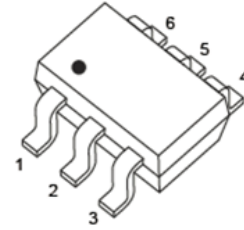


SOT-363

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-20V	520mΩ@-4.5V	-660mA
	700mΩ@-2.5V	



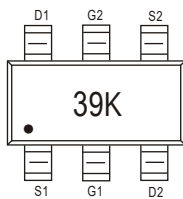
Features

- Low $R_{DS(on)}$
- Low Gate Charge

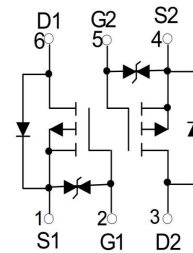
Application

- Logic Level Shift
- Power management

Marking



Equivalent Circuit



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	-660	mA
Pulsed Drain Current ($t_p \leq 10\mu\text{s}$)	I_{DM}	-2640	mA
Power Dissipation	P_D	150	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
Junction Temperature and Storage Temperature	T_J, T_{stg}	-50 ~ 150	$^{\circ}\text{C}$

Notes: Stresses exceeding Maximum Ratings may damage the device.

Maximum Ratings are stress ratings only.

Functional operation above the Recommended Operating Conditions is not implied.

Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Ta = 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
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-20V, V_{GS}=0V	--	--	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±10V, V_{DS}=0V	--	--	±20	uA
V_{GS(TH)}	Gate Threshold Voltage(Note 3)	V_{DS}=V_{GS}, I_D=-250μA	-0.35	-0.45	-1.1	V
R_{DS(ON)}	Drain-Source On-State Resistance(Note 3)	V_{GS}=-4.5V, I_D=-1000mA	--	430	520	mΩ
		V_{GS}=-2.5V, I_D=-500mA	--	624	700	mΩ
g_{fs}	Forward trans conductance	V_{DS}=-10V, I_D=-0.54A	0.8	--	--	S

Dynamic Electrical Characteristics(note4)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
C_{iss}	Input Capacitance	V_{DS}=-16V V_{GS}=0V f=1MHz	--	--	170	pF
C_{oss}	Output Capacitance		--	--	25	pF
C_{rss}	Reverse Transfer Capacitance		--	--	15	pF

Switching Characteristics(note3,4)

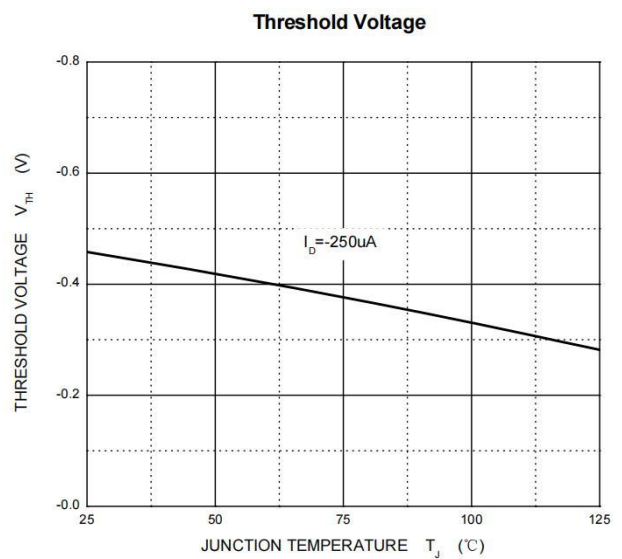
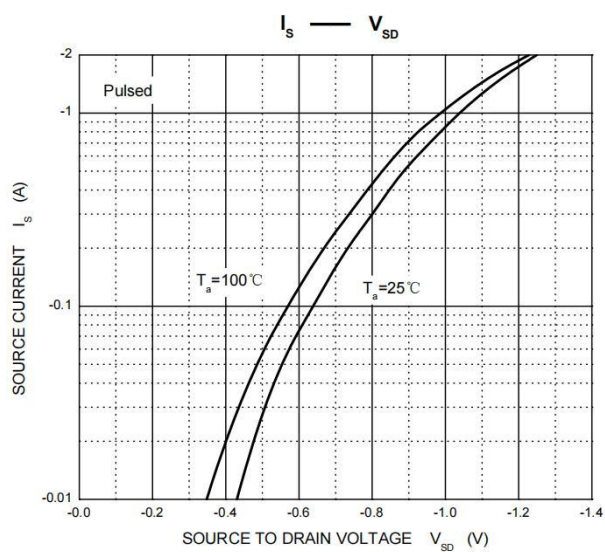
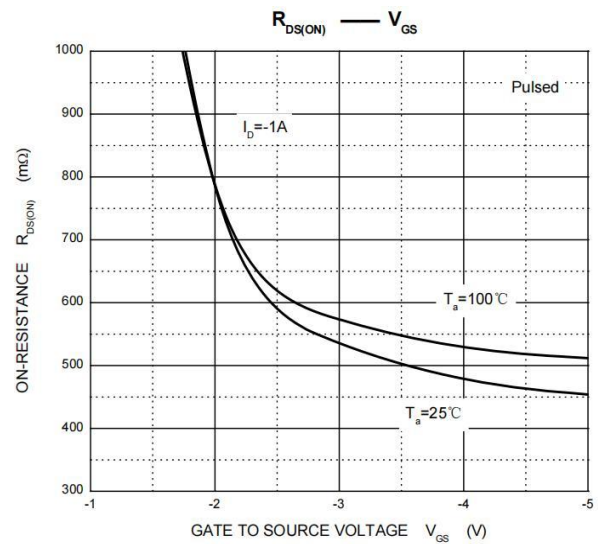
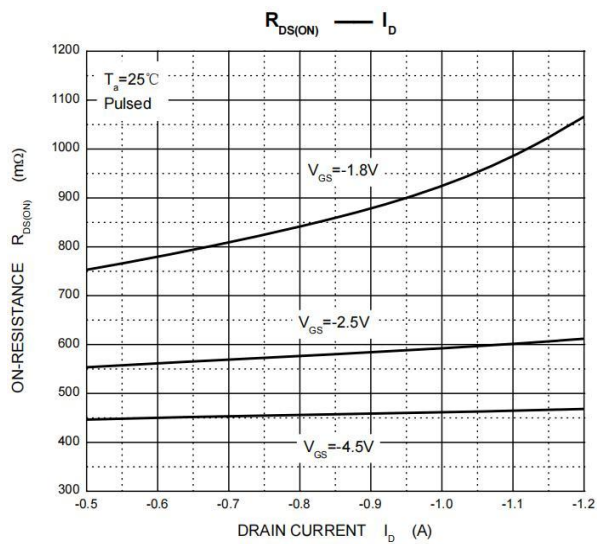
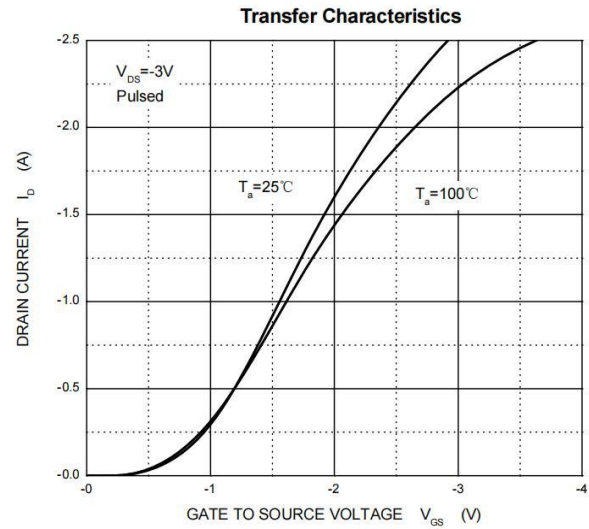
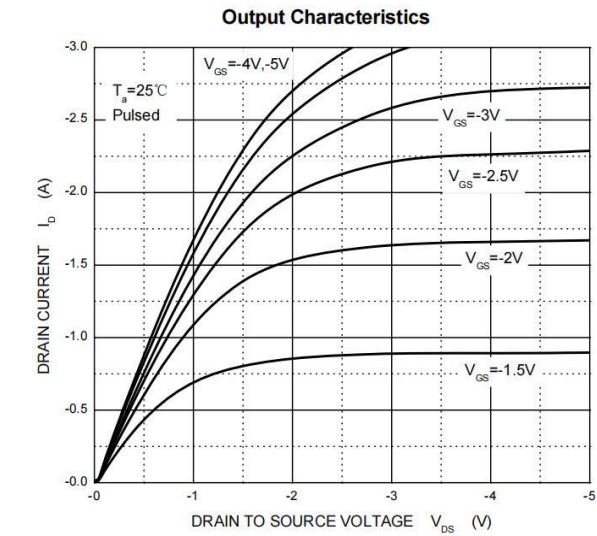
Symbol	Parameter	Condition	Min	Typ	Max	Unit
t_{d(on)}	Turn on Delay Time	V_{DD}=-4.5V I_D=-200mA R_L=10Ω	--	9	--	ns
t_r	Turn on Rise Time		--	5.8	--	ns
t_{d(off)}	Turn Off Delay Time		--	32.7	--	ns
t_f	Turn Off Fall Time		--	20.3	--	ns

Source Drain Diode Characteristics

Symbol	Parameter	Condition	Min	Typ	Max	Unit
I_{SD}	Source drain current(Body Diode)	T_A=25 °C	--	--	-660	mA
V_{SD}	Drain-Source Diode Forward Voltage(Note 3)	I_S=-660mA, V_{GS}=0V	--	--	-1.2	V

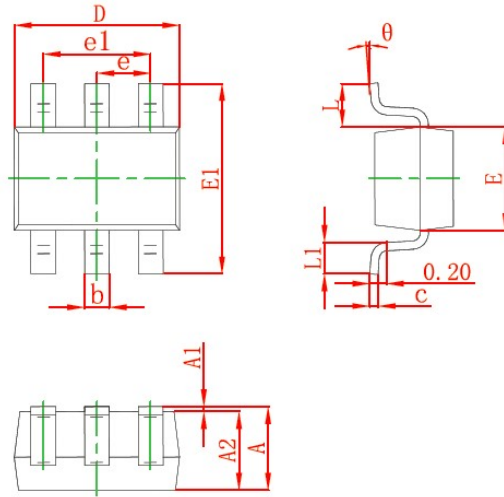
- Notes:**
- 1). Repetitive rating: Pulse width limited by junction temperature.
 - 2). Surface mounted on FR4 board, t ≤10s
 - 3).Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
 - 4). Guaranteed by design, not subject to producing.

Typical Performance Characteristics



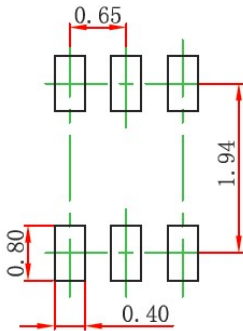
Outlitne Drawing

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°

Suggested Pad Layout



Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

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