	ns
$t_{d(off)}$	Turn Off Delay Time		--	32.7	--	ns
t_f	Turn-off Fall Time		--	20.3	--	ns

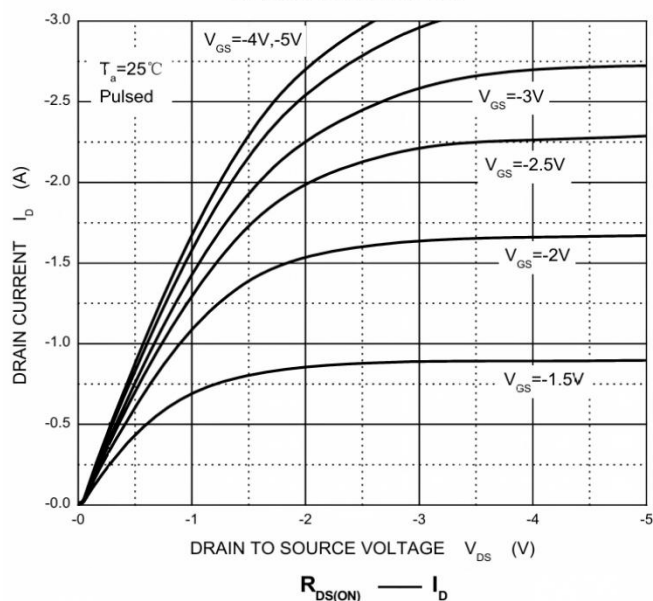
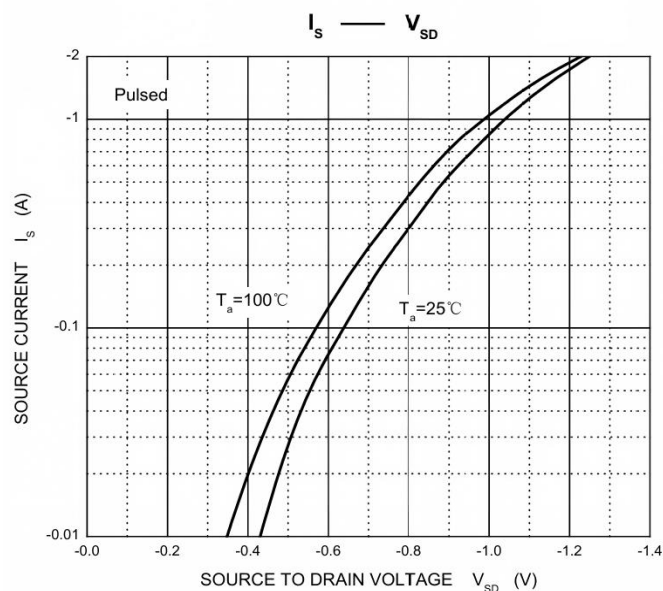
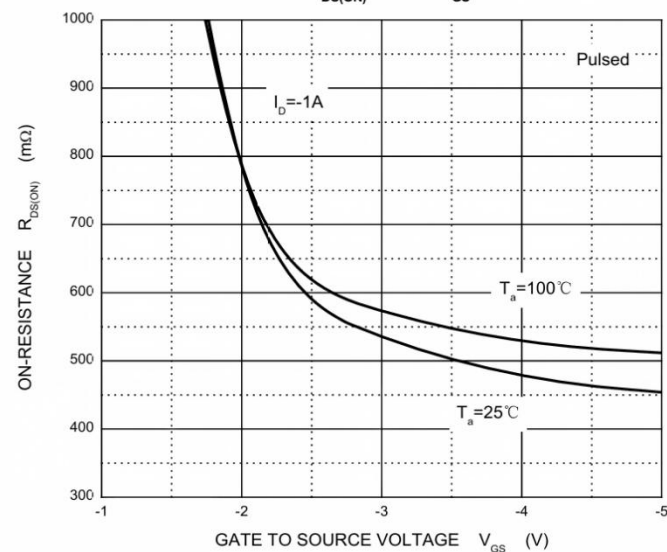
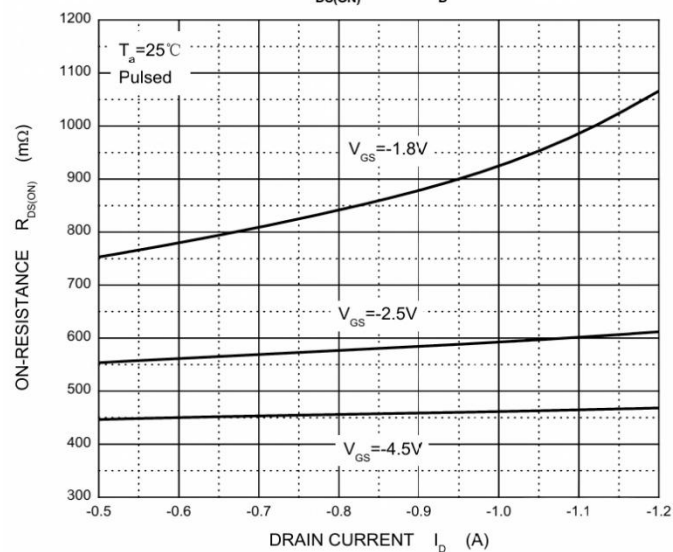
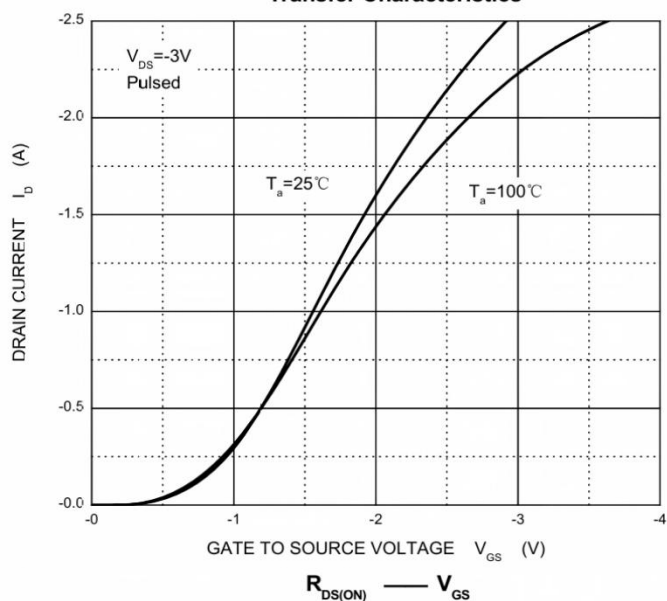
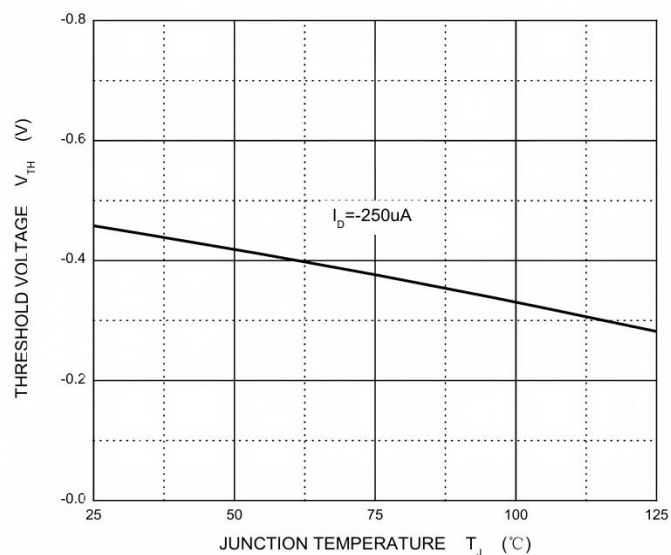
Notes:

- ①Surface mounted on FR4 board using the minimum recommended pad size
- ②Pulse Test : Pulse Width=300us,Duty Cycle $\leq 2\%$
- ③Switching characteristics are independent of operating junction temperature
- ④Granted by design, not subject to producing

Typical Characteristics

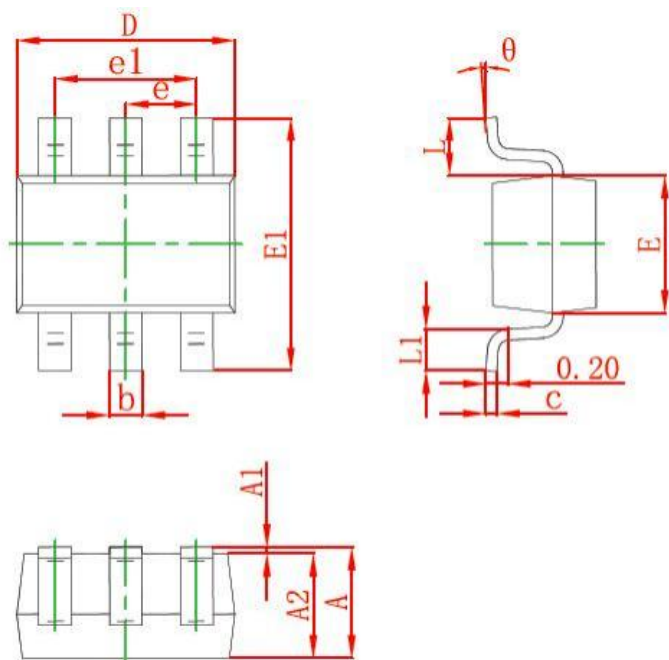
Output Characteristics

Transfer Characteristics

 $R_{DS(ON)}$ — I_D

 $R_{DS(ON)}$ — V_{GS}

 I_S — V_{SD}

Threshold Voltage


Typical Characteristics

Output Characteristics

Transfer Characteristics

Threshold Voltage


Outlitne Drawing

SOT-363 Package Outline Dimensions



Symbol	Dimensions 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	0.100	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.400
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
θ	0°	8°

Important Notice and Disclaimer

Microdiode Electronics (Shenzhen) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

Microdiode Electronics (Shenzhen) makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Microdiode Electronics (Shenzhen) assume any liability for application assistance or customer product design. Microdiode Electronics (Shenzhen) does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Microdiode Electronics (Shenzhen).

Microdiode Electronics (Shenzhen) products are not authorized for use as critical components in life support devices or systems without express written approval of Microdiode Electronics (Shenzhen).