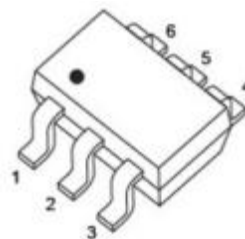


SOT-363 Plastic-Encapsulate MOSFETS

20V N-Channel Enhancement Mode MOSFET

$V_{(BR)DSS}$	$R_{DS(on)Max}$	$I_D MAX$
20V	380mΩ@4.5V	0.75A
	450mΩ@2.5V	
	8000mΩ@1.8V	

SOT-363



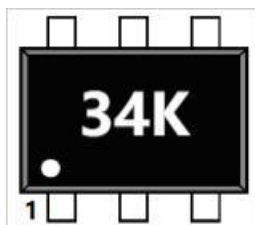
Feature

- Lead Free Product is Acquired
- Surface Mount Package
- N-Channel Switch with Low RDS(on)
- Operated at Low Logic Level Gate Drive
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift.

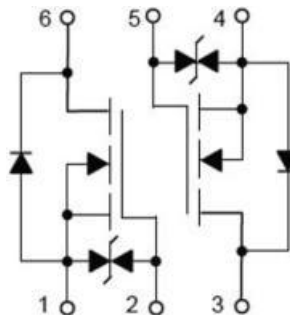
Mechanical Data

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

Marking



Equivalent circuit



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
Drain Current (DC)	I_D	0.75	A
Drain Current (Pulsed), $PW \leq 300\mu s$	I_{DM}	1.80	A
Total Power Dissipation	P_D	350	mW
Junction Temperature	T_J	$-55 \sim +150$	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	$-55 \sim +150$	$^{\circ}\text{C}$
Lead Temperature for Soldering Purposes (1/8" duration for 10s)	T_L	260	$^{\circ}\text{C}$
Thermal Resistance from Junction to Ambient②	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$

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 Voltage②	$V_{DS}=V_{GS}, I_D=250\mu A$	0.35	0.54	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-Resistance②	$V_{GS}=4.5V, I_D=0.65A$	--	270	380	m Ω
		$V_{GS}=2.5V, I_D=0.55A$	--	320	450	m Ω
		$V_{GS}=1.8V, I_D=0.45A$	--	390	800	m Ω
g_{fs}	Forward trans conductance②	$V_{DS}=10V, I_D=0.8A$	--	1.6	--	S
V_{SD}	Diode forward voltage	$V_{GS}=0V, I_S=0.15A$	--	--	1.2	V

Dynamic Electrical Characteristics④

C_{iss}	Input Capacitance	$V_{DS}=16V$ $V_{GS}=0V$ $f=1\text{MHz}$	--	79	120	pF
C_{oss}	Output Capacitance		--	13	20	pF
C_{rss}	Reverse Transfer Capacitance		--	9	15	pF

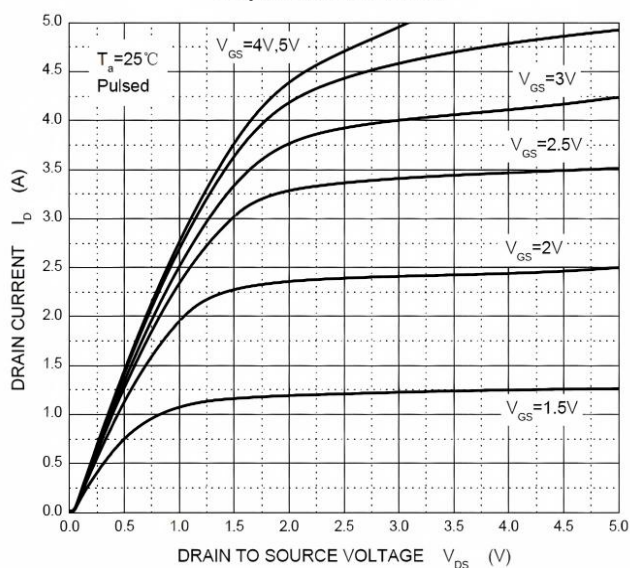
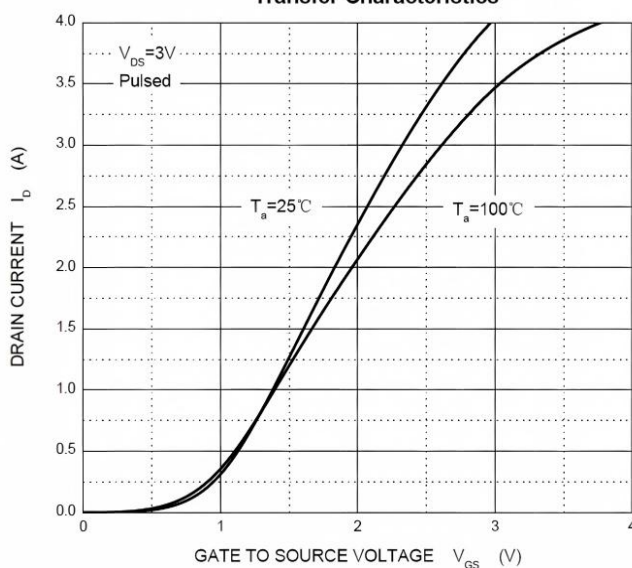
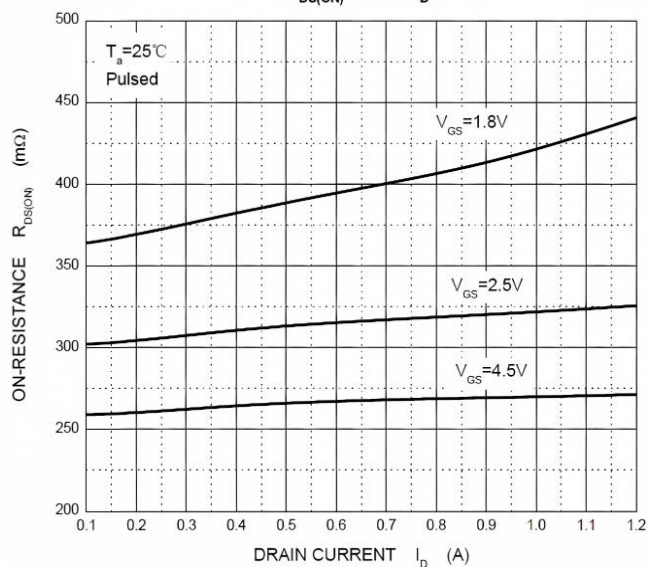
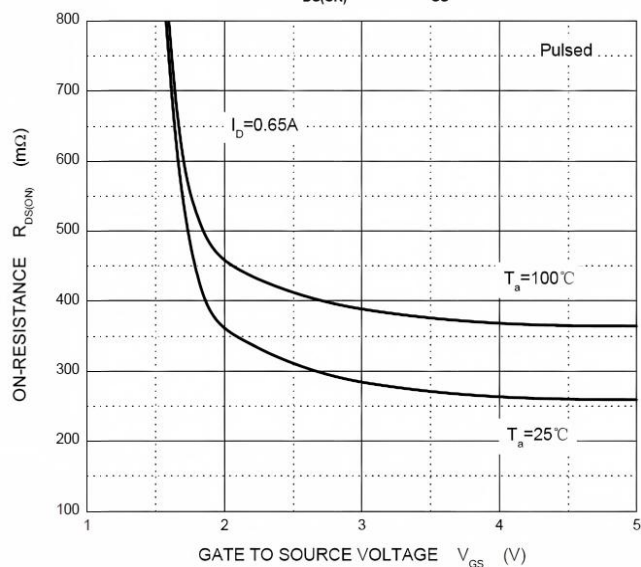
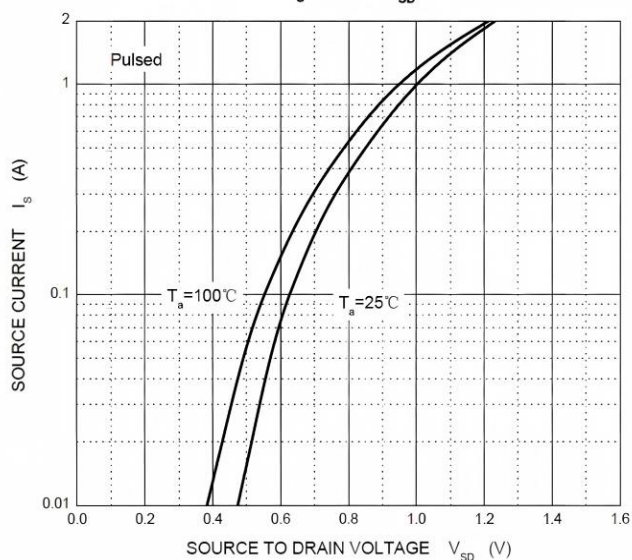
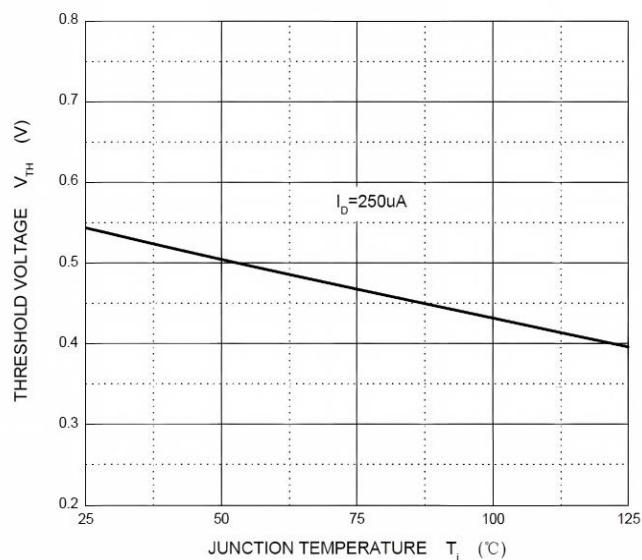
Switching Characteristics④

$t_{d(on)}$	Turn on Delay Time③	$V_{DS}=10V$ $V_{GS}=4.5V$ $I_D=500mA$ $R_{GEN}=10\Omega$	--	6.7	--	ns
t_r	Turn-on Rise Time③		--	4.8	--	ns
$t_{d(off)}$	Turn Off Delay Time③		--	17.3	--	ns
t_f	Turn-off Fall Time③		--	7.4	--	ns

Notes:

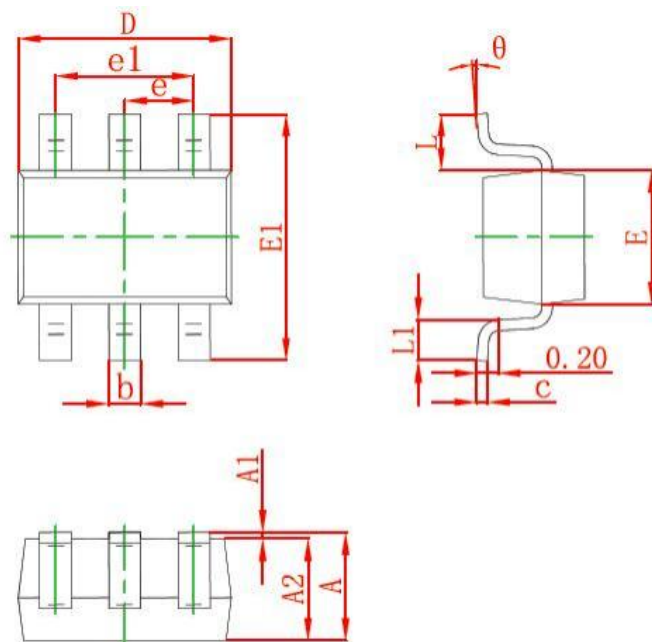
- ①Surface mounted on FR4 board using the minimum recommended pad size
- ②Pulse Test : Pulse Width=300 μs , Duty Cycle=2%
- ③Switching characteristics are independent of operating junction temperatures
- ④Guaranteed by design, not subject to producing

Typical Characteristics

Output Characteristics

Transfer Characteristics

 $R_{DS(ON)}$ — I_D

 $R_{DS(ON)}$ — V_{GS}

 I_S — V_{SD}

Threshold Voltage


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°

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